SYSTEMIC RACISM: PERCEPTIONS, STRESS, AND COPING AMONG AFRICAN
AMERICAN COLLEGE STUDENTS

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ABSTRACT

College attrition represents a serious and persistent problem for ethnic minority students. Although there has been a plethora of research examining retention rates, most have focused on difficulty paying for college and financial strain. Importantly, past studies suggest that minority stress in the form of discrimination and lack of support on campus represents an additional barrier for African American students at predominantly White four-year institutions. The current study furthers our understanding of the experience of African American students by focusing on a previously unstudied race-related stress: systemic racism. Furthermore, the current investigation focuses on mental and physical health outcomes among students, in addition to academic outcomes which have been traditionally studied. Finally, this study examines the role of support from kin, same race friends, and religiosity as potential buffers from the impact of systemic-racism related stress.

A sample of 472 students with mean age of 20.65 (SD=1.53), of which 99 identified as Black/African American and 373 as White/European American or Caucasian was recruited from a large public university. The results indicate that African American students perceived higher levels of systemic-racism related stress than their European American counterparts. Among African American respondents, systemic-racism related stress was related to lower levels of academic engagement, after control for general and undergraduate stress. Among European American students higher levels of systemic-racism related stress were related to higher levels of academic engagement. The study also finds that having many same race college friends reduces racism-related stress among African American students, while high levels of kinship support are related to higher levels of racism-related stress. Ethnic identity and racial socialization buffered

the negative impact of racism-related stress on health outcomes, but only at low levels of stress. Similarly, kinship support was related to better outcomes at low levels of stress, but had no positive impact on physical or mental health outcomes at high levels of racism-related stress. Finally, religious participation and spirituality were related to lower levels of mental and physical health functioning for college students. However, at high levels of racism-stress, students with high levels of religiosity reported better adjustment than students with low levels of religiosity. The results hold important implications for the mental and physical health functioning of ethnic minority college students.

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CHAPTER 1

INTRODUCTION

For many college students, the transition from adolescence into early adulthood can be a stressful one, and this is especially true for ethnic minority students (Swim et al., 2004; Morrison, 2010; Gusa, 2010; Cabrera et al., 1999). Due to high levels of transitional stress and race related stress, combined with a lack of formal support network, African American college students at predominantly White universities are at increased risk for decreased academic, psychological and physical health functioning (Mendoza-Denton, Downey, Purdie, David & Pietrzak, 2002; Allen, Epps & Hanniff, 1991; Nettles, 1988; D'Augelli & Hershberger, 1993). In a socioeconomic climate in which a college degree is prerequisite for future success, it is increasingly important to study the unique experiences of African Americans students at four year academic institutions. The current study applies Lazarus and Folkman's (1984) phenomenological model of stress to understanding antecedents and outcomes of systemic racism related stress faced by minority students at a four-year, predominantly White institution. In addition, this study will examine how social support and coping moderate the relation between race-related stress and deleterious outcomes. Finally, the current investigation examines the impact of racism related stress on self-reported health status among African American college students, as both research and theory suggest that elevated levels of stress are uniquely related to one's physical health status (Clark et al., 1999; McEwen, 2003; McEwen, 2004). A better understanding of the experience of African American college students has the potential to help inform programs aimed at improving retention rates and fostering positive mental and physical health behaviors among students.

The current study contributes to the existing literature in several important ways. First,

rather than focusing exclusively on retention rates and academic engagement as outcomes, we emphasize the need to study mental and physical health outcomes among minority students. This is particularly important given the increased levels of stress minority students are hypothesized to experience. Furthermore, previous research suggests higher than normal levels of depression, hypertension and cardiovascular disease among African Americans (Black et al., 2010; Ogden, Carroll & Flegal, 2008; Harris, Kuramoto, Schulzer & Retallack, 2009). Relatedly, the current study focuses on eating behaviors and weight status (in addition to other health outcomes), as African Americans are significantly more likely than European Americans to be overweight and/or obese and are consequently at increased risk for developing cardiovascular disease and other weight related ailments (Black et al., 2010; Ogden et al., 2008; Napolitano & Himes, 2011). Second, the current investigation examines the impact of an understudied stressor among African Americans - the perception of systemic racism. Studying the perceptions and impact of systemic racism among college students is especially important, as attending a predominantly White university is hypothesized to be related to increased exposure to racism related stress. In addition, as late adolescents embark on their college career they must begin thinking and planning for their academic and occupational future, and consider how race will play a role in the opportunities they may have. We aim to establish systemic racism related stress as a unique stressor among ethnic minority college students by comparing the results of African American students to those of European American backgrounds, and by controlling for global levels of stress experienced by most college students. Finally, we also contribute to the emerging literature on coping by examining how social support from other Black students on campus as well as support from kin, the church and spirituality attenuates the deleterious impact of racism.

Stress and Health:

In order to better understand the relation between stress and its sequela, the current study utilizes Lazarus and Folkman's (1984) phenomenological model of stress. According to Lazarus and Folkman (1984), "psychological stress is a particular relation between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being". (p. 19). This model proposes that stress occurs via two simultaneous cognitive processes. The first consists of primary appraisals, which establishes an event as being stressful or benign to the individual, while secondary appraisals consist of the individual assessing his/her available coping responses as well as their potential efficacy given the particular event (Lazarus & Folkman, 1984). The process of secondary appraisals also helps to explain and identify individuals who perceive an event as stressful but are able to avoid deleterious outcomes. According to this perspective, individuals who interpret events as stressful and are unable to execute proper coping responses suffer damage to both their mental and physical health. This is critical as research shows that stress is related to increased physiological and psychological responses which ultimately lead to long-term mental and physical health deficits (Williams, Spencer & Jackson, 1999; Williams, Yu, Jackson & Anderson, 1997; Williams, Neighbors & Jackson, 2003). The proposed link between chronic stress and physiological dysfunction is thought to be mediated by a process known as "allostatic overload" (McEwen, 2004). According to the allostatic model, the body naturally releases hormones, neurotransmitters and other chemicals in response to changes in the environment (a process known as allostasis), and the release of these chemicals into the bloodstream enables organisms to maintain homoestasis or balance in the face of challenges or change. However, while allostatis is beneficial and promotes adaptation, the presence of high levels of stress hormones in

the bloodstream for prolonged periods of time eventually leads to wear-and-tear on the body, elevating susceptibility to cardiovascular, metabolic and immune deficiencies (McEwen, 2004; McEwen, 2003; Brindley & Rolland, 1989). Additionally, higher than normal levels of stress hormones such as cortisol in the bloodstream also have a serious and pervasive effect on brain structure and functioning, and are linked to the development of mental illness such as depression and anxiety (McEwen, 2003; McEwen & Lasley, 2003).

Ample research indicates a significant relation between stress and lower levels of physical and mental health functioning (Williams et al., 1997). Research with adults indicates that chronic stress is related to increased cardiovascular reactivity, including elevated blood pressure and resting heart rate (Fleming, Baum, Rectanus & McArdle, 1987; Eliot, Buell & Demobrosky, 1982; Williams, Yu & Jackson, 1997). In addition, both chronic and acute stress have been linked to immune and neuroendocrine functioning (Andersen et al., 1994; Herd, 1991), such that adults who experience higher levels of stress display immune system deficiencies and are more prone to disease (Cohen & Herbert, 1996). Interestingly, research suggests that even children and adolescents who experience high levels of economic and neighborhood stress have increased cardiovascular reactivity compared to their more affluent counterparts (Gump, Matthews & Raikkonen, 1999; Adler et al., 1994; Evans, Bullinger & Hygge, 1998). Stress has also been established as a significant contributor to obesity and overweight in adolescence, as individuals under a great deal of stress tend to overeat, consume more fatty foods, exercise less and experience difficulty losing excess weight (Flak, Jankord, Solomon, Krause & Herman, 2011; Weisman, Hillemeier, Symons Downs, Chuang & Dyer, 2010; Chambers et al., 2004). Together these findings suggest that stress contributes to heart disease and cardiovascular functioning both directly and indirectly. It is especially important to

study the impact of stress on physical health status among young adults as they make the transition into college or university life as this transition is one marked by elevated levels of stress, as well as significant declines in healthy dietary habits and exercise patterns (Vella-Zarb & Elgar, 2010; Nelson, Kocos, Lytle & Perry, 2009; Wane, van Uffelen & Brown, 2010). In addition, the impact of stress on one's health is cumulative in nature (McEwen, 2003), and identifying and preventing elevated stress levels earlier in life may hold important public health implications. Identifying triggers for and preventing unhealthy eating and exercise patterns in early adulthood is especially important, as these behaviors are often initiated in college and persist into adulthood (Freedman & Waldrop, 2011; Nelson et al., 2009).

In terms of mental health, stress is related to a multitude of deleterious outcomes for both adults and adolescents. Stressful life events are linked to an increased sensitivity to anxiety among both adolescents and adults, including onset of panic attacks and generalized anxiety disorder (McLaughlin & Hatzenbuehler, 2008). Similarly, stress is related to increased levels of depressive symptoms and clinical depression (McEwen, 2003; McEwen, 2004; Brown & Rosellini, 2011; Kessler, 1997; Tennant, 2002). Among college students and adolescents in particular, stress is also significantly related to suicidal behaviors and thoughts (Garland & Zigler, 1993; Rudd, 1989). Much like its impact on physical health, it is especially important to study the impact of stress on mental health in adolescence (Romeo, 2010; Romeo & McEwen, 2007). Research suggests that greater stress during adolescence is associated with elevated levels of both anxiety and depressive symptoms in adulthood (Ge, Conger & Elder, 2001; Ge, Lorenz, Conger, Elder & Simons, 2004; Marin et al., 2011). It appears that stress responses during the transition into adulthood have a lasting impact on stress responses in adulthood (Romeo, 2010). Therefore, adolescence may be the perfect developmental time period for interventions aimed at

reducing stress levels by either changing appraisals of stressful events or arming individuals with effective coping strategies.

The College Experience for African American Students:

A particularly salient source of stress for many late adolescents is the transition into college life, and this transition is especially difficult for minority students entering predominantly White universities and to a lesser extent those at Historically Black Colleges and Universities (HBCUs; Allen, 1992). Elevated levels of stress take their toll on the academic success of ethnic minority students (Braddock & Dawkins, 1981; Allen, Epps & Hanniff, 1991). College at four-year institutions. As of 1999, only 40.4% of African Americans who began study at a four year institution received a diploma compared to 58.9% of European Americans (NCES, 2005). Furthermore, only 36% of African American males completed college compared to 47% of African American females (Journal of Blacks in Higher Education, 2007). Interestingly, many HBCUs are also plagued by high rates of attrition, with an average graduation rate of 36%, a full 20 percent lower than predominantly White schools (http://www.npr.org/templates/story/story.php?storyId=129832485). In addition to low rates of graduation, research indicates a significant decline in academic motivation among African American college students throughout their college career, especially among women (Pascarella et al., 2004), and African Americans with undergraduate degrees are significantly less likely than their White counterparts to attend graduate or professional schools after college (Walpole, 2006).

Beyond the academic outcomes associated with race-related stressors, the elevated levels of stress are related to other psychological and physical health outcomes (Jones, Harrell, Morris-Prather, Thomas & Omowale, 1996). For instance, African American students at predominantly White universities report higher levels of depressive symptoms and anxiety than their European

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American counterparts (Rudd, 1989). Furthermore, African American students are significantly more likely to be overweight or obese than students of other racial or ethnic backgrounds (Napolitano & Himes, 2011), as well as suffer from hypertensive symptoms including high blood pressure and higher than normal resting heart rate (Crump, 2010; Walden, 1994). To date, the examination of mental and physical health among African American college students remains understudied, compared to academic outcomes.

Previous research on contributors to stress among African American college students has primarily focused on difficulty paying for college (Simms et al., 2003; Robertson & Mason, 2008). However, the focus on financial strain fails to account for the persistence of certain students over others, and fails to recognize the additional sources of stress minority students contend with on a daily basis (Greer & Chwalisz, 2007). In other words, it is important to recognize that students from other racial and ethnic backgrounds also experience financial distress, but continue to graduate at higher rates than African Americans. Research suggests that race-related stress contributes to elevated levels of distress above and beyond global stress levels for African American students (Sanders Thompson, 2002; Greer & Chwalisz, 2007), and race-related stress is a stronger predictor of academic success than college entrance exams (Smedley, Myers & Harrell, 1993). Discrimination from fellow students is a chronic and persistent stressor for students, with one study citing that nearly 89% of African American students report experiencing discrimination in the form of violence or name calling while in college (Carter, 2007). In addition, African Americans and other minority students report experiencing distress due to the lack of racial/ethnic diversity among students and faculty members on campus (Robertson & Mason, 2008).

Minority stress can also come from in-group members in the form of acculturative stress

such as family members urging students to act less "White" (Thompson, Lightfoot, Castillo & Hurst, 2010). Finally, stereotype threat may also represent a significant source of stress for African American students, who may underestimate their intellectual or academic abilities (Blasovich, Spencer, Quinn & Steele, 2001; Steele & Aronson, 1995). Consistent with this hypothesis, research indicates that minority college students experience higher levels of stress at predominantly White universities than do they do at HBCUs (Greer & Chwalisz, 2007).

The Impact of Systemic Racism: In addition to the more widely studied race related variables identified in the preceding discussion, it is important examine other sources of race-related stress that may diminish students' mental health and academic motivation, such as accurate perceptions of the racial hierarchy in the United States, or systemic racism (Feagin, 2006). Institutional or systemic racism refer to "the range of policies and practices that contribute to the systematic disadvantages of members of certain groups" (p. 197, Pager & Shepherd, 2008). Institutional racism has three main dimensions through which group based inequalities are perpetuated (Pager, 2007): 1. A legacy of historical discrimination that includes overtly racist housing, employment and educational policies, 2. Contemporary state policies and practices, which are reflected in the state of inner-city schools or the incarceration rate among Black men (Sampson & Lauritsen 1997), and 3. Accumulation of disadvantage, which refers to the extreme difficulty many African Americans have pulling themselves out of poverty given the forces that operate against them. Although there has been a relative dearth of psychological investigation on the impact of institutional racism, research does suggest that African American adolescents report higher levels of collective racism, or racism towards their racial group as a whole, than their White counterparts (Fisher, Wallace & Fenton, 2000; Bonilla-Silva, 2006), and are adversely affected by these perceptions (Seaton, Yip & Sellers, 2009; Chavous et al., 2008).

Systemic racism is especially important to study in the transition into adulthood, because of its implications for future social, political and financial opportunities for most African Americans. Additionally, it is important to examine the perceptions of experiences with systemic racism on African American students, because unlike interpersonal forms of racial discrimination and prejudice this form of racism uniquely affects African Americans (Mills, 2000; Feagin, 2006; Bonilla-Silva, 2006). In order to accurately comprehend the unique experience of young African American men and women, it is necessary to investigate the stressors that are unique to this minority group. Research has consistently linked perceptions of interpersonal racism and discrimination to deleterious mental and physical health outcomes (Harrell et al., 2003; Chambers et al., 2004; Krieger & Sidney, 1996; Clark, Anderson, Clark & Williams, 1999; Krieger, Rowley, Herman, Avery & Phillips, 1993). Therefore, it is reasonable to believe a similar relation will exist for systemic racism. To truly understand the impact of systemic racism on African American college students, it is first necessary to disentangle perceptions of racism from the racism related stress response (Harrell, 2000; Lazarus & Folkman, 1984). Doing so allows for a better identification of students most at risk for experiencing distress and other deleterious outcomes associated with racist events.

Perceptions of Systemic Racism: Due to the insidious and subtle nature of systemic racism, it should be expected that some individuals may not recognize it as such (Bonilla-Silva, 2006; Feagin, 2006). To date no study has examined the perceptions of systemic racism as defined above among African Americans. However, some qualitative work does indicate that African Americans are more likely than European Americans to recognize the existence of racial oppression, as well as the racialized hierarchy of opportunity in the United States (Mills, 2000; Bonilla-Silva, 2006; Feagin, 2006). Others have found that only about half of African Americans

attribute housing segregation, lack of job opportunities and lower wages – all symptoms of systemic racism- to racism (Sigelman & Welch, 1991). Similarly, Adams and Dressler (1988) found a great deal of variability in African Americans' perceptions of institutional racism when presented with evidence on residential and school segregation in their city.

As indicated in the general stress literature, individuals tend to be more attuned to events that affect a central component of their self-identity (Lazarus & Folkman, 1984). Research on interpersonal racism consistently demonstrates that both adults and adolescents who have a strong sense of ethnic identity, or a strong sense of belonging to one's ethnic group, also perceive higher levels of discrimination, particularly in ambiguous situations (French et al., 2006; Altshul, Oyserman & Bybee, 2006; Rivas-Drake et al., 2009). Similarly, youth who receive many messages about their cultural background as well as preparation for discrimination in the form of racial socialization also perceive higher levels of discrimination (Hughes et al., 2003), as well as report higher levels of ethnic identity. Research also suggests a relation between SES and perceptions of interpersonal discrimination, although results have been mixed, with some reporting a positive association between SES and perceptions of discrimination, and others reporting opposite results (Forman, Williams & Jackson, 1997; Sigelman & Welch, 1991). In terms of institutional racism, one study reports that African Americans with a higher occupational prestige were more likely to perceive racial inequality in institutional settings, such as school and the workplace (Adams & Dressler, 1988). Other lesser studied sociodemographic variables such as one's neighborhood surroundings are also hypothesized to be related to perceptions of systemic racism. Particularly in the case of systemic racism, it is reasonable to believe that adolescents who grew up in homogenous neighborhoods and attended neighborhood schools which were predominantly African American, have been less frequently exposed to

racial tension. Conversely, those who spent their formative years in more diverse settings, or settings where they represented the minority, are more likely to have been exposed to and be aware of systemic racial inequality. Interestingly, research on interpersonal racism suggests that perceptions of interpersonal racism are maximal when African Americans comprise 50% of the population, and decrease as African Americans make up either the majority or minority of residents (Hunt et al., 2007; Welch et al., 2001). However, it is also important to consider that perceptions of systemic racism are differentially impacted by context, as they require an awareness of the living conditions of White versus Black Americans.

Racism Related Stress: Although ample research has been devoted to understanding variables that contribute to the perception of interpersonal racism, fewer studies have examined factors that contribute to racism related stress. Racism related stress is defined as "race-related transactions between individuals or groups and their environment that emerge from the dynamics of racism, and that are perceived to tax or exceed existing individual and collective resources or threaten well-being." (Harrell, 2000; p. 44) Theoretically, perceptions of racism can lead to racism related stress and negatively impact one's well-being when environmental stimuli becomes internalized, such that stigmatized individuals begin believing negative stereotypes of their ethnic/racial group are true. In addition, negative outcomes can occur when individuals feel a lack of control over their environments and thus lose a sense of self-efficacy for dealing with race-related events (Harrell, 2000; Crocker & Major, 1989). A connection to one's ethnic group and a strong sense of collective identity is a particularly important buffer from interpersonal racism-related stress (Harrell, 2000; Sellers et al., 1998; Phinney, 1990). Racial or ethnic identity provides minority group members with a sense of meaning and understanding of their racial group membership by allowing individuals to focus on positive aspects of their racial

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background (Sellers et al., 1998; Caldwell et al., 2004; Chavous et al., 2008;Fuligni, Witkow & Garcia, 2005). Relatedly, maintaining a positive sense of ethnic identity also provides guidance and coping strategies for dealing with racially stressful events (Harrell, 2000). Research shows that a positive collective identity contributes positively to one's self-esteem which attenuates the over-taxation that is associated with the stress response (Ruggiero & Taylor, 1997; Seaton, Yip & Sellers, 2009; Sellers, Copeland-Linder, Martin & Lewis, 2006; Sellers, Caldwell, Schmeelk-Cone & Zimmerman, 2003). Furthermore, a strong positive racial identity moderates the relation between perceptions of interpersonal racism and negative outcomes, suggesting that those with a strong ethnic identity experience lower levels of racism-related stress (Pieterse & Carter, 2010; Sellers & Shelton, 2003). Similarly, racial socialization, or messages about pride in one's racial/ethnic group, has been found to lower one's reactivity to perceptions of interpersonal racism (Hughes et al., 2006; Boykin & Toms, 1985; Hughes, 2003; Marshall, 1995). Although previous studies have failed to distinguish between perceptions, appraisals and outcomes, together these results hint at the important role that racial identity and socialization play in the stress response. Equally important in mediating the role between perceptions and stress are coping strategies (Lazarus & Folkman, 1984; Harrell, 2000; Liang et al., 2009). Coping is a critical component of the current model as is believed to influence not only the link between perceptions and racism-related stress, but also between stress and subsequent adjustment problems (Lazarus & Folkman, 1984).

Social Support as a Buffer:

Based on the stress and coping model, coping strategies are integral in reducing the negative impact of perceptions and of racism-related stress (Clark et al., 1999; Harrell, 2000). Therefore, it is critically important to investigate buffers that attenuate the harmful impact of

stress on both mental and physical health. It is particularly relevant to identify these resources among African American college students, as minority status has also been shown to limit one's access to coping resources (Kessler, 1979). To date, the majority of research on how African Americans cope, has dealt with responses to general stress despite research showing that dealing with racism related stress requires different responses than dealing with general life stress (Clark et al., 1999; Feagin & Sikes, 1994; Short-Godden, 2004). It is reasonable to believe that youth seek out advice on how to deal with minority issues such as racism related stress from individuals who have had similar experiences. Indeed, African Americans experiencing discrimination are more likely to seek social support for coping than individuals of other racial backgrounds (Sanders Thompson, 2006). Therefore, the current study examines sources of social support that are thought to be provide African American youth with both practical advice such as racism-related coping strategies, as well as emotional support (Taylor, 1996; Krieger, 1990;Short-Gooden, 2004; Stevenson, 1994). It is particularly challenging for African American students at predominantly White universities to find these race-related sources of support due to their minority status on campus (Allen, 1992). Therefore, we focus on three sources that have both historical and contemporary significance in the African American community, and have been empirically established as powerful buffers from the impacts of racism-related stress: kinship support, spiritual and religious support, and friendships with other minority students on campus.

Research has established the role of social support in general in promoting mental and physical health among both adults and adolescents (Thoits, 1995). Social support from various sources has been shown to decrease maladaptive health behaviors among populations experiencing high levels of strain and stress (Johnson & Jennison, 1994; Turner, Mermelstein,

Hitsman & Warnecke, 2008). Research with college students indicates that those with higher levels of social support are less likely to be susceptible to binge drinking and are more likely to succeed academically (Steptoe et al., 2006). Individuals rely on their social support network for both instrumental support, in the form of advice giving, as well as emotional support. Thus, minority students who are experiencing racism related stress are hypothesized to rely on their support network for assistance with developing effective coping responses, as well as an emotional outlet to discuss stressful experiences that European American students may not understand (Stevenson, 1994; Harrell, 2000). It is especially relevant to examine sources of support that offer both these benefits for African Americans, namely, kin social support, religious support and support from fellow minority students.

Kinship Support: Kinship support has long been established as an important resource among African Americans (Boykin, 1986; Boykin & Toms, 1985; Garcia Coll et al., 1996; Haxton & Harknett, 2009; McAdoo, 1978). Support from kin is related to a host of positive outcomes including psychological adjustment of adults (Ceballo & McLoyd, 2002; Taylor & Roberts, 1995) and children (Kana'iaupuni, Donato, Thompson-Color & Stainback, 2005; Taylor, 1996; Taylor, Casten & Flickinger, 1993; Taylor, 2010; Taylor & Roberts, 1995; Taylor et al., 2008). Research with African American adults and college students indicates they are more likely to rely on kin for social support than other sources (McAdoo, 1978; Fisher, 2007). In addition, qualitative research shows that African Americans tend to remain living closer to their kin than other racial groups for both instrumental and emotional considerations (Feagin, 1968; McAdoo, 1978; R.J. Taylor, 1986). To date few studies have examined kinship support among college students, even though it is reasonable to believe that many African American college students will continue relying on the relatives they grew up with for support. It is especially important to

examine kin social support among African American college students, as we know very little about the kinds of relations college students maintain with their extended family once they move away to college. Despite a relative dearth of knowledge, we do know that support from kin is a powerful stress reducer among African Americans, above and beyond social support from other sources (Johnson & Jennison, 1994; Budescu, Taylor & McGill, 2010). African Americans who report higher levels of family cohesion experience lower levels of depression and suicidal ideation at predominantly White universities (Lewis-Harris & Molock, 2000). Furthermore, research does suggest that other family members besides parents are a powerful source of racial socialization messages for adolescents (Stevenson, 1994), and that racial socialization from kin is a significant buffer from racism related stress for youth (Stevenson, 1998). In addition, research does indicate that maintaining a connection to one's old (or childhood) community appears to be linked to better college adjustment for African American students (Cabrera et al., 1999; Nora & Cabrera, 1996). Thus, there is reason to believe that maintaining positive kin relations after moving away to college can reduce the potential impact of stress.

Religion and Spirituality: A second, similarly important source of support for African Americans is the church and religiosity. Religion is thought to be protective because it is related to social support from congregation members and leaders which contributes to an overall sense of belongingness and well-being, and because it is related to spiritual based coping strategies which elicit positive feelings and optimism (Short-Gooden,2004). Research indicates that the church and spirituality are integral sources of support for African Americans dealing with both general and racism related stress (Broman, 1996; Shorter-Gooden, 2004; Taylor, Chatters & Levin, 2004). In a national poll, 85% of African Americans indicated that religion was very important to their lives, more so than any other racial or ethnic group (Newport, 2006). Although being a

member of a congregation and spirituality often go hand in hand, approximately 8% of African Americans indicate they are spiritual, but do not regularly attend church (Chatters et al., 1999), thus it is necessary to conceptualize the two as independent constructs. Spirituality, or belief in a higher being, is especially important to understand as a stress buffer for African American college students as in the African tradition the spirituality and the psyche are deeply intertwined (Boyd-Franklin & Lockwood, 2000; Boyd-Franklin, 2010), meaning that highly spiritual students may be less likely to rely on mental health services in times of need or distress. Indeed, research shows that spirituality is a potent buffer from the deleterious impact of racism and discrimination (Bowen-Reid & Harrell, 2002; Shorter-Gooden, 2004). Similarly, spirituality is an important predictor of African American college students' academic success and motivation (Walker & Dixon, 2002). Presumably, spirituality gives individuals a sense of hope and strength and contributes to resiliency in the face of adversity by shaping appraisals of stress stimuli (McAdoo, 1995). Although some perceive spirituality as a form of giving up control over one's destiny, research indicates that for many African Americans spirituality gives individuals a sense of meaning and elucidates their goals and purpose (Mattis, 2002).

In addition to spirituality, religious participation provides tangible support to African Americans such as financial, social and familial support. African American college students who are struggling with their first time away from home and their community, may turn to the church for social support which may even lead to future career opportunities after graduation (Boyd-Franklin, 2010). In addition to the practical aspects of social support, college students may use the church as a place to meet new individuals from similar backgrounds, which can contribute to a sense of belongingness and better adjustment to a new and foreign environment, and this may be especially important for students attending predominantly White universities

(Taylor et al., 2004). The African American church is a particularly potent place to receive

social support as it often values communalism and collectivism as its core values (Utsey, Adams

& Bolden, 2000; Constantine et al., 2006). Indeed, among African American college students,

higher levels of involvement with a church have been found to be related to better academic

functioning and adjustment (Walker & Dixon, 2002; Phillips, 2000; Constantine et al., 2006).

Qualitative interviews reveal that religious participation helps some college students strive

towards specific academic and occupational goals, and helps them overcome racial barriers to

success at predominantly White universities (Constantine et al., 2006; Mattis & Jagers, 2001).

Attending church offers much needed respite to college students experiencing both racism

related and general life stress (Constantine et al., 2006). Because of the many benefits that both

spirituality and religious participation offer for African American college students, it is

reasonable to believe that both constructs will also provide a powerful buffer from racism-related

stress.

Same Race Friendships: Finally, a related source of social support for minority college students

is both formal and informal participation in intra-racial social groups. Informal participation

involves developing friendships with individuals of the same racial background on campus,

while formal participation consists of involvement in Black student organizations and political

action on campus and beyond. Forging on-campus friendships and becoming involved in

campus organizations can be thought of as part of a larger adjustment process often referred to as

campus involvement or commitment (Astin, 1999). Research on the minority college experience

has consistently linked this involvement to better long-term outcomes such as improved mental

health status as well as higher likelihood of graduation (Pascarella et al., 2004; Eaton & Bean,

1995; Astin, 1999; Fisher, 2007). Much like the other sources of support already highlighted in

the current paper, it is important to consider that in addition to increasing feelings of belongingness, having same-race friendships allows minority students to discuss their race related experiences candidly and receive race specific advice and feedback.

In addition to developing informal support networks with other minority students, formal involvement is also important to the adjustment of minority college students (Tinto, 1987). Formal campus participation consists of participation in collective action such as political, education or legal action that reduces racism, such as being involved in Black organizations on campus. Qualitative research indicates that engaging in collective action reduces stress levels among African American adults experiencing racism (Feagin & Sikes, 1994). Formal participation is an especially relevant resource to consider among college students, as the University environment may promote participation in educational and political reform movements. Furthermore, as adolescents transition into adult roles and become more aware of systemic racism and racial barriers, their desire to participate in organized movements may increase (Boehnke & Wong, 2011). Finally, for many college students, college may represent the first opportunity to engage in collective action, as many high schools discourage this kind of political discourse and adolescents lack the wherewithal to organize their own protests or educational movements. Many college campuses on the other hand have organized clubs for minority students as well as courses that allow for the development of grassroots action and participation.

Participating in collective action is thought to promote positive adaptation in several ways. First, it gives the individual a perceived sense of control over their situation, which negates the feelings of helplessness and despair that may arise from being the victim of racism. This perceived sense of control contributes to one's self-esteem and personal efficacy, and

ultimately promotes positive mental and physical health functioning (Harrell, 2000). Second, participating in collective action promotes a sense of group belongingness with other like-minded individuals, and research shows that a strong sense of belongingness moderates the impact of interpersonal discrimination and promotes positive psychological functioning (Sellers, 1998; Phinney, 1990;Altschul et al., 2006;Ashmore, Deaux & McLaughlin-Volpe, 2004). Finally, research shows that involvement in campus activities in general is critical to the retention of minority college students, as it gives these students a sense of belonging and commitment to their university (Flowers, 2004; Pascarella & Terenzini, 2005; Astin, 1993). Similarly, Tinto (1987) proposes that integration into campus activities increases students' self-efficacy and self-esteem by contributing to their belief that they are intellectually capable of keeping up with other college-level thinkers. Thus, collective action can help minority students cope with stress by giving them a sense of control and mastery, as well as increasing their social network.

Coping Strategies: Because social support from kin, the church and on-campus friends, is thought to increase one's access to effective coping strategies, a quick note is warranted on the kinds of strategies that are thought to be best suited for dealing with racism-related stress. One important type of coping strategy identified in the racism literature is engagement coping, or an attempt at gaining either primary or secondary control over a stressful situation (Compas et al., 2001; Miller & Kaiser, 2001; Wei et al., 2010; Brondolo et al., 2009; Pascoe & Smart Richman, 2009; Harrell, 2000). Primary control coping refers to changing the stressful situation, while secondary control coping refers to adapting to the stressful event (Crocker et al., 2007; Miller & Kaiser, 2001). Of particular interest in the current study is the extent to which primary coping strategies (or active coping) including problem solving, emotional regulation and expression

(Miller & Kaiser, 2001) promote well-being among African Americans experiencing racism related stress. Problem solving involves participation in action that is aimed at reducing the stressful stimuli. In the case of systemic racism, this may include participation in political and educational campaigns. Research does indicate that African American adults who engage in political action tend to enjoy better mental health (Boehnke & Wong, 2011; Brown & Brown, 2004; Alex-Assensoh & Assensoh, 2001). Presumably, participation in these kinds of movements contributes to a sense of self-efficacy and mastery as well as a perceived sense of control over the situation. Emotional regulation and expression are equally important because they consist of learning to convert negative emotions such as anger and frustration into adaptive responses. In addition, emotional regulation can consist of suppression of competing activities (Carver et al., 1989), such that the victimized individual can put aside their negative feelings and calmly consider his or her options. In the general stress literature, primary coping responses are linked to better adaptation to stressful events (Miller & Kaiser, 2001), therefore, it is thought that these coping responses will be most effective at reducing racism related stress.

In the current mode, active coping is thought to partially mediate the relation between social support and positive mental and physical health for multiple reasons. First, social support has been to shown to elevate one's well-being and self-esteem, therefore, individuals who have high levels of social support should have higher self-efficacy and engage in more active coping responses. And second, social support from kin, the church and other minority friends, is thought to elevate active coping strategy because each of these three sources of support provides direct knowledge about how to most effectively deal with racism related stressors.

Current Study:

In sum, the primary aims of the current study are to establish systemic racism-related stress as an

additional burden for African American college students at a predominantly White four-year university, above and beyond the universal stressors associated with the transition into university life. Consistent with the phenomenological model of stress (Lazarus & Folkman, 1984), the current study seeks to disentangle perceptions, appraisals and coping responses associated with systemic racism. We hope to identify variables that place late adolescents at risk for increased perceptions of systemic racism, as well as increased levels of racism-related stress. In addition, the study aims to establish social support from same-race peers, kin and the church as buffers from the negative impact of racism-related stress. The model being tested in the current paper is presented in Figure 1. Overall, we maintain that the path between perceptions of systemic racism and negative mental/physical health outcomes is mediated by the stress-appraisal process, in which the individual must decide whether the event at hand is damaging to his or her sense of well-being. Based on prior research and theories of interpersonal racism, we expect that certain variables such ethnic identity and racial socialization will have an impact on both perceptions and appraisals of racism related stress (Pieterse & Carter, 2010; Ashmore et al., 2004; Caldwell et al., 2004; Rowley et al., 2008; Seaton et al., 2009; Hughes & Johnson, 2001; Hughes et al., 2006; Neblett et al., 2006). Furthermore, we believe that the coping resources we have identified will provide a potent buffer from the negative impact of racism-related stress for minority college students.

Aim 1: To determine whether African American college students perceive higher levels of systemic racism and experience higher levels of racism related stress than their European American counterparts. In addition, the study aims to examine whether elevated levels of stress are significantly related to mental and physical health functioning after controlling for non-race related college stress.

Hypothesis 1a. Based on previous research on interpersonal discrimination it is hypothesized that African American students will report significantly higher mean levels of perceived systemic racism than European American students (Krieger, 1990; Harrell, 2000). In addition, it is expected that African American students will experience higher levels of racism-related stress than their European American counterparts.

Hypothesis 1b. Based on systemic racism theory (Feagin, 2006; Mills, 2000), we predict that the overall model (Figure 1) will be a better fit for African American students than it will be for European American students. Specifically, we predict a poor fit for European American students. Systemic racism theory posits that systemic racism has a direct negative impact of African Americans in the United States (Feagin, 2006). In addition, sociological evidence suggests that White Americans are for the most part unaware of systemic racism or the racial nature of power and wealth distribution in the United States (Mills, 2000). Therefore, levels of both perceptions of racism and racism related stress should be near zero for White students, and should show little variability. On the other hand, African American students should report higher levels of racism and stress, and demonstrate more variability in their responses (Bonilla-Silva, 2006).

Hypothesis 1c. Because systemic racism is thought to affect African Americans more so than their European American counterparts, it is hypothesized that even after controlling for global levels of stress and stress due to personal racial discrimination, the path between systemic racism-related stress and mental/physical health outcomes will be non-significant for European American students, and will be significant for African American respondents. Specifically, we predict that for African American students, higher levels of racism related stress will be related to lower levels of mental and physical health functioning and lower levels of academic

adjustment. Previous research on interpersonal racism demonstrates a clear and consistent negative impact of racism related stress on both mental and physical health outcomes (Peters , 2004; Clark, 2000; Constantine, 2006).

Aim 2: To determine what psychological and socio-demographic characteristics place certain individuals at increased risk for perceiving racism and for experiencing racism-related stress. Sociological research suggests that not all African Americans agree that systemic racism exists (Feagin, 2006), and not all those who perceive racism are adversely affected by it (Harrell, 2000), therefore it is necessary to identify variables that place individuals at higher or lower risk for these perceptions.

Hypothesis 2a.   Based on previous research on interpersonal discrimination, it is hypothesized that African American students with higher levels of ethnic identity, specifically centrality (how connected one feels to his or her racial group) and regard (the positive or negative evaluations one has of his/her racial group); higher levels of racial socialization; and those coming from predominantly African American neighborhoods will perceive higher levels of systemic racism. Research on interpersonal racism indicates that having a strong sense of identification with one's ethnic group raises awareness to race-related events, such as the presence of racism (Phinney, 1990; Phinney, 1992; Sellers et al., 1998; Ashmore et al., 2004). Additionally, new college students coming from homogenous surroundings into a new and more heterogeneous environment are expected to be less accustomed to racial inequality and discrimination (Yip et al., 2010) and consequently more aware of racist stimuli.

Hypothesis 2b. In terms of the path between perceptions of racism and racism-related stress, we hypothesize that individuals with high levels of social support from kin, church and African American friends will also report lower levels of racism-related stress. Presumably, individuals

who have high levels of support from these sources have higher levels of self-esteem and collective identities, which lower the stress response to racist events.

Hypothesis 2c. It is hypothesized that both ethnic identity and racial socialization represent a double edged sword for African American youth; On the one hand, elevating perceptions of racism, on the other hand, reducing stress reactivity in response to perceived racism (Sellers et al., 1998; Phinney, 1990). Therefore, it is predicted that the relationship between perceptions of racism and racism related stress will be moderated by higher levels ethnic identity, including centrality and regard, and higher levels of racial socialization, including cultural pride reinforcement and preparation for bias. In other words, youth who have more positive feelings towards their ethnic group membership and are more prepared to face discrimination and prejudice are hypothesized to report lower levels of racism-related stress.

Aim 3: To establish social support, religious participation and spirituality as moderators between racism related stress and negative mental and physical health outcomes for African American students.

Hypothesis 3a. After controlling for ethnic identity and racial socialization, which are known buffers from racism related stress, the model will test to what extent social support seeking from kin, the church and fellow African American students as well as spirituality attenuate the relation between racism related stress and negative outcomes. It is hypothesized that African American students who report higher levels of social support from the three sources identified above will also experience less severe outcomes as a result of racism related stress. These sources of social support are hypothesized to be particularly potent as they contribute to both a sense of belongingness and attachment to other African Americans, and because they contribute to positive feelings about one's racial/ethnic heritage and resiliency in the face of racial adversity.

Hypothesis 3b. In order to better understand the mechanisms underlying social support, we will test whether social support and spirituality contribute to the use of effective coping strategies. It is hypothesized that even after controlling for ethnic identity, racial socialization and overall psychological functioning, both social support and spirituality will be associated with higher levels of active coping. Based on theory, it is thought that social support is effective in two ways: 1. By providing African Americans with the best coping strategies for dealing with racism (that is, indirectly), and 2. By enhancing feelings of belongingness and well-being (or, directly). In other words, students with high levels of support are hypothesized to engage in higher levels of active coping, and in turn the use of these coping responses is hypothesized to be directly related to better mental and physical health outcomes.
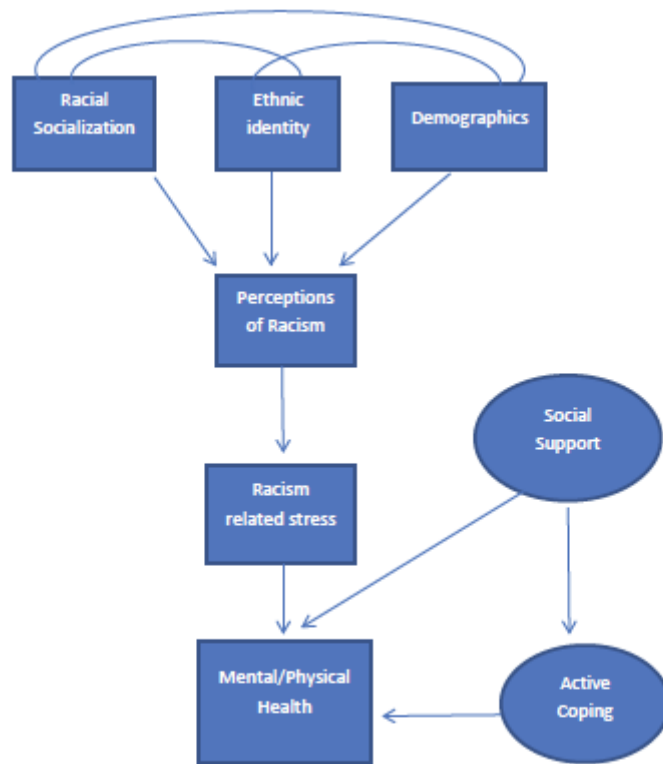
Figure 1.

Overall model of perceptions, stress and coping with systemic racism.

CHAPTER 2

METHOD

Sample and Procedure:

Participants were recruited into a larger study on the adjustment to college life in the Fall

semester of 2011. Data were collected between the months of October and December. All

surveys were conducted online through Temple University's SONA system. Students were able

to log in and out of the system at their convenience to complete the survey. The survey took an

average of 1.5 hours to complete and students were awarded 2 research credits as compensation

for their participation. In accordance with the IRB, all participants were asked to provide an

electronic signature to a consent form at the beginning of the survey. In addition, every item had

the option to "decline to answer", and participants were free to opt out of the survey at their own

will. The current study consisted of 633 undergraduate students at a large public university in the

Northeast section of the United States. In order to participate, students had to be between the

ages of 18 and 24 (average age was 20.75, SD=1.59), and enrolled in an introductory Psychology

course. The overall sample consisted of 268 males (42%) and 358 females (57%). In terms of

race, 99 identified as African American (16%), 373 as White or European American (59%), 64

as Asian (10%), 25 as Hispanic (4%), 19 as biracial (3%) and 3 as other (1%). Given the

emphasis on race in the current study, only a subset of participants who self-identified as

White/European American or Black/African American were included in the current

investigation. The final sample consisted of 472 students with mean age of 20.65 (SD=1.53), of

which 99 identified as Black/African American (28 males; 71 females) and 373 as

White/European American or Caucasian (182 males; 178 females). In terms of gender, 214

males were included in the analyses (45%) and 257 females (55%). Of the final sample, 82 were

freshmen (17%), 131 were sophomores (28%), 118 were juniors (25%) and 76 were seniors

(16%). All of the participants were enrolled as full-time students at the time of the survey.

Demographic information on the final sample is displayed in Table 1.

Table1. Demographic Information by Race

	African American (n=99)	European American (n=373)
Age	20.78 (1.67)	20.56 (.133)
Gender		
Male	28 (28%)	182 (50%)
Female	71 (72%)	178 (49%)
Parents' Income	*6.61 (3.03)*	*8.35 (2.88)***
<$10K	3 (3%)	4 (1%)
$10-20K	5 (5%)	6 (2%)
$20-30K	7 (7%)	12 (3%)
$30-40K	8 (8%)	21 (6%)
$40-50K	13 (13%)	24 (7%)
$50-60K	8 (8%)	13 (4%)
$60-70K	5 (5%)	21 (6%)
$70-80K	8 (8%)	29 (8%)
$80—90K	8 (8%)	23 (6%)
$90-100K	6 (6%)	33 (9%)
>$100K	13 (13%)	114 (32%)
Mother's Education		
Less than HS	0 (0%)	3 (1%)
HS or GED	15 (15%)	91 (25%)*
Some college	29 (30%)	51 (14%)**
Associate degree	9 (9%)	45 (13%)
College degree	20 (20%)	103 (29%)*
Some graduate school	4 (4%)	8 (2%)
Graduate or Professional degree	19 (19%)	52 (15%)*
Father's education		
Less than HS	1 (1%)	5 (1%)
HS or GED	29 (30%)	95 (26%)

Some college	22 (22%)	55 (15%)*

Table 1. (continued)

	African American (n=99)	European American (n=373)
Associate degree	5 (5%)	19 (5%)
College degree	15 (15%)	110 (31%)**
Some graduate school	2 (2%)	6 (2%)
Graduate or Professional degree	10 (10%)	56 (16%)*
Proportion of Neighborhood Same Race	6.20 (3.43)	8.56 (1.83)**
High School Same Race	4.90 (3.22)	8.12 (2.14)**

**Racial differences significant at α=.01; *Racial differences significant at α=.05

Measures (see Appendix B for copy of measures):

Demographics: All participants were asked about their age, gender, self-identified race, relation status, living situation, working status, parents' marital status, parents' occupation and approximate yearly income (1="less than 10K", 11="more than 100K"), and parents' highest level of education (1="less than HS", 7="graduate or professional degree"). To assess the racial composition of participants' neighborhood of origin and high school, participants were asked to recall approximately what proportion of individuals in their neighborhood/school were of the same racial background as they are (1="less than 10%, 11="100%"). In addition, participants were asked what the dominant racial group was in their neighborhood/school.

Ethnic Identity: Degree of identification with and evaluation of one's ethnic group membership was measured using the Multidimensional Inventory of Black Identity (MIBI; Sellers et al., 1998). This measure has been widely used with college students and early adults and has shown good internal consistency across samples. This multidimensional measure consists of salience, centrality, regard and ideology scales. The current study uses three of the subscales: centrality,

private regard and public regard. Centrality is an indicator as to whether race is a central

component of an individual's self-concept. Sample questions include: "Overall, being Black has

very little to do with how I feel about my-self." (reverse coded), and "In general, being Black is

an important part of my self-image." Centrality had good internal reliability in the current sample

(α=.73). The private regard subscale (α=.82 in current sample) is designed to assess the degree to

which an individual assesses his/her racial group membership as positive/negative. Sample

items include: "I am happy that I am Black", and "I feel good about Black people". All items are

coded on a 7 point scale with 1 being "strongly disagree" and 7 being "strong agree". Higher

scores indicate higher levels of centrality and more positive evaluations of one's group

membership. Public regard refers to how positive/negatively individuals perceive others as

viewing their race. Sample items include: "In general, others respect my racial group" (reverse

coded) and "People of my racial group are not respected by other people in a positive manner".

Higher scores on the public regard subscale indicate that others hold negative views towards

one's racial group. This subscale had an internal reliability of α=.74 in the current sample.

Racial Socialization: Racial socialization was assessed using a scale designed by Hughes (2003).

This measure includes three primary dimensions of socialization: cultural pride teaching,

preparation for bias and promotion of mistrust. The current study utilized the cultural pride

subscale (α=.78 in current sample) which is intended to tap into the degree to which caregivers

teach their adolescents about their racial group's legacy and history and instill a sense of pride in

their ethnic group membership. The scale includes items such as, "My parents have told me that

my ethnicity is an important part of self", and "My parents have talked to me about important

people or events in my own racial group's history". All items are measured on a 4-point Likert

scale (1=Strongly disagree, and 4=Strong agree), such that higher scores indicate higher levels of

cultural pride socialization. The current investigation also utilized the preparation for bias subscale which assesses to degree to which caregivers transmit messages preparing youth to deal with racism and discrimination (α=.84).

Stress:

Chronic stress: was assessed using the Perceived Stress Scale (PSS; Cohen & Williams, 1988). The 10-item scale assessed to degree to which respondents feel overwhelmed with their lives and is measured on a 5-point Likert scale (0=never, 4=very often). Sample items include, "in the past month, how often have you felt that things were going your way?" (reverse coded), and "in the last month, how often have you found that you could not cope with all the things that you had to do?". This measure has been found to have good internal validity in past studies with college students. Higher scores on this scale indicate higher levels of stress. The PSS has yielded good internal reliability in the current sample (α=.79).

College stress: Using a subscale of the Undergraduate Stress Questionnaire (USQ; Crandall, Preisler & Aussprung, 1992). Respondents were asked to indicate to what degree they felt stressed about situations directly relating to school and academics. The subscale consists of seventeen items representing school-related activities such as increased workload and transferring schools. Respondents are asked to indicate on a scale of 0 (event did not occur) to 4 (event occurred and was very stressful), whether the stressful event has happened to them in the past week and how stressful the event was. The scale consists of items including: "in the past week, you had a lot of tests", and "in the past week, you had a class presentation". This measure correlates positively with physical symptoms and negatively with mood, and has been found to be a more powerful predictor of academic motivation among college students than other stress measures (Crandall et al., 1992). Reliability coefficient for this scale was α=.85.

Racism:

Perceptions of systemic racism: were quantified using a measure created for the current study. Items were informed by qualitative research conducted by Bonilla-Silva (2006) and Feagin (2006). This measure taps into the degree to which respondents agree or disagree that systemic racism exists in the United States (1="strongly disagree", 4="strongly agree"). An exploratory factor analysis (See Appendix A) revealed two distinct factors for this measure: perceptions of global systemic racism and perceptions of personal systemic racism. Personal systemic racism consisted of 7 items (α=.85) consisting of statements such as "my racial background will be a hindrance to me when I have to look for jobs after college", and "people of your racial background have a lesser likelihood of getting a good job and living in an affluent neighborhood than people of other race". Sample items from the 4-item global racism perception scale (α=.52) include statements like, "the distribution of wealth in the United States is just another symptom (or outcome) of racism", and "racism is no longer a problem in this country, and everybody can succeed if they work hard enough" (reverse coded). For the purposes of the current study, only the personal racism subscale was used in the current investigation.

Systemic racism related stress: was measured using a scale created specifically for the current study. Items were similar in nature to the perceptions of racism scale, and were informed by sociological research (Bonilla-Silva, 2006; Feagin, 2006). This measure taps into the degree to which respondents are bothered or distressed by the impact of systemic racism on their current and future goals. Respondents were asked to indicate to what extent they feel distressed (1="does not bother me at all", 4="it makes me extremely upset") by the degree to which systemic race impacts economic and social outcomes. A copy of the measure is found in Appendix B. To determine the psychometric properties of this measure, an exploratory factor

analysis was conduct to test whether this scale is multi-factorial (See Appendix A for results). In line with the perceptions of systemic racism scale, the results revealed two distinct factors: global systemic racism-stress (4 items), and personal systemic racism-stress (7 items). Sample items from the personal systemic-racism stress scale, include statements such as, it bothers me that… "it is a possibility that I will not be treated fairly by larger institutions (such as the legal , educational and political system) because of my race" and "because of my race, I have to work harder than other people to get the same rewards". The internal reliability for the personal stress scale was $\alpha=.92$. The general global related stress scale included items such as, it bothers me that…"it is considered taboo to talk about racism because it is thought to be an historical problem", and "some racial groups control more of the wealth and power in the United States than others". The internal reliability for the global stress scale was $\alpha=.84$. Only the personal racism stress subscale was used in the current study.

Racism related stress: Assessed using the Index of Race-related Stress (IRRS; Utsey, 1996) – a measure of the stress experienced by African Americans in the following domains: cultural racism, institutional racism, individual racism and collective racism. Only the institutional racism subscale was used in the current study. Respondents were asked to indicate the race-related events they have experienced in their lifetime on a 5-point Likert scale (0=This has never happened to me, 4=event happened I was extremely upset). Sample items include, "you seldom hear or read anything positive about Black people on radio, TV, in newspapers or history books", and "you have observed the police treat White/non-Blacks with more respect and dignity than they do Black." The IRRS is scored by summing the items on each of the subscales (Utsey, Ponterotto, Reynolds & Cancelli, 2000). This measure is designed to tap both into perceptions of racism, as well as racism-related stress only among African American respondents, and yielded a

good internal reliability of α=.89 in the current sample. This measure is included in the current study only to check the construct validity of the new systemic racism scales.

Social support:

Kinship support: Emotional support from kin was measured with a series of 18 questions taken from R. D. Taylor et al. (1993). The measure assessed respondents' perceptions of the level of social support they receive from adult kin. The questions examine the areas of advice and counseling from kin as well as social and emotional support. Sample questions included "When I'm worried about something I look to my relatives for advice" and "We often get together with our relatives for reunions and holidays". The participants indicated their responses using a Likert-type response scale ranging from 4 = strongly agree to 1 = strongly disagree. Higher scores on this scale suggest higher levels of perceived kin support. This measure had strong internal reliability α=.87.

Religious support & spirituality: Measured using a scale developed by Walker and Dixon (2002). The scale consists of 16 items, ten of which measure spiritual beliefs and 6 tap into religious participation. Spirituality was scored on a 5-point Likert scale (1=not at all, 5=completely influences my life) and included items such as, "To what degree does God influence your life?", and "I believe my daily behavior is guided by God". The religious participation subscale was also scored on a 5-point Likert scale (0=never, 4=daily) and consisted of items assessing frequency of religious participation such as, "I attend church regularly at college", and "I read the bible". In the current study, both subscales showed strong internal reliability (α=.85 for both).

Same Race Friendships: Respondents were asked about the number of same-race and different-race friends they have made since arriving on campus, in addition to indicating how many of

their closest on-campus friends are of the same racial background. Respondents were instructed to indicate how many of their friends both at college and in general are of the same racial background as themselves, such that 1="none", 2="1-2", 3="2-3", 3="3-4" and 5="All".

Coping strategies: Measured using the COPE inventory (Carver, Scheier & Weintraub, 1989) which is designed to assess the ways in which people respond to stress. The measure includes five distinct scales of problem-focused coping: active coping, positive reinterpretation and growth, religious coping, restraint coping and seeking of instrumental social support. All five scales were developed using undergraduate students and yielded adequate reliability in previous investigations with African American students (Greer, 2007). Respondents were asked to indicate the degree to which they engage in particular coping strategies when something stresses them out (1=I usually don't this at all; 4=I usually do this a lot). The active coping subscale included statements such as, "I take additional action to get rid of the problem", and "I do what has to be done, one step at a time", and had an internal reliability of α=.77. The positive reinterpretation subscale (α=.83) included items such as "I look for something good in what is happening", and "I try to see it in a different light, to make it seem more positive". Finally, the religious coping subscale (α=.93) included items such as "I seek God's help" and "I try to find comfort in religion".

Outcomes:

Health status: self-reported health status was assessed by asking participants to provide their weight and height in pounds and inches, respectively. In addition, participants were asked how much weight they have gained since entering college. Respondents were also asked to indicate whether they have ever experienced a number of health symptoms in the past month such as difficulty breathing, sleeping problems, frequent headaches, and bowel problems. To assess

changes in health, weight status and weight gain will be used as one dependent variable. The number of conditions which the respondent indicated as having will be added up to create a composite self-reported health score.

Sleeping Disturbances: Were assessed using the Pittsburgh Sleep Quality Index (Buysse, Renolds, Monk, Berman & Kipfer, 1989). The index measures seven dimensions of sleep including: duration of sleep, assessed by asking the respondent to report the time he or she fell asleep and woke up; sleep disturbance, defined as the number of times the individual wakes up in the middle of the night for various reasons; sleep latency, defined as the length of time it takes the individual to fall asleep; day dysfunction due to sleepiness, measured by asking the respondent to what extent sleeplessness interferes with his or her daily activities; overall sleep quality, assessed via a single item; and use of sleep medication. Each dimension is coded into a scale of 0 (better sleep) to 3 (worse sleep), and the dimensions are added to create a composite score ranging from 0 to 21. According to Buysse et al. (1989), a score of 5 or less indicates good sleep quality and scores higher than 5 indicate poor sleep quality. For the purposes of the current investigation, the sleep quality score was treated as a continuous variable. Higher scores indicate worse sleep quality.

Emotional eating: was measured using the Minnesota Eating Behaviors Survey (von Ranson, Klump, Iacono & McGue, 2005) which was designed to assess the tendency of individuals to turn to food for emotional regulation, and the degree of one's compulsive eating behaviors. The measure is scored on a 4-point Likert scale (1=strongly agree, 4=strongly disagree). Sample items include, "I eat when I'm upset about things", and "sometimes I eat a lot of food and feel like I can't stop". Higher scores on this measure indicate *less* compulsive eating behaviors. This measure had high internal reliability α=.86.

Psychological distress: Was assessed using the Kessler Psychological Distress Scale (K10; Kessler et al., 2002). This 10-item questionnaire yields a global measure of distress based on depressive and anxiety symptoms the respondent has experienced in the past month. The scale was designed for the US National Health Interview Survey (NHIS). The scale is scored on a 5 point scale (1=none of the time, 5=All of the time), where scores for all 10 items are summed up such that they range from 10 to 50. According to Andrews and Slade (2001), scores should be interpreted as following: individuals who score below 20 are likely to be psychological healthy; scores between 20 – 24 indicate a mild mental disorder; 25- 29 indicates a possible moderate mental disorder; and scores above 30 suggest the presence of a severe mental disorder. Sample items include, "in the past 30 days, how often did you feel so restless you could not sit still?", and "during the last 30 days, about how often did you feel worthless?". The scale has been shown to have strong internal reliability in large samples, and is being used by a number of annual governmental health surveys in the US and Canada, as well as in the WHO world Mental Health Surveys (Kessler et al., 2002). The internal reliability in the current sample was α=.88.

Anxiety: assessed using the Beck Anxiety Scale (Beck et al., 1988). This 21-item scale assesses the degree to which respondents have experience anxiety-related symptoms in the past 30 days including: feeling hot, numbness or tingling, shakiness, fear of dying, difficulty breathing and faintness. Responses are measured on a scale of 1 through 4, which 1="not at all", and 4="severely". The scale is scored by adding summing the scores across the 21 items, such that scores have a range between 21 (no anxiety at all) to 84 (severe anxiety). This measure had high internal reliability in the current sample (α=.94)

Academic Motivation: the Burnout and Engagement Scale (Schaufeli et al., 2002) is used to measure the degree to which respondents feel emotionally drained and cynical about their

studies. The measure also includes a personal efficacy and dedication subscales designed to assess respondents' level of interest and dedication to their studies. All subscales were scored on a 4-point scale (1=strongly disagree, 4=strongly agree). Scores were averaged across the subscales, such that higher scores on the exhaustion and cynicism scales indicate higher levels of burnout, and high scores on the efficacy and dedication subscale, indicate higher levels of academic motivation. The academic exhaustion subscale (α=.85) included items such as "I feel emotionally drained by my studies", and "I feel burned out from my studies." The academic cynicism subscale (α=.85) included items such as, "I have become less interested in my studies", and "I have become less enthusiastic about my studies." Finally, the academic absorption and dedication subscales consisted of items such as "I find my studies to be full of meaning and purpose", "My studies inspire me", and "time flies when I'm studying". This subscale had an internal reliability of α=.75.

CHAPTER 3

RESULTS

Preliminary analyses: Analyses began by first testing the psychometric properties of the

systemic racism scales that were created specifically for the current study. The first set of

analyses consisted of an exploratory factor analysis (EFA) presented in the measures section.

The results for the perceptions of racism and racism related stress EFA are presented in

Appendix A. The EFA revealed two distinct subscales for each of the measures (global and

personal) for a total of four subscales. Of the four, three had good internal reliability with the

exception of the perceptions of global systemic racism subscale which had a Cronbach's alpha

value of .52. There was a moderately strong correlation between perceptions of personal

systemic racism and personal systemic racism related stress ($r=.43$, $p<.01$). To further examine

whether the new scales measure their intended constructs, we tested their correlations with

existing measures of institutional and cultural racism (Utsey, 1996) as well as other measures of

general stress. The correlations are presented in Table 2. There was a significant correlation

between perceptions of systemic racism and Utsey's cultural racism ($r=.52$, $p<.01$), institutional

racism ($r=.31$, $p<.01$) and individual racism scale ($r=.33$, $p<.01$). Similarly, there were

moderately strong correlations between systemic racism related stress and Utsey's cultural

racism ($r=.52$, $p<.01$), institutional racism ($r=.57$, $p<.01$) and individual racism ($r=.53$, $p<.01$). In

terms of the relation to other measures of stress, perceptions of systemic racism were positively

correlated with general perceived stress ($r=.20$, $p<.05$), and systemic racism related stress was

weakly correlated with perceived stress ($r=.17$, $p<.05$) and psychological distress ($r=.21$, $p<.05$).

Table 2. Correlations between Systemic Racism and General Stress

	1	2	3	4	5	6	7
Perceptions of racism							
Racism related stress	.43**						
Cultural Racism	.52**	.52**					
Institutional Racism	.31**	.57**	.67**				
Individual Racism	.33**	.53**	.71**	.84**			
Perceived Stress	.20*	.17*	.15	.12	.04		
Kessler psychological distress	.05	.21*	.17	.26*	.14	.65**	

*p<.05; **p<.01

Means, standard deviations and racial differences for all key study variables are presented in table 3. All of the variables were normally distributed and met the assumptions of multivariate normality. In terms of racial differences, African Americans reported higher levels of both cultural pride reinforcement (t=7.05, p<.01) and preparation for bias (t=13.01, p<.01). There were also significant racial differences in terms of psychological outcomes including psychological distress (t=-2.56, p<.05), and compulsive eating (t=2.72, p<.01). European Americans had higher levels of psychological distress and compulsive eating than African Americans. Finally, there were also racial differences in certain dimensions of ethnic identity, including centrality (t=8.70, p<.01) and public regard (t=-13.37, p<.01), such that African Americans reported higher mean levels of centrality and lower levels of public regard than

European American respondents. In terms of demographic characteristics, there were significant differences in terms of household income (t=-4.85, p<.01), with European American students reporting significantly higher family incomes than African Americans. The results also indicate that European Americans were more likely to come from racially homogeneous neighborhoods (t=-9.06, p<.01), high schools (t=-11.80, p<.01), and were more likely to have racially homogenous friends in general (t=-1.97, p<.05) and in college (t=-2.08, p<.05) than their African American counterparts. In general, European Americans in our sample were less likely to be around individuals from racial backgrounds other than their own than African Americans.

Analyses were also conducted to examine gender differences in any of the key study variables for the entire sample combined using a series of independent samples t-tests. The results indicate gender differences in terms of cultural pride reinforcement, a component of ethnic socialization (t=-3.00, p<.01), such that females reported higher levels of socialization (M=2.90, SD=.59) than males (M=2.74, SD=.62). Gender differences also existed in anxiety symptoms (t=-2.31, p<.05) and BMI (t=4.18, p<.01). Females reported higher levels of anxiety symptoms (M=13.09, SD=10.54) than males (10.94, SD=9.30) and males had a higher average BMI (M=25.49, SD=5.16) than females (M=23.58, SD=4.22).

Table 3. Means and Standard Deviations for Key Study Variables by Race

Variable	Black/African American (n=99) M(SD)	White/European American (n=373) M(SD)
Ethnic socialization: Cultural pride	3.19 (.56)**	2.73 (.58)
Ethnic socialization: Preparation for bias	3.19 (.53)**	2.27 (.59)
Ethnic socialization: Promotion of mistrust	1.77 (.86)	1.72 (.77)
Self-esteem	3.22 (.61)**	2.93 (.57)

Table 3. (continued)

Variable	Black/African American (n=99) M(SD)	White/European American (n=373) M(SD)
Psychological distress	18.59 (5.86)**	20.24 (5.67)
Beck anxiety inventory	11.13 (10.47)	12.38 (9.91)
Perceived Stress	1.63 (.75)	1.72 (.65)
Undergraduate stress	24.41 (12.33)	24.10 (11.46)
Ethnic identity: centrality	4.45 (.93)**	3.59 (.86)
Ethnic identity: Private regard	5.67 (1.20)	5.48 (1.06)
Ethnic identity: Public regard	3.57 (1.07)**	5.15 (1.03)
Total health score	2.16 (1.15)	2.32 (1.48)
compulsive eating	3.09 (.66)**	2.89 (.65)
Sleep disturbance	5.74 (3.42)	5.66 (2.97)
Friends same race	3.95 (1.10)*	4.20 (.90)
College friends same race	3.62 (1.32)*	3.87 (.95)
Perceptions of racism	2.69 (.53)**	1.94 (.47)
Racism related stress	2.61 (.71)**	2.08 (.70)
Religious Participation	2.19 (.74)**	1.65 (.70)
Spirituality	3.90 (1.16)**	2.64 (.181)
Frequency of Kin Interactions	3.39 (1.61)*	2.99 (1.48)
Kin Emotional Support	2.94 (.49)	2.88 (.45)

**p<.01; *p<.05

Correlations between systemic racism-related stress and key outcome for African American respondents variables are presented in Table 4. There was a significant correlation between racism-related stress and academic dedication (r=.11, p<.05) and anxiety (r=.12, p<.05), such that higher levels of stress were related to higher levels of academic dedication and higher levels of anxiety. There was a negative correlation between academic exhaustion and academic

dedication (r=-.18, p<.01) and compulsive eating (r=-.17, p<.01) and a positive correlation

between academic exhaustion and anxiety (r=.35, p<.01), sleep problems (r=.38, p<.01) and poor

health (r=.21, p<.01). Finally, there was a significant correlation between anxiety and poor

health (r=.43, p<.01) as well as sleep problems (r=.50, p<.01), as well as an inverse relation

between BMI and compulsive eating (r=-.22, p<.01).

Table 4. Correlations between Racism-Related Stress and Outcome Variables for African
American Respondents (n=99)

	1	2	3	4	5	6	7	8
Racism-Related Stress	-							
Academic exhaustion	.07							
Academic Dedication	.11*	-.18**						
Anxiety	.12*	.35**	-.18**					
Health Symptoms	.02	.21**	-.06	.43**				
Compulsive Eating-	-.03	-.17**	.15**	-.31**	-.09			
Sleep Problems	.07	.38**	-.15**	.50**	.29**	-.27**		
BMI	.04,	.01	-.05	-.01	-.05	-.22**	.03	

**p<.01; *p<.05

Primary analyses:

Hypothesis 1a: In order to determine whether African Americans experience higher levels of

systemic racism-related distress than their European American counterparts, a series of

independent samples t-test were conducted to identify differences in mean levels of racism-

related stress and perceptions of racism. The results are presented in Table 3. There was a

significant difference in perceptions of systemic racism (t=14.93, p<.01), such that African

Americans reported higher levels (M=2.69, SD=.53) than European Americans (M=1.94,

SD=.47). Racial differences also existed for systemic racism related stress (t=6.65, p<.01) such

that, African Americans reported higher levels of stress (M=2.61, SD=.71) than European

Americans (M=2.08, SD=.70).

Hypothesis 1b. These analyses were concerned with the question of whether the overall model

presented in Figure 1 was a better fit when tested separately for African Americans and

European Americans. This was accomplished by fitting four separate regression models of

perceptions of racism, followed by four separate regression models for racism-related stress. The

R^2 coefficients for each of the four models were compared to determine whether the model fit

was different under the assumption of racial differences versus no racial differences. The results

for differences in model fit are presented in Table 5 for perceptions of racism and Table 6 for

racism-related stress.

Perceptions of racism: The first regression equation was fitted for the entire sample (n=472;

African American and European American participants combined) and consisted of variables

identified in Figure 1 as potential predictors of perceptions of racism: age, parents' income,

parents' education, gender, ethnic identity (3 dimensions), racial socialization (3 dimensions),

and degree of contact with others of the same race (percentage of same race individuals in one's

neighborhood, high school, number of same race friends and number of same race friends in

college), for a total of 15 parameters. Because the model (M1) does not include race as a

predictor it implicitly assumes equal slopes for African Americans and European American for

each of the predictors identified when regressed on perceptions of racism (i.e. The slope of

ethnic identity regressed on perceptions of racism is the same for African Americans and

European Americans) as well as equal intercepts for Black and White respondents. Essentially this model is testing whether the regression equation provides a good fit when it is tested for all participants regardless of race. Overall, this model had a R^2 of .485. The next model tested whether the R^2 changed when the model assumes that each of the slopes in the multiple regression equation are the same for African American and European American participants (e.g. the beta coefficient for ethnic identity is the same for both groups, the beta coefficient for racial socialization is the same for both groups, etc.), but allows for different intercepts for African American and European American participants. This is achieved by including in the model (M2), the binary variable of race in the regression equation (one additional parameter when compared to M1), and had a R^2 of .503. The third model (M3) tested for the model fit under the assumptions of different slopes for Black and White respondents for each of the independent variables (e.g. the slope for ethnic identity on perceptions would be different based on race), but equal intercepts for both races. This regression equation (M3) included all of the independent variables identified in M1 as well as interaction terms between race and all the predictor variables identified in M1 (in other words, this equation had 15 addition parameters compared to M1: all of the independent variables multiplied by the binary race variable). This model accounted for 53.9% of the variance in perceptions of racism. The fourth model (M4) tested the model fit under the assumption of different slopes and different intercepts depending on one's race : The regression equation in M4 was identical to the one tested in M1, but included race (binary variable), and the interaction terms between all the predictor variables and race, for a total of 16 additional parameters (15 interaction terms and the binary variable of race). M4 accounted for 54.1% of the variability in perceptions of racism. To assess differences between the four models, the following F test was conducted:

$$F = \frac{\left(R^2_{M4} - R^2_{M1}\right)\Big/ \textit{extra \# of parameters}}{\left(1 - R^2_{M4}\right)\Big/ \textit{df error of M4}}$$

There was a significant difference between M2 and M1 ($F(1, 331)=2.66$, $p<.01$) and between M3 and M1 ($F(16, 331)=6.63$, $p<.01$). When the original model (M1) was tested separately by race, it accounted for 46.5% of the variance for African Americans and 31.5% of the variance for European Americans, indicating that the model predicting perceptions of racism provides a better fit when tested separately by race, and it appears to be a significantly better fit for African American respondents, although this cannot be tested directly.

Table 5. Differences in Model Fit for Perceptions of Racism

Model for Perceptions of Racism	# of Predictors	R^2
M1:Same slopes, Same intercepts	15	.485
M2:Same slopes, Different intercept	16	.503
M3:Different slopes, Same intercept	30	.539
M4:Different slopes, Different intercept	31	.541

Racism-Related Stress: The same four models were repeated for the model predicting racism-related stress. Based on the overall model identified in Figure 1, this regression equation consisted of: age, gender, parents' income, parents' education, ethnic identity, racial socialization, degree of contact with others of the same race (percentage of same race individuals in one's neighborhood, high school, number of same race friends and number of same race friends in college), and perceptions of racism, for a total of 16 parameters. The first model, assuming equal intercepts and slopes for both races (M1) accounted for 26.7% of the variance in stress. The second model (M2), assuming same slopes with different intercepts, accounted for 30.8% of the variance. There was a significant difference between M1 and M2 ($F(1, 329)=19.52$,

p<.01). The third model, assuming different slopes with an equal intercept accounted for 36.5% of the variance and was significantly better than M1 ($F_{(16, 329)}=2.47$, p<.01). The fourth model (M4), assuming different slopes and different intercepts accounted for 36.7% of the variance and was also a significantly better fit than M1. Results are presented in Table 6. The original model accounted for 60.1% of the variance in racism-related stress among African American respondents, and 22.1% of the variance among European American respondents. A plot of the changes in R^2 for the four models is presented in Figure 2.

Table 6. Differences in Model Fit for Racism Related Stress

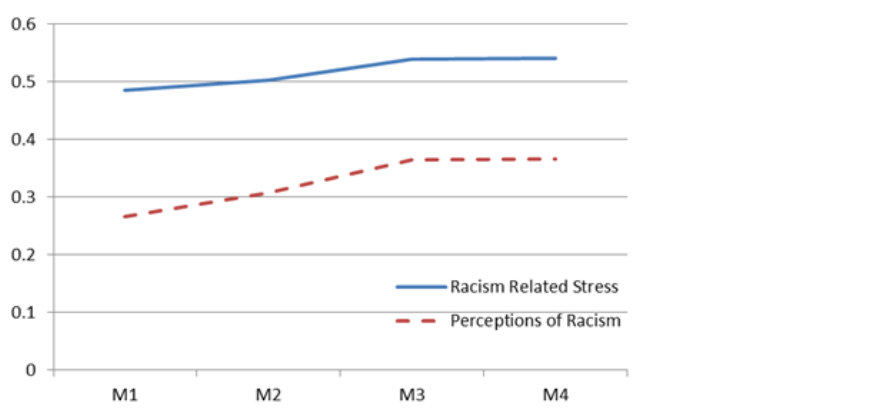| Model for Racism Related Stress	# of parameters	R^2
M1: Same slopes, Same intercepts	16	.267
M2:Sameslopes, Different intercept	17	.308
M3:Different slopes, Same intercept	32	.365
M4: Different slopes, Different intercept	33	.367

Figure 2.
Changes in R^2 Based on Model

Hypothesis 1c. This set of analyses examined the impact of racism-related stress on physical and emotional health, as well as academic adjustment among college students. To determine whether there was a significant main effect of racism-related stress, we tested a series of ordinary least squares regressions for each of the outcome variables. Each of the equations consisted of

demographic variables in the first step, global stress levels in the second step, perceptions of

racism in the third step, and racism-related stress in the final step. Additionally, the regression

equations for African American respondents included perceptions of individual level racism as

control variables (this variable was not available for European American respondents). The

coefficient estimates for racism-related stress on each of the outcome variables are presented in

table 7.

Table 7. The Impact of Racism-Related Stress on Emotional, Physical and Academic
Adjustment.

	African American (n=99)	European American (n=373)
Academic Outcomes:		
Academic exhaustion	.22 (.09)**	-.10 (.04)**
Academic cynicism	.04 (.12)	-.03 (.05)
Academic efficacy	-.09 (.10)	.04 (.04)
Academic dedication	-.03 (.09)	.09 (.04)*
Academic Absorption	-.31 (.13)**	.11 (.05)*
College Adjustment	-.03 (.08)	.07 (.03)*
Health Outcomes:		
Sleep disturbances	.11 (.53)	-.01 (.19)
Health symptoms	-.04 (.31)	-.11 (.13)
Weight gain	-.06 (1.38)	-.10 (.79)
Psychological Outcomes:		
Anxiety	-.18 (1.56)	.85 (.55)
Psychological distress	.19 (.75)	.73 (.33)*

*p<.05; **p<.01

The results indicate that among African Americans, there was a positive relation between racism-

related stress and academic exhaustion (b=.22, p<.01), and a significant negative association

between stress and academic absorption (b=-.31, p<.01). Alternatively, among European

American respondents, higher levels of racism-related stress were related to lower levels of

academic exhaustion (b=-.10, p<.01), and higher levels of academic dedication (b=.09, p<.05),

academic absorption (b=.11, p<.05), and college adjustment (b=.07, p<.05). Finally, among

European American respondents, there was also a positive association between stress and

psychological distress (b=.73, p<.01).

Hypothesis 2a. In order to determine which variables put students at risk for perceptions of

systemic racism we conducted an ordinary least squares regression with perceptions of racism as

the dependent variable. Results for the OLS regression are presented in Table 8.

Table 8. Ordinary Least Squares Regression for Perceptions of Systemic Racism by Race

	African American (n=99) B(SE)	European American (n=373) B(SE)
Demographics:	ΔR^2=.05	ΔR^2=.02
Gender	.07 (.13)	-.08 (.06)
Age	-.02 (.04)	-.01 (.02)
Female caregiver's education	.01 (.04)	.01 (.02)
Male caregiver's education	.03 (.02)	.01 (.02)
Family income	-.03 (.02)	-.01 (.02)
Ethnic identity/socialization	ΔR^2=.38**	ΔR^2=.28**
Cultural pride reinforcement	.07 (.12)	.02 (.06)
Preparation for bias	.26 (.13)*	.11 (.06)
Promotion of mistrust	.04 (.07)	.06 (.04)
Centrality	.09 (.06)	.13 (.04)**
Private regard	.01 (.05)	-.14 (.03)**
Public regard	-.31 (.05)**	-.08 (.03)*
Social relationships	ΔR^2=.04	ΔR^2=.01
Neighborhood same race	.01 (.02)	.01 (.02)
HS same race	.00 (.02)	-.01 (.02)
Close friends same race	.12 (.07)†	-.04 (.04)
College friends same race	-.07 (.06)	.03 (.04)

**p<.01; *p<.05; †p<.10

The first block of the equation consisted of demographic variables including age, gender,

parents' education and parents' income. The second block consisted of ethnic socialization and

ethnic identity, and the final block consisted of contact with individuals of the same racial

background. Among African Americans none of the demographic variables were significant

predictors of perceptions – the total variance explained by this block was R^2=.05 (F=.68, *ns*).

The second block did explain a significant proportion of the variance in perceptions (R^2=.38, p<.01). Specifically, higher levels of preparation for bias were related to higher levels of perceptions (B=.26, p<.01), and higher levels of public regard were related to lower levels of perceptions (B=-.31, p<.01). The final step of the equation did not contribute significantly to the explained variance (R^2=.04, $F_{(5, 84)}$=.86). However, there was a nearly significant relationship between number of close friends of the same race and perceptions of racism (B=.12, p=.07), such that individuals with a higher proportion of same race friends also reported higher levels of racism.   Among European Americans, none of the demographic variables were significant predictors of perceptions of racism. The second block of the equation did contribute significantly to the proportion of explained variance (R^2=.28, p<.01). Higher levels of centrality were linked to more perceptions of racism (B=.13, p<.01), and lower levels of both private regard (B=-.13, p<.01) and public regard (B=-.08, p<.05) were linked to higher levels of perceptions. Overall, the model explained 46.5% of the variability in perceptions of racism for African Americans and 31.5% of the variability among European Americans.

 Hypothesis 2b. The next step of the analyses was used to determine whether social support variables moderate the path between perceptions of racism and racism related stress among African American respondents. Social support was assessed in several domains including support from kin, number of same race friends in general, and number of same race friends in college. In order to test the moderating role of social support, we tested an ordinary least squares regression equation with demographic variables in the first step, ethnic identity and racial socialization in the second step, main effects of the independent variables in the third step, and the three interaction terms in the fourth and final step. Results are presented in Table 9.

Table 9. Ordinary Least Squares Regression for Racism-Related Stress

	African American (n=99)	European American (n=373)
Demographics	ΔR^2= .04	. ΔR^2= .02
Age	.03 (.04)	-.01 (.03)
Gender	.19 (.16)	.13 (.08)
Father's education	.02 (.03)	-.02 (.02)
Mother's education	.02 (.05)	-.01 (.03)
Family income	-.01 (.03)	-.02 (.02)
Ethnic identity/racial socialization	$\Delta R2$= .30**	$\Delta R2$= .10**
Perceived stress	-.24 (.11)**	.04 (.06)
Undergraduate stress	.02 (.01)**	.009 (.004)**
Centrality	.23 (.09)**	-.10 (.05)*
Private regard	-.22 (.07)**	.02 (.06)
Public regard	-.27 (.07)**	.07 (.06)
Cultural pride reinforcement	-.15 (.15)	.11 (.08)
Preparation for bias	.31 (.17)†	.14 (.10)
Promotion of mistrust	.09 (.10)	-.12 (.06)†
Perceptions of racism	.65 (.18)**	.59 (.20)**
Predictors	ΔR^2= .25**	ΔR^2= .09**
Perceptions of racism	.65 (.18)**	.59 (.20)**
Same race friends in general	.21 (.09)*	.28 (.15)
Same race friends in college	-.18 (.07)*	-.17 (.15)
Kin emotional support	.47 (.20)*	-.12 (.19)
Moderators	ΔR^2= .01	ΔR^2= .01
Perceptions * friends	-.13 (.17)	-.17 (.07)*
Perceptions * college friends	.10 (.14)	.06 (.09)
Perceptions * kin support	.03 (.16)	.12 (.10)

**p<.01, *p<.05, †p<.10

 In total, this model explained 60.1% of the variability in racism-related stress among African American respondents. The first step of the equation which included demographic variables did not significantly contribute to the proportion of explained variability in racism-related stress (R^2=.04, *ns*), and none of the demographic variables were significant predictors of stress. The second step of the equation which included general stress, ethnic identity and racial socialization and accounted for the largest proportion of variance in the model (ΔR^2= .30, p<.01). Higher levels of centrality were related to higher levels of stress (B=.23, p<.01), and lower levels of private regard (B=-.22, p<.01) and public regard (B=-.27, p<.01) were also related to higher

levels of stress. In terms of racial socialization, there was a nearly significant positive relation

between preparation for bias and stress (B=.31, p=.07). The third step which included the key

predictor variables also contributed significantly to the explained variance (ΔR^2= .25, p<.01).

Perceptions of racism were positively related to racism-related stress (B=.54, p<.01). There was

a positive relationship between number of same race friends and stress (B=.21, p<.05) and kin

support and stress (B=.47, p<.05), and an inverse relationship between number of same race

college friends and stress (B=-.18, p<.05). Finally, the fourth step of the equation which included

the interaction terms, did not contribute significantly to the explained variability in stress scores

(ΔR^2= .01, *ns*), and none of the social support variables proved to be significant moderators of

the relation between perceptions and stress. Among European American respondents, the model

explained 22.1% of the variability in racism-related stress. Centrality had a negative association

with stress (B=-.10, p<.05), such that higher levels of centrality were associated with lower

levels of stress. There was also a nearly significant relation between promotion of mistrust and

stress (B=-.12, p=.06) such that higher levels of promotion of mistrust were associated with

lower levels of racism-related stress. Finally, there was a significant interaction between

perceptions of racism and same race friends on stress (B=-.17, p<.05).

Hypothesis 2c. To test the hypothesis that ethnic identity and racial socialization moderate the

relation between perceptions of racism and racism-related stress, we tested a regression model

similar to the one presented in Table 9. Specifically, the first block of the equation consisted of

demographic variables, the second block included sources of general stress, the third block

included the key criterion variables consisting of all three dimensions of ethnic identity

(centrality, private regard and public regard), two dimensions of racial socialization (cultural

pride and preparation for bias) and perceptions of racism. The final block of the equation

included the interaction terms between ethnic identity and perceptions of racism, and racial

socialization and perceptions of racism. The results for the main effects of the key predictors

and the interaction terms by race are presented in Table 10.

Table 10. Ethnic Identity and Racial Socialization as Moderators of Perceptions of Racism by Race

	African American (n=99) B(SE)	European American (n=373) B(SE)
Main Effects		
Centrality	.46 (.39)	.03 (.15)
Private Regard	-.10 (.25)	-.11 (.17)
Public Regard	-.47 (.25)*	.16 (.17)
Cultural Pride	-1.09 (.54)*	.20 (.25)
Preparation for Bias	.32 (.64)	.02 (.27)
Perceptions of Racism	1.03 (.47)**	.48 (.10)**
Interactions		
Centrality * Perceptions	-.11 (.15)	-.10 (.08)
Private Regard *Perceptions	.01 (.10)	.08 (.09)
Public Regard * Perceptions	-.19 (.09)*	-.05 (.09)
Cultural Pride * Perceptions	.36 (.19)†	-.02 (.14)
Preparation for Bias * Perceptions	-.08 (.25)	.02 (.15)

**p<.01; *p<.05, †p<.10

The only significant interaction term for African Americans was for public regard (B=-.19, p<.05). This effect is plotted using procedures described by Aiken and West (1991) in

Figure 3; The four points on the plot represent the predicted level of racism-related stress for

participants falling 1 SD below or above the mean for perception of racism (labeled as Low/High

on the x-axis) and 1 SD below or above the mean on public regard (the two lines). In these

analyses, high levels of public regard indicate the individual perceives others as thinking highly
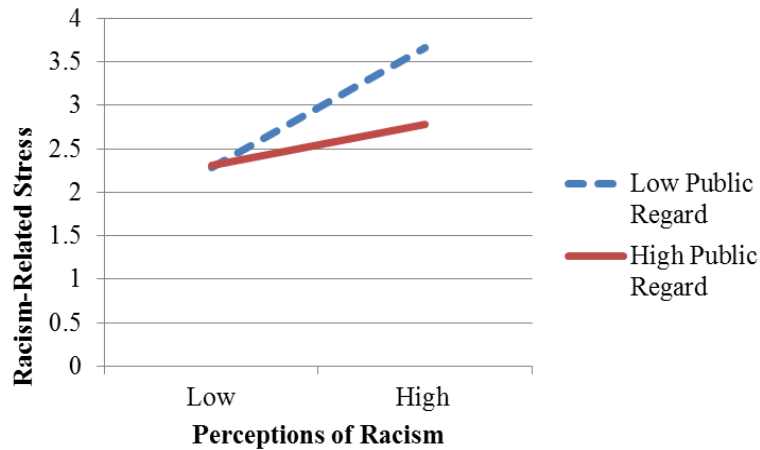
of the individual's racial/ethnic background.

Figure 3.

Interaction between Public Regard and Perceptions of Racism among African Americans

As the figure indicates, there was a significant main effect of public regard (B=-.47, p<.05) such that individuals with high levels of public regard (those who believe others view their race favorably), reported lower levels of racism-related stress. Additionally, there was a significant main effect of perceptions (B=1.03, p<.01) such that higher levels of perceptions were related to higher levels of stress. In terms of levels of stress, the difference between individuals with low/high public regard was most pronounced at high levels of stress, with individuals with low public regard reporting higher levels of stress than those with high levels of public regard.

Hypothesis 3a.

Ethnic Identity and Racial Socialization as Moderators of Racism-Related Stress: To determine whether ethnic identity and racial socialization provide a buffer from the detrimental impact of racism-related stress for African Americans we conducted a set of ordinary least squares regressions for each of the outcome variables. The first block of each equation consisted of demographic variables included age, gender, family income, and parents' highest level of education. The second block included non-race related source of stress including perceived general stress and undergraduate stress. The third block included the primary predictor variables:

racism-related stress, centrality, private regard, cultural pride reinforcement and preparation for

bias. The final block included the four interaction terms. The results for the interaction terms are

presented in Table 11.

Table 11. Ethnic Identity and Racial Socialization as Moderators of Racism-Related Stress among African Americans (n=99)

	Centrality*stress	Private Regard*stress	Cultural Pride*stress	Preparation for Bias*stress
Health Outcomes:				
Compulsive Eating	-.25 (.20)*	-.21 (.18)*	-.24 (.28)	-.15 (.10)
Weight Gain	.40 (2.11)	1.98 (1.14)†	1.62 (3.81)	-.52 (4.89)
Sleep Disturbances	.42 (.87)	.62 (.49)	3.54 (1.52)*	-3.48 (1.87)*
Health Symptoms	.55 (.49)	.14 (.27)	.64 (.83)	-.52 (1.06)
Psychological Outcomes:				
Psychological Distress	-2.18 (1.47)	1.49 (.83)*	.74 (2.56)	.33 (3.14)
Anxiety	.09 (2.47)	3.93 (1.39)**	-2.70 (4.31)	-2.46 (5.30)
Academic Outcomes:				
Academic Exhaustion	.07 (.19)	.17 (.11)	-.05 (.33)	-.50 (.41)
Academic Cynicism	.18 (.21)	.05 (.12)	-.19 (.36)	-.49 (.44)
College Adjustment	.09 (.16)	-.11 (.09)	-.41 (.29)	.33 (.34)

**p<.01;*p<.05; †p<.10

There was a significant interaction between stress and centrality regressed on compulsive eating

(b=-.25, p<.05). This interaction is presented in Figure 4 – low scores indicate more compulsive

eating.
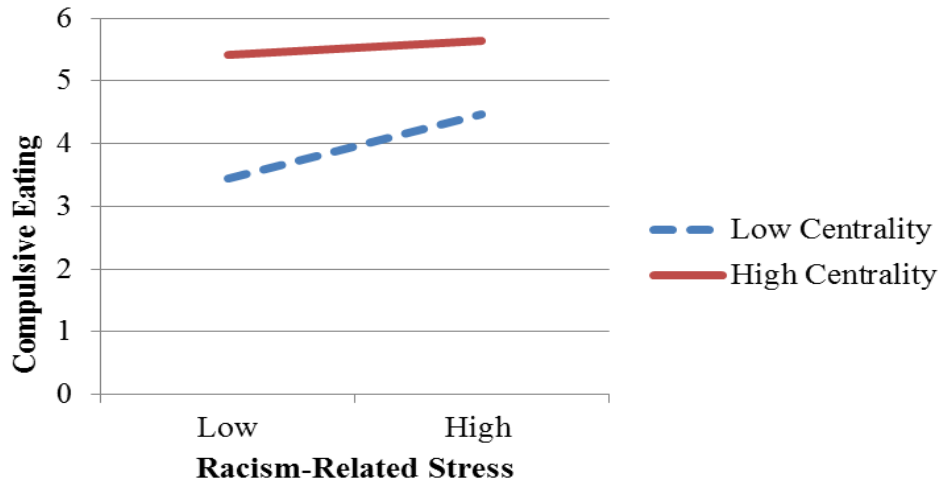
Figure 4.

Centrality as a Moderator of the Impact of Racism-Related Stress on Compulsive Eating among African Americans

As indicated in the figure, there was a significant main effect of centrality on compulsive eating (B=.73, S.E.=.39, p<.05) such that high levels of centrality were related to lower levels of compulsive eating. There was also a significant main effect of racism-related stress on compulsive eating (B=2.99, S.E.=.88, p<.01), such that higher levels of stress were associated with lower levels of compulsive eating. The interaction effect is such that the difference between individuals with low/high centrality in terms of compulsive eating is most evident at low levels of stress; The highest levels of compulsive eating were reported by low-centrality individuals who also reported low levels of stress. There was also a significant interaction of private regard and stress regressed on compulsive eating (b=.21, p<.01). This interaction is plotted in Figure 5.
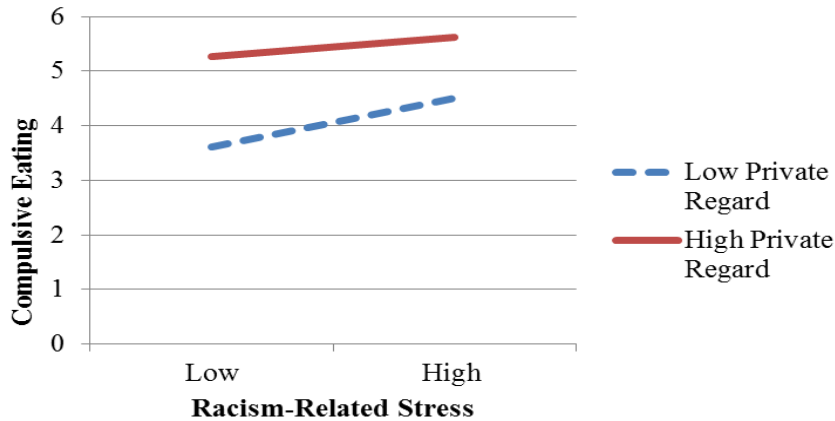
Figure 5.
Private Regard as a Moderator of the Impact of Racism-Related Stress on Compulsive Eating among African Americans

As indicated in the figure (Figure 5), there was a significant main effect of private regard (B=.58, S.E.=.28, p<.05), such that high levels of regard were associated with lower levels of compulsive eating. There was also a significant main effect of racism-related stress (B=2.99, S.E.=.88, p<.01), such that high levels of stress were associated with lower levels of compulsive eating. The interaction effect mirrored the one found for centrality, such that the difference between individuals with low/high private regard was most pronounced at low levels of stress. Individuals with private regard and low levels of stress reported higher levels of compulsive eating than individuals with low private regard and high levels of stress

In terms of other outcomes, both dimensions of racial socialization moderated the relation between stress and sleep disturbances. Specifically, the interaction term with cultural pride reinforcement was significant (b=3.54, p<.01) as was the interaction term with preparation for bias (b=-3.48, p<.05). The interactions between stress and cultural pride regressed on sleep disturbances in plotted in Figure 6.
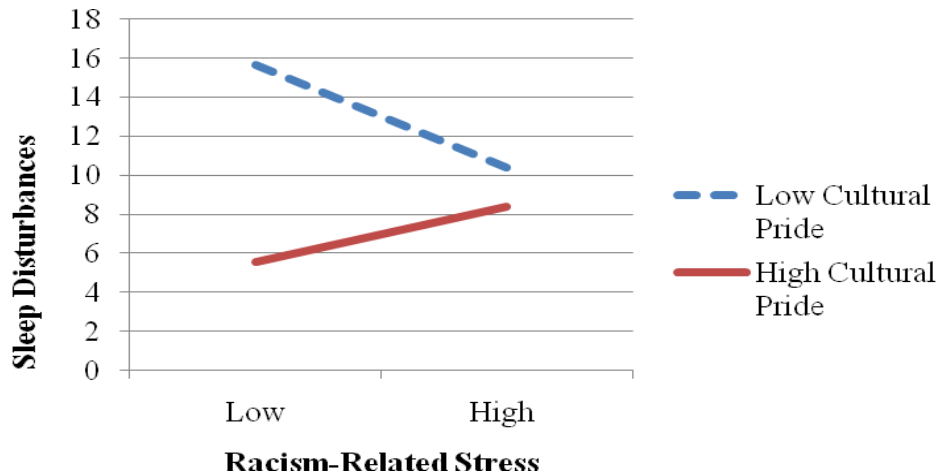
Figure 6.

Cultural Pride as a Moderator of the Impact of Racism-Related Stress on Sleep among African Americans

The plot (Figure 6) indicates that there was no significant main effect of cultural pride on sleep disturbances (B=-6.46, S.E.=3.70, *ns*), nor was there a significant main effect of racism-related stress on sleep disturbances (B=-8.39, S.E.=4.47, p=.06). However, the interaction indicates two trends: 1. Differences in sleep disturbances between individuals with low/high cultural pride are most obvious at low levels of stress, and 2. The highest levels of sleep disturbances were reported by individuals with low levels of cultural pride and low levels of stress, while the lowest levels of sleep disturbances were reported by individuals with high levels of cultural pride and low levels of stress.

The significant interaction between preparation for bias and stress on sleep disturbances is plotted in Figure 7. As indicated in the figure, there was no significant main effect of preparation for bias on sleeping problems (B=1.22, S.E.=.85, *ns*). However, the interaction effect was similar to the one found for cultural pride, such that the difference between individuals with low/high public regard was most pronounced at low levels of stress.

Specifically, it appears that at low levels of stress, individuals with high levels of preparation for bias report significantly higher levels of sleep disturbances than their counterparts with low levels of preparation for bias.
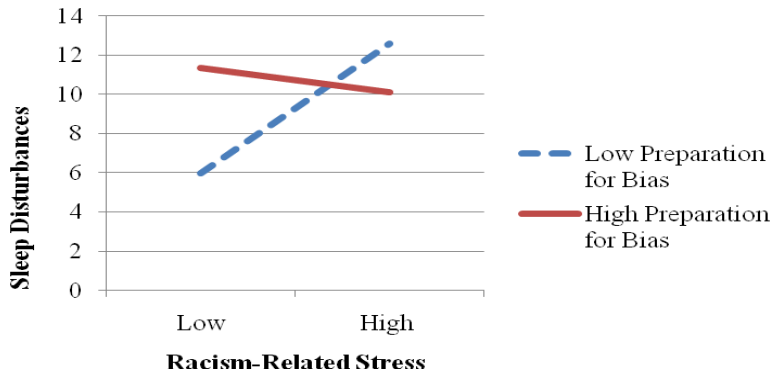

Figure 7.

Preparation for Bias as a Moderator of the Impact of Racism-Related Stress on Sleep among African Americans

Finally, there was also a significant interaction between private regard and stress regressed on weight gain since arriving to college (b=1.98, p<.05), psychological distress (b=1.49, p<.05), anxiety (b=3.92, p<.01). The interaction effect on anxiety is plotted in Figure 8, and the interaction for the other two outcomes (psychological distress and weight gain) was not plotted as these interactions mirror this effect.
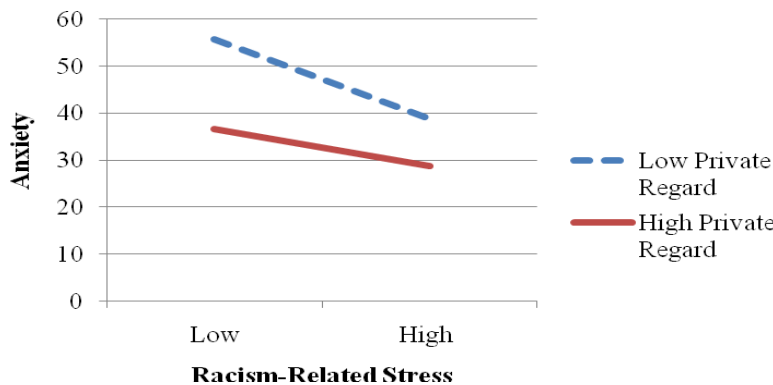
Figure 8.

Private Regard as a Moderator of the Impact of Racism-Related Stress on Anxiety among African Americans

As indicated in the plot, there was a significant main effect of private regard on anxiety (B=-3.10, S.E.=.88, p<.01), such that higher levels of private regard were related to lower levels of anxiety (the same main effect was true for weight gain and psychological distress). There was no significant main effect of racism-related stress on anxiety (B=-.09, SE=1.48, *ns*). The interaction effect was such that the difference in anxiety between those with low/high levels of private regard was larger at low levels of stress and smaller at high levels of stress.

Social Support and Religion as Moderators of Racism-Related Stress: The next set of analyses focused on whether social support from kin, religious participation and spirituality attenuated the impact of racism-related stress on the same set of outcomes. The first set of analyses assessed whether kin support and religiosity are especially important resources among African American students. A series of independent samples t-tests was conducted based on race and African American students are significantly more religious (t=6.80, p<.01) and spiritual (t=8.68, p<.01) than European American students and spend more time interacting with kin (t=2.24, p<.05). However, there were no racial differences in terms of levels of emotional support from kin. The results for the t-tests are presented in Table 3.

In order to determine whether social support and religiosity moderated the relation between stress and physical/mental health outcomes, we conducted ordinary least squares regressions for each of the outcome variables. The results for the four interaction terms are presented in Table 12. All analyses controlled for demographic variables, ethnic identity, racial socialization and general sources of stress.

Table 12. Social Support and Religiosity as Moderators of Racism-Related Stress among African Americans

	Kin support*stress	Spirituality*Stress	Same race college friends*Stress	Religion*Stress
Health:				
Compulsive Eating	-.21 (.27)	.01 (.11)	.06 (.08)	.18 (.19)
Weight Gain	1.07 (3.88)	-2.17 (1.79)	2.16 (.97)*	.38 (2.78)
Sleep Disturbances	2.40 (1.15)*	.14 (.56)	.71 (.38)*	-.69 (.95)
Self-reported Health	-.18 (.38)	.36 (.15)*	-.18 (.16)	.81 (.27)**
Psychological Outcomes:				
Psychological Distress	3.41 (2.20)	-1.50 (.92)	.91 (.91)	-3.55 (1.55)**
Anxiety	10.59 (3.68)**	-2.14 (.15)	1.45 (1.53)	-5.47 (2.60)*
Academic Outcomes:				
Academic Exhaustion	.67 (.27)**	-.17 (.12)	-.08 (.11)	-.60 (.19)**
Academic Cynicism	.62 (.30)**	-.23 (.09)*	-.15 (.13)	-.57 (.21)**
Academic Dedication	-.43 (.23)*	.06 (.10)	.09 (.10)	.39 (.16)**
College Adjustment	-.53 (.21)**	.15 (.10)	.14 (.08)	.51 (.15)**

**p<.01; *p<.05

There was a significant interaction between social support (kinship support and same race college friendships) and stress on sleep disturbances. The interaction term for kinship support is plotted in Figure 9. And the interaction term for same race college friends is plotted in Figure 10.
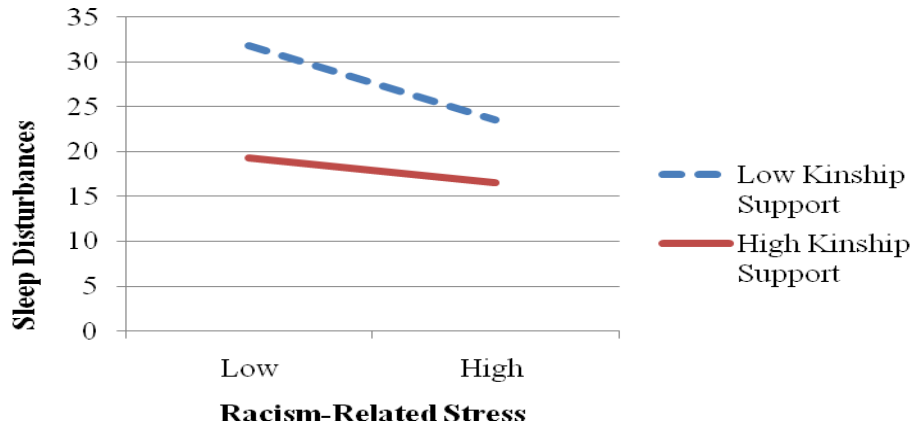
Figure 9.

Kinship Support as a Moderator of the impact of Racism-Related Stress on Sleep Disturbances among African Americans
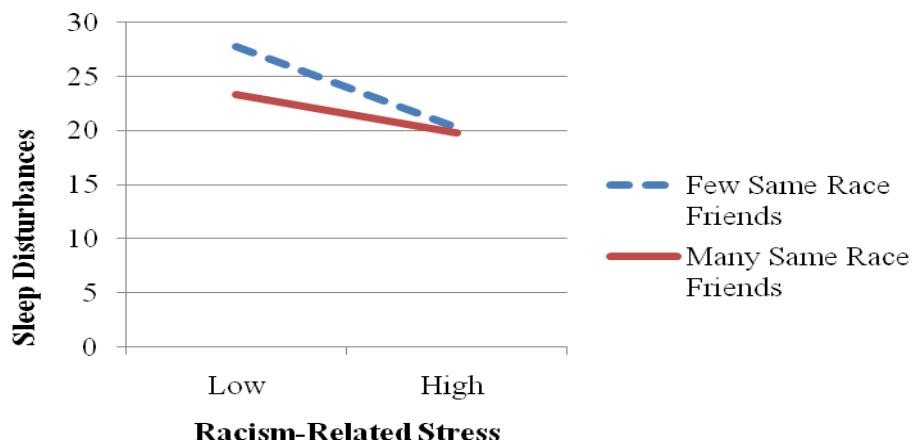

Figure 10.

Social Support as a Moderator of the impact of Racism-Related Stress on Sleep Disturbances among African Americans

There was a significant main effect of kinship support (B=-3.37, SE=2.69, p<.05) and same-race friends (B=-1.65, SE=.89, p<.05) on sleep disturbances, such that higher levels of kin emotional support and more same race friend were related to lower levels of sleep disturbances, however, there as no signifcant main effect of racism-related stress on sleep (B=-4.87, SE=3.65, *ns*). The interaction for kinship support (Figure 9) suggests that the difference in sleep problems between

students with low/high kin emotional support is most pronounced at low levels of stress. Similarly, as Figure 10 suggests, the differences in sleep disturbances between those with many/few same race college friends is largest at low levels of stress.

A somewhat different interaction effect was found for religious participation and spirituality with racism-related stress when regressed on self-reported health. The interaction between religious participation and stress on self-reported health is plotted in Figure 11. As indicated by the figure, there was a significant main effect of religion on health (B=-2.70, SE=.90, p<.01), such that high levels of participation were related to lower health ratings. There was also a significant main effect of stress on self-reported health (B=-1.21, SE=.59, p<.05). Although not seen in the plot, the effect was similar for spirituality which had a significant main effect on health (B=-1.41, SE=.65, p<.05). The interaction indicates that the difference between those with low/high religious participation is most obvious at low levels of stress and is smaller at high levels of stress. This effect was mirrored for spirituality.
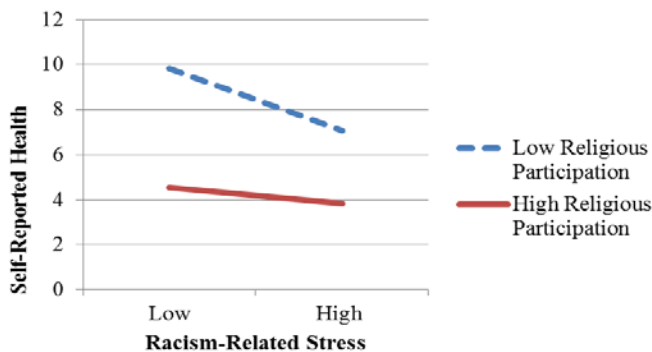

Figure 11.
Religious Participation as a Moderator of the impact of Racism-Related Stress on Health among African Americans

In terms of psychological outcomes, there was a significant interaction between religious participation and stress when regressed on psychological distress (b=-3.55, p<.01) and anxiety (b=-5.47, p<.01). This interaction is plotted in Figure 12. The Y axis represents mental health

functioning, such that higher scores indicate lower levels of anxiety and psychological distress.
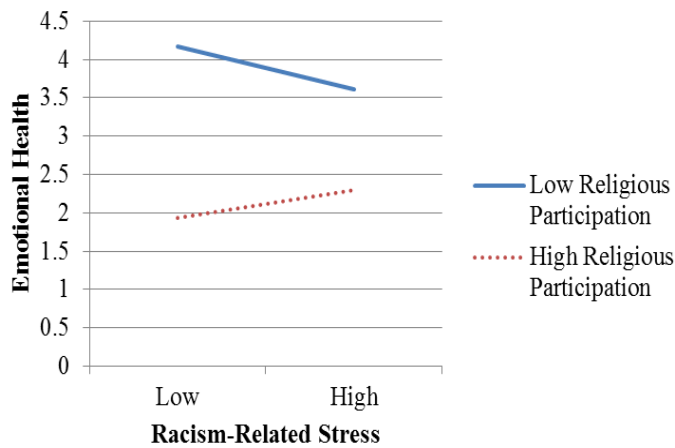

Figure 12.

Religion and Spirituality as Moderators of the Impact of Racism-Related Stress on Emotional Health among African Americans

The plot in Figure 12 indicates that religious participation had a significant main effect on anxiety (B=5.19, SE=2.52, p<.05) and psychological distress (B=3.88, SE=1.45, p<.01), such that religious participation was related to lower levels of psychological functioning. Moreover, the difference between students with low/high religious participation was larger at low levels of stress and smaller at high levels of stress.

Additionally, there was a significant interaction between kinship support and stress on anxiety (b=10.59, p<.01) plotted in Figure 13. As indicated by the figure, there was a significant main effect of kinship support on anxiety (B=-19.78, SE=9.26, p<.05) such that high levels of kin emotional support were related to lower levels of anxiety. There was also a significant main effect of stress on anxiety (B=-27.35, SE=9.97, p<.01), such that higher levels of stress were related to lower levels of anxiety. The interaction is such that at low levels of stress, students with high levels of kinship support report much lower levels of anxiety than those with low levels of kinship support. Although this difference exists at high levels of stress, it appears to be
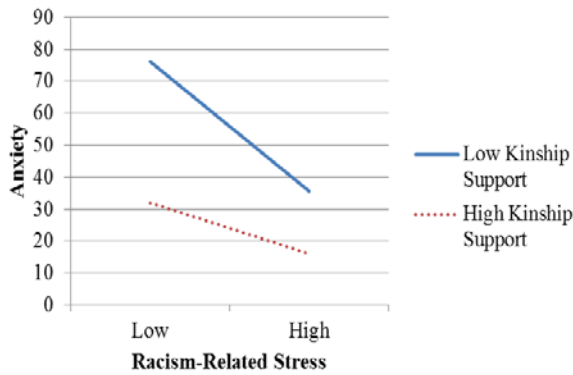
much less pronounced.

Figure 13.

Kinship Support as a Moderator of the Impact of Racism-Related Stress on Anxiety among African Americans

Finally, there was a significant interaction between kinship support and stress on academic exhaustion (b=.62,p<.01), academic cynicism (b=.62, p<.01), academic dedication (b=-.43, p<.05) and college adjustment (b=-.53, p<.01). In all four cases, higher levels of kinship support were linked to higher levels of academic and college adjustment (Figure 14). However, the difference between students with high/low kinship support on academic adjustment was greater at low levels of stress and decreased at higher levels of stress.
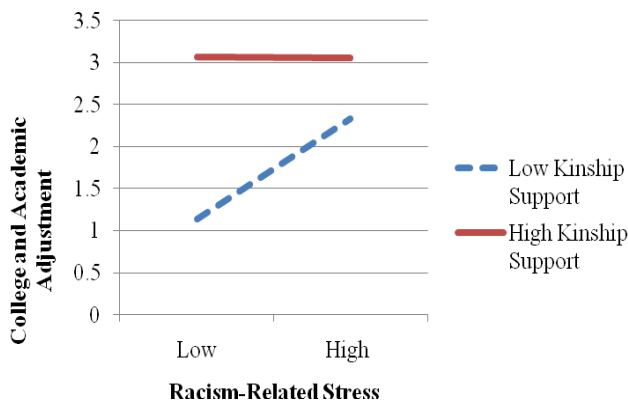

Figure 14.

Kinship Support as a Moderator of the Impact of Racism-Related Stress on Academics among African Americans

Lastly, there was a significant interaction between religious participation and stress on academic exhaustion (b=-.60, p<.01), academic cynicism (b=-.57, p<.01), academic dedication (b=.39, p<.01) and college adjustment (b=.51, p<.01). This effect is plotted in Figure 15. Overall, there was a significant main effect of religious participation on college adjustment (B=-.85, SE=.39, p<.05) such that high levels of religious participation were linked to worse academic adjustment in the current sample. Similarly, there was a significant main effect of stress on adjustment (B=-.85, SE=.31, p<.01), such that higher levels of stress were related to lower levels of college adjustment. However, the difference in college adjustment between students with low/high levels of religious participation is less pronounced at high levels of stress.
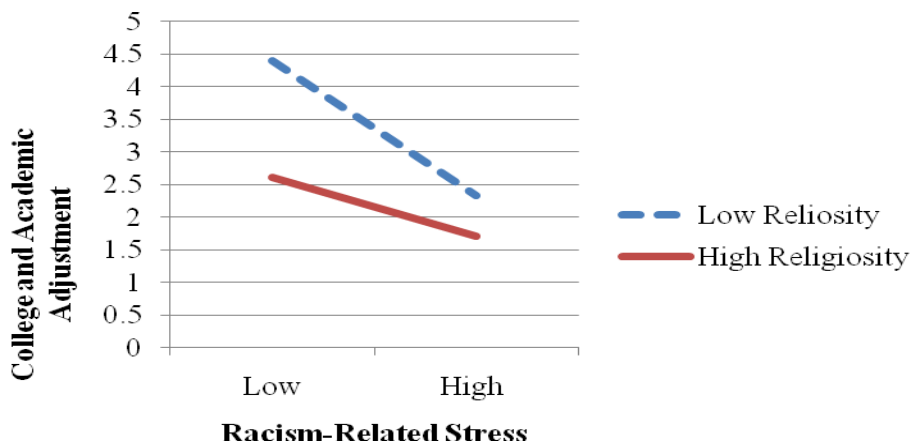

Figure 15.
Religiosity as a Moderator of the Impact of Racism-Related Stress on Academics among African Americans

Hypothesis 3b. The final set of analyses was aimed at examining whether social support and religion are associated with coping strategies. The first set of analyses was used to determine what coping strategies are most often used among both racial groups. Means and standard deviations by racial group are presented in Table 13. African American respondents were

significantly more likely than European Americans to engage in positive reinterpretation and religious/spiritual coping. Repeated measures ANOVAs revealed that among both groups positive reinterpretation was used significantly more often than the other coping strategies, and denial coping was used least often.

Table 13. Racial Differences in Coping Strategies

	African American (n=99)	European American (n=373)
Active coping	2.78 (.69)	2.76 (.63)
Positive Reinterpretation	3.12 (.69)**	2.91 (.70)
Religious/Spiritual Coping	2.82 (1.04)**	1.89 (.94)
Denial	1.57 (.68)	1.56 (.64)

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

To examine whether social support and religiosity were positively related to coping strategies we tested an ordinary least squares regression to model whether the three independent variables contribute to active coping, positive reinterpretation coping and religious coping. The first step of the equation included demographic variables such as gender, age, family income and parents' education. The second step included ethnic identity and racial socialization, as these were suspected to contribute to coping, the third step consisted of psychological adjustment variables including psychological distress, self-esteem and anxiety, and the final step included the three primary independent variables: religious participation, spirituality and perceived emotional support from kin. The results for the regressions are presented in Table 14.

Table 14. Predictors of Coping Strategies among African American Students (n=99)

	Active Coping	Positive Reinterpretation	Religious Coping
Step 1: demographics	$\Delta R^2=.07$	$\Delta R^2=.03$	$\Delta R^2=.13$†
Age	-.09 (.05)	.02 (.04)	.04 (.07)

Table 14. (continued)

	Active Coping	Positive Reinterpretation	Religious Coping
Gender	-.08 (.17)	.21 (.14)	.55 (.27)
Income	-.02 (.05)	.02 (.04)	-.08 (.04)*
Father's Education	.04 (.03)	.03 (.02)	-.03 (.05)
Mother's Education	.01 (.03)	-.02 (.02)	.17 (.07)*
step 2: racial identity	**ΔR^2=.26****	**ΔR^2=.39****	**ΔR^2=.20****
Centrality	-.11 (.10)	-.05 (.08)	.16 (.15)
Private Regard	.26 (.08)**	.27 (.07)**	.27 (.11)*
Public Regard	-.01 (.08)	.12 (.06)	.04 (.11)
Cultural Pride Reinforcement	-.02 (.15)	.16 (.12)	.44 (.24)†
Preparation for Bias	.07 (.11)	-.05 (.14)	.09 (.27)
Promotion of Mistrust	.30 (.11)**	-.03 (.08)	.30 (.16)†
step 3: Psychological functioning	**ΔR^2=.01**	**ΔR^2=.05**	**ΔR^2=.01**
Self-esteem	.12 (.16)	.34 (.14)**	-.12 (.26)
Psychological Distress	-.03 (.02)	.01 (.02)	-.01 (.03)
Anxiety	.01 (.01)	-.01 (.01)	.01 (.02)
Step 4:	**ΔR^2=.04***	**ΔR^2=.06***	**ΔR^2=.09****
Religious participation	**.21 (.10)***	**.08 (.09)**	**.96 (.12)****
Spirituality	**.14 (.07)***	**.04 (.06)**	**.73 (.06)****
Kinship Support	**-.13 (.22), *ns***	**-.39 (.18)***	**.93 (.34)****

**p<.01; *p<.05; †p<.10

The first block of the equation did not contribute significantly to any of the coping

mechanisms, with one exception; Family income was significantly related to religious coping

(B=-.08, p<.05), such that higher income was related to lesser usage of religious coping. There

was a significant main effect of private regard on all three coping responses. Specifically, higher

levels of regard were associated with higher levels of active coping (B=.26, p<.01), positive

reinterpretation (B=.27, p<.01) and religious coping (B=.27, p<.05). In terms of the three key

independent variables, higher levels of religious participation were positively related to active

coping (B=.21, p<.05) and religious coping (B=.96, p<.01). Spirituality was similarly positive

related to active coping (B=.14, p<.05) and religious coping (B=.73, p<.01). Finally, kinship

support was negatively associated with positive reinterpretation (B=-.39, p<.05) and positive

associated with religious coping (B=.93, p<.01).

CHAPTER 4

DISCUSSION

The recent Occupy movement throughout the United States has brought to light the growing gap between the haves and the have-nots. Unfortunately, this widening is also true for the gap between White and Black Americans (National Urban League, 2011). African Americans are significantly less likely to graduate from college than their European American counterparts, get a job, and own a home (National Urban League, 2011; Oliver & Shapiro, 1995). In the most recent economic downturn, rates of unemployment are twice as high among ethnic minorities (Blacks and Hispanics) than among White Americans, and the lack of job opportunities means having a college degree is more important than ever. A multitude of research has examined potential explanation for low graduation rates among African American students, mostly focusing on financial explanations (Braddock & Dawkins, 1981; Allen et al., 1992; Pascarellea et al., 2004). Fewer have contended that African Americans have to cope with additional burdens on most campuses, in the form of racial discrimination from peers and faculty and a lack of social support (Greer, 2003; Green & Chwalisz, 2007). To date, none have examined whether appraisals of how one's race might influence his/her future, or systemic racism, impacts the mental and physical health of minority college students as well as their academic motivation. The current study seeks to fill in the gaps in knowledge by focusing on three primary aims: 1. To establish systemic racism related stress as a unique source of stress to African American college students, 2. To identify psychological and demographic characteristics that put certain individuals more at risk for experiencing stress, and 3. To determine whether social support, religion and spirituality provide a buffer from the impact of racism-related stress.

The current study predicted that African Americans will be more likely than their

European American counterparts to perceive institutional barriers to success because of their race, and to experience distress as a result. Second, we hypothesized that high levels of distress will be related to lower levels of mental and physical health, as well as lower levels of academic engagement. Finally, we believed that minority students with high levels of support from their extended family as well as high levels of religious participation and spirituality will be better equipped to deal with racism-related distress. The current study contributes to existing literature by directly comparing White and Black students attending the same four-year university. Furthermore, all the analyses in the current investigation controlled for global levels of stress as well as stress related to personal racial discrimination, thereby demonstrating that systemic racism-related stress represents a unique source of stress for African American adolescents and young adults.

Overall, the results provide partial support for the hypotheses put forward. African American students reported significantly more systemic racism than European Americans, and significantly higher levels of racism-related stress. This result is consistent with previous sociological and psychological research indicating that racism is much more likely to impact the lives of ethnic minorities (Feagin 2006; Pager, 2007; Fisher et al., 2000). In the current sample, not only did African Americans have higher mean levels of both perceptions and racism-related stress, but only 2% (n=2) of African Americans reported zero levels of racism-related stress and none of the African American respondents reported absolutely no perceptions of racism. Alternatively, among European Americans, 7% (n=26) reported no racism-related stress, and 6% reported zero perceptions of racism (n=21). Interestingly, these results also suggest that the majority of students in the current sample have perceived systemic racism against their racial group at some point in their life, and have experienced consequent distress. One explanation for

the high levels of perceived racism in the current sample may be the marco-level nature of the measure used. Previous studies on racism have relied on reports of personal experiences with racial discrimination in the form of name calling or exclusion from specific settings (see Utsey, 1996; Carter, 2007; Harrell, 2000), which are becoming increasingly less commonplace in American society (Bonilla-Silva,2006; Gaertner & Dovidio, 1986; Schuman, Steeh, Bobo & Krysan, 1997). On the other hand, the measure of racism used in the current investigation focused on institutional and historical symptoms of racism and emphasized aspects of inequality such as housing segregation and income inequality that could potentially be perceived as affecting dominant group members as well. Nonetheless, the results clearly indicate that both African American and European American students accurately understand that systemic racism more significantly affects the lives of ethnic minorities in the United States. It is also noteworthy to add that the demographic characteristics of the current sample provide evidence for systemic racism given that European American students were significantly more likely to come from homes with incomes greater than $100K per year than African American students, and European American parents were significantly more likely to hold advanced degrees than the parents of African American students.

Perceptions of Racism. Based on the phenomenological model of stress (Lazarus & Folkman, 1984), we predicted that certain demographic and psychological variables would put students at greater risk for perceiving systemic racism and experiencing racism related stress. Our results suggest that individuals are in fact more attuned to events that affect a central component of their self-identity. Specifically, African American students who reported more messages of preparation for bias from their caregivers perceived higher levels of racism. In addition, public regard, or the degree to which individuals believe others devalue their racial or ethnic

background, was also related to perceptions of racism. These findings are consistent with prior research indicating that adolescents who believe others devalue their group perceive higher levels of personal discrimination (Chavous et al., 2008; Sellers et al., 2003; Rivas-Drake et al., 2009).   It appears that individuals who expect others to treat their racial group badly are more likely to perceive higher levels of unfair treatment and racism. Very simply, the relation between public regard, preparation for bias and perceptions of racism, may be the result of a cognitive heuristic known as confirmation bias. In general, individuals are more attuned to and have better memory for events that are consistent with their expectations (Lee & Anderson, 1982). Of course, given the cross sectional nature of the current dataset, it is important to consider that the relation between public regard and perceptions of racism may work in the opposite direction. Specifically, it is plausible that individuals who have in actuality experienced the most racism in their lifetime have accurately come to expect more racism and use this knowledge as a sort of compensatory or protective strategy. In other words, individuals who are expecting a high degree of racism are less shocked when racist events actually occur.

Surprisingly, other components of ethnic identity including private regard and centrality were not related to perceptions of racism in the current sample. This finding is somewhat inconsistent with the current model which posits that individuals who are strongly identified with their racial group will also be more aware of race-related events (Lazarus & Folkman, 1984). A couple of explanations may account for these null results. First, levels of both centrality and private regard were relatively high among the current sample; Most of our respondents felt highly connected to their racial group and more importantly, felt positively about their racial heritage. Therefore, the lack of variance may have made it difficult to find a significant relation. Much of the past literature linking centrality to perceptions of racism has been conducted on

early to mid-adolescents (Wong et al., 2003; Sellers et al., 2003; Sellers et al. 2006; Marshall, 1995) when ethnic identity is not fully developed (Phinney, 1992; Cross, 1991). On the other hand, most adults and emerging adults have a much clearer sense of what their racial background means to them, and after many trials and tribulations, most learn to focus on the positive aspects of their racial background (Cross, 1991; Phinney, 1992; Rivas-Drake, Hughes & Way, 2009).

Along the same lines, we expected that youth coming from homogenous settings would be especially aware of systemic racism as they transition into a more heterogeneous surrounding. Research on interpersonal racism suggests that perceptions of racism decline in homogenous settings and are maximal in racially diverse ones (Welch et al., 2001). However, this finding did not hold true for perceptions of systemic racism. Possibly our results are due to the ubiquitous nature of systemic racism. One does not have to look far to find evidence of inequality, so ethnic identity or one's neighborhood background may make no difference in terms of perceptions. Racism is an ongoing problem in the United States, and there have been a number of racially charged events in the past decade that have received ample media attention and are difficult to ignore (e.g. the murder of Trayvon Martin, the arrest of Professor Henry Lewis Gates Jr., etc.). More unique to the current sample, the university where the data were collected is located in the heart of a poor, predominantly African American urban neighborhood, which sends an unmistakable message about racial segregation in most metropolitan areas. Furthermore, according to systemic racism theory, racial inequality affects all members of society alike, regardless of their social class or living environment (Mills, 2000; Feagin,2006). In other words, it is part of the social, economic and political reality in the United States which is impossible to ignore. Indeed, this proposition accounts for the exceedingly high levels of perceptions of racism in the current sample. Importantly, these findings speak especially strongly for the need

to study systemic racism in addition to interpersonal discrimination.

Racism Related Stress: The phenomenological model of stress (Lazarus & Folkman, 1984) proposes that the link between perceptions and negative physical and emotional outcomes is mediated by the perceived availability of coping strategies to deal with a potential threat. Thus, we hypothesized that social support and ethnic identity may reduce racism-related stress, because these are important sources of emotional support (Harrell, 2000; Sellers et al., 1998; Phinney, 1990) as well as advice on how to deal with stress (Stevenson, 1994). The only significant moderator we found was for public regard, such that low levels of public regard exacerbated the relation between perceptions and stress. Previous research on public regard has yielded mixed results in terms of its protective qualities for ethnic minorities (Crocker et al., 1994; Rivas-Drake, 2012; Drivas-Drake et al., 2009). While some have suggested that low levels of public regard help prepare adolescents to effectively cope with racial discrimination by preparing them to face bias (Sellers et al., 2006), others have found that youth who believe others view minorities in a negative light are more prone to maladaptive social and emotional outcomes (Rivas-Drake, 2012; Settles, Navarrete, Pagano, Abdou & Sidanius, 2010), still others have found no relation between public regard and well-being among minority adolescents (Crocker et al., 1994). To date, few studies have examined perceptions of racism and racism-related stress as separate constructs, and the current findings indicate that once an individual perceives racism, having low levels of public regard increases susceptibility to stress. Recent evidence suggests that in predominantly White university, ethnic minority students who have low levels of public regard, report a weaker sense of community and in turn experience higher levels of depressive symptoms (Rivas-Drake, 2012). It is plausible that in our sample students who perceived especially high levels of racism and had lower levels of public regard (and consequently a lower

sense of community) were more prone to experiencing stress because of their generally poorer adjustment.

Social Support as a Moderator: In terms of our social support variables, we expected that kinship support as well as friendships with same race individuals would weaken the link between perceptions and racism-related stress. The rationale behind this hypothesis was based on the notion that same race individuals can provide emotional support for individuals perceiving stress, because they have experienced it as well, and that these individuals can also provide advice specific to coping with racism. Interestingly, none of these interactions was significant, but we did find that high levels of emotional support from kin as well as having many same race friends in general were related to higher levels of stress, while having many same race friends on campus was related to lower levels of stress. These results are especially surprising in light of our finding that African American students spend significantly more time with their kin than their European American counterparts. One possible interpretation of these results is that extended family and high school friends have a hard time relating to the kinds of stressors experienced by minorities at predominantly White universities. In the current sample, African American caregivers were significantly more likely to have dropped out of college and less likely to have a college degree than European American parents, suggesting that they have less experience in the college environment. Additionally, some research suggests that some African American students are alienated by their families and childhood friends for choosing to go to a predominantly White university, because this choice is perceived as a desire to abandon one's culture and ties to the African American community (Thompson et al., 2010). This explanation may also help explain why having more same race friends on campus reduces racism-related stress, as these friends have a better understanding of how race relations play out in

predominantly White settings (Ethier & Deaux, 1994). Furthermore, it is possible that having many same race friends on campus serves as a reminder to African American students that many racial minorities do attend college and are in fact successful, and this in turn reduces the degree to which they see racism as hindering their future opportunities.

Importantly, these results highlight the potentially dynamic nature of social relationships throughout the lifespan. While our results as well as others' indisputably show that support from kin is linked to positive outcomes (Thoits, 1995; Johnson & Jennison, 1994; Turner et al., 2008), these relationships are increasingly complex during the college years. Late adolescence/young adulthood, particularly for college students, is a time for exploration and questioning of one's values and beliefs (Arnett, 2004; Barry, Nelson, Davarya & Urry, 2010). While it is important and critical for youth to maintain links to their home communities, they are also trying to establish their own unique identity in a new setting. This means that students who remain too closely tied to their families and old friends may actually be hindering their adjustment to college life. Research does show that students, particularly ethnic minorities, who are more engaged in on campus activities and have more on campus friends, are more likely to graduate (Pascarella & Terenzini, 2005; Eaton & Bean, 1995; Astin, 1993; Fischer, 2007). Again, it is important to interpret these results in light of their cross-sectional nature. That is, it is possible that students who experience the greatest level of racism-related stress are more likely to go to their kin and high-school friends for support, because these are the people who have known them the longest and make them feel most comfortable. Alternatively, when levels of stress are low, students are more likely to focus on their proximal environment, and spend more time with their more immediately available college friends. It is reasonable to expect that when students are not adjusting well, they tend to go back to their families for support rather than rely on individuals

they have not known as long.

Social Support, Religion and Coping with Racism-Related Stress. We hypothesized based on existing theory and findings that social support and religion, specifically religious participation and spirituality, would moderate the impact of racism related stress on mental and physical health outcomes (Garcia Coll et al., 1996; Ceballo & McLoyd, 2002; Short-Gooden, 2004; Taylor et al., 2004). Research suggests that social support provides an important buffer through both emotional and instrumental support (Johnson & Jennison, 2002). Friends and family are willing to listen to individuals in times of need and offer consolation or optimistic words as well as practical advice on how to cope with stressful events, including race-related events (Stevenson, 1994).

Previous studies on adults show that support from kin is an especially important source of social support for African Americans (Lewis-Harrison & Molock, 2000; R.S. Taylor, 1986; Budescu et al., 2011). African Americans are more likely to count their extended family as their closest friends and tend to live in closer proximity to extended family than European Americans (Feagin, 1968; McAdoo, 1978; R.S. Taylor, 1986). However, few studies to date have investigated relationships with extended family during the college years. Our results indicate an unexpected effect of kin emotional support on college students' outcomes. We found that at low levels of stress, students who reported high levels of social support also reported the highest levels of academic, emotional and physical health adjustment. In other words, at low levels of stress students with high levels of emotional support from kin reported significantly better outcomes than students with low levels of kinship support. However, at high levels of stress, the difference between students with high/low kinship support is negligible. Due to the cross-sectional nature of the current dataset, it is impossible to draw conclusions about the

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directionality of the results. One possibility is that students who are experiencing the greatest levels of race-related stress and the lowest levels of adjustment are actually more likely to turn to their kin for emotional support. It is plausible that when things get difficult for college students, they are more likely to turn to their family who has known them the longest and can provide the best source of support. Alternatively, this finding suggests that although relationships with extended family are generally a positive resource (Taylor, 2010), the relationship is more nuanced. College students are at a stage in their life in which they are trying to discover their own identity and figure out their own strategies for coping with stress (Arnett, 2004; Barry et al., 2010). Therefore, it is possible that students who are experiencing a great deal with race-related stress while also heavily relying on their extended for emotional support are simply not coping with their emotions in the best possible way. Figuring out coping strategies on one's own may be better than relying on family for support, because it should theoretically contribute to feelings of efficacy and self-reliance. Similarly, African American college students attending a predominantly White university are undoubtedly facing unique challenges that may be poorly understood by their kin, or anyone else who is not present in that particular context. Thus, extended family may offer advice that is ineffective or even detrimental to minority students who are experiencing high levels of race-related stress (Thompson et al., 2010).

In the current sample, the effect of spirituality and religious participation was opposite to the one expected, such that students who reported high levels of religion and spirituality also reported lower levels of psychological adjustment, academic adjustment and self-reported health than students with low levels of religion. In other words, there was a significant main effect of religion and spirituality, such that students reporting high levels of religion and spirituality also reported lower adjustment than those reporting low levels of religion and spirituality.

Additionally, when we tested the roles of spirituality and religious participation as moderators of racism-related stress, the effect was opposite to the one found for kin support, such that religion and spirituality appeared to be more beneficial at higher levels of stress. Past literature indicates that religious activity and spirituality are important resources for African American college students; related to better overall academic and psychological adjustment (Knox, Langehough & Walters, 1998; Zullig et al., 2006) as well as a sense of mastery and control over the future (Walker & Dixon, 2002; Mattis & Jagers, 2001). Furthermore, participation in organized religion increases one's social networks and leads to feelings of belongingness (Taylor et al., 2004; Constantine et al., 2006) while also providing instrumental support in the form of financial assistance and advice (Boyd-Franklin, 2010). From a cross-sectional perspective, it is plausible that students who experienced low levels of adjustment simply turned to religion more so than students who are generally doing well in college. Religion and spirituality have historically been important resources for African American adults (Utsey, Adams & Bolden, 2000; Constantine et al., 2006), providing individuals with a place to turn during difficult times. Indeed, in the current sample, African American students reported significantly higher levels of religious participation and spirituality than their European American counterparts, as well as significantly higher levels of religious coping, thus supporting the hypothesis that religion has a unique role among African Americans.

Our results also revealed that for individuals with high levels of religious participation and spirituality, the impact of racism-related stress was lessened at high levels of stress, while the opposite was true for individuals with low levels of religiosity. In other words, at high levels of stress, it appears that religion and spirituality may actually aid coping with stress inducing events. Because religion and spirituality are such important components of African American

culture (Boyd-Franklin, 2003), it is possible that students with low levels of religiosity and spirituality are simply ill-equipped to properly cope with race-related stress, or any other stress for that matter. Supporting this proposition is our finding that religion and spirituality were highly correlated with both active coping and religious coping in our sample, both of which are related to a host of positive outcomes. Thus, although secularity may appear to be helpful at low levels of stress, it is also detrimental at high levels of stress. These unexpected results highlight the changing role of religion and spirituality during the transition into adulthood. Theory and research suggest that due to cognitive changes that take place towards the end of adolescence, young adults are able to think about complex subjects such as religion and spirituality in a more abstract way than early adolescents (Barry et al., 2010). For many college students, this new exploration of religion is also associated with ongoing identity development, as young adults figure out ways to incorporate their religious values into their self-identity (Nelson & Barry, 2005; Lefkowitz, 2005).

Finally, it is also important to consider that individuals who are highly religious and spiritual and report low levels of racism-related stress are using denial as a coping strategy to deal with racism. In general, the denial of racism has been linked to lower levels of adjustment, and research on coping with discrimination indicates that African Americans who deny the existence of racism or fail to perceive racist stimuli are more likely to be hypertensive (Krieger & Sidney, 1996). In other words, in the current sample, students who reported high levels of religion/spirituality and low levels of adjustment may actually be suppressing the degree to which racism is a problem and in turn this suppression of emotions leads to more somatic symptoms and lower levels of self-reported health.

Stress and Health. Finally, it should be noted that our study failed to find a significant relation

between racism-related stress and any physical or emotional health outcomes. The only direct effect we found after controlling for general stress and personal discrimination was on academic exhaustion and absorption. It is important to consider that systemic-racism related stress is very different from the kind of stress one experiences from instances of overt personal discrimination and prejudice. Individual discrimination, which has been traditionally studied in psychological investigations, is not only an attack based on one's race but also a personal attack (Utsey, 1996; Harrell, 2000; Fisher et al., 2000). Therefore, it is especially damaging to be denied service because of one's race or experience name calling and insults. These kind of events can have a severe and immediate impact on one's well-being (Harrell, 2000) and lead to elevated stress responses both physically and emotionally (Clark et al., 1999). Systemic racism on the other hand is a social, cultural and political force that is all encompassing and defines the African American (and European American) experience in the United States (Mills, 2000). It is a force that must be contended with because it not only affects one's opportunities, but it is also part of the cultural fabric in America and impossible to escape. Thus, racism related stress may not be the kind of stress that makes one's "blood boil" thereby contributing to long-term physical and mental health damage. It is the kind of stress, however, that has the potential to impact people's motivation and optimism about the future, hence our significant findings for academic motivation and exhaustion. Although research in this area is scarce, research in the field of organizational behavior, particularly in work settings marred by inequality, suggests that this type of hierarchical structure is related to poorer outcomes for people at the bottom of the ladder (Bloom, 1999; Pfeffer & Lahgton, 1988; Pfeffer & Langton, 1993). Some have suggested that a hierarchical power structure within organizations characterized by systemic inequality leads to depression, learned helplessness and anger (Berger & Rosenhotz, 1980; Cohen & Zhou, 1991).

Perhaps the most puzzling of our findings were our results indicating a positive relation between racism-related stress and academic adjustment for European American respondents. We found that European American who reported high levels of stress, also reported higher levels of academic dedication and lower levels of academic exhaustion – essentially results opposite of those obtained for African Americans. This finding highlights the complicated nature of race relations in the United States. Sociologists and race theorists for the most part agree that systemic racism is a force that systemically oppresses racial minorities and benefits majority group members (Mills, 2000). Of course, the dynamics of systemic racism have shifted throughout American history, with Italian-Americans and Irish-Americans experiencing a high degree of oppression at the beginning of the 20th century, but sociological evidence indicates those days are long gone (Feagin, 2006). However, survey research and qualitative interviews with White Americans suggest that there is a portion of European Americans that perceives the racial status quo as being under attack due to the implementation of state sponsored programs such as affirmative action (Norton & Sommers, 2011). In fact, Sidanius and Pratto (1990) found that White Americans who believe that African Americans are achieving racial equality, are also more likely to feel that their own dominant position in society is threatened, and that programs that help ethnic minorities hurt the future of White Americans (Eibach & Keegan, 2006). It is plausible that among college students, there is a subsample of European Americans that believe their race may be a hindrance to their future opportunities, because they believe programs that promote racial equality will create unfair competition over jobs and placement in professional schools thereby hurting their future opportunities. Consequently, these students may react by working harder in school to ensure their academic success and access to future endeavors. The phenomenological model of stress (Lazarus & Folkman, 1984) does in fact posit that events that

are construed as stressful are not necessarily harmful to one's well-being. Depending on the available coping strategies, some stressful events may actually be appraised as challenges, whereby the person may interpret the stressful event as one that could potentially lead to better outcomes. Importantly, our results underscore the importance of studying the perceptions of inequality and their accuracy, as the disparate point of views of White and Black Americans hold important implications for the future of race relations and racial inequality (Mills, 2000; Feagin, 2006; Bonilla-Silva, 2006).

Limitations. The current study has several important limitations that should be addressed. First and foremost, the current sample was one of convenience. The use of college students does reduce the validity of the study to a certain extent. The overarching goal of the current investigation was to examine the impact of perceptions of racial inequality on the adjustment of African American adolescents. However, adolescents who are currently enrolled in college level courses have already achieved a certain level of adjustment and success by most objective standards. Similarly, the participants were primarily sophomores and juniors, indicating that our average respondent has already succeeded in college to some extent and has made it past the extremely stressful first year of university (Castillo et al., 2004; Landrine & Klonoff, 1994). Nonetheless, we did find that even among already successful students, racism-related stress is negatively related to academic adjustment for minority students. At the same time, it is important to consider that although our participants have made it to college, which is no small feat, they still have a long way to go before they have achieved professional and economic success. Furthermore, this study provided a much needed pilot sample for our new measure of systemic racism and reaffirmed the strong psychometric properties of this measure.

Relatedly, the current sample consisted of a very small number of African American

males. In fact, only 28% of our African American respondents were male compared to 50% of European American respondents. The small sample size makes it impossible to test our models separately by gender, despite evidence suggesting that males and females may be susceptible to differential outcomes. Importantly, African Americans males are significantly less likely than their female counterparts to attend college and/or graduate from a four year institution (Conley, 1999; Oliver & Shapiro, 1995). Therefore, it is especially important to examine gender by race interactions, and identify variables that can help African American males succeed in academic settings.

Second, the cross-sectional nature of our data makes it impossible to draw conclusions about the causality of the results. This makes the interpretation of many of the significant interactions challenging at best. Although it is possible that high levels of kinship support contribute to a negative adjustment pattern as do low levels of religious and spirituality, in reality, it is possible that the respondents who reported low levels of adjustment were also relying more on their kin and religious/spirituality. Although it would be difficult to study the impact of racism-related stress longitudinally, future studies should include a qualitative component to help elucidate some of the current findings.

Also, the data were collected by using self-administered surveys, which introduces the possibility that the findings were due to shared variance linked to the use of a single method of assessment or common method variance. However, Spector (2006) has shown that empirical evidence for common method variance in self-report measures is weak and is thus not likely to be a problem in the current investigation. Generally a multiple method and multiple informant approach would add information and help address potential limitations, but when focusing on the individual experience of stress, perceptions and personal appraisals of stress are the most critical

pieces of information. Nonetheless, the relations observed in the current study should be interpreted with caution.

Finally, it is important to consider the context in which the data were collected. The university where the students were enrolled is well known for its racial and ethnic diversity. Furthermore, the campus is located in the heart of a low-income urban neighborhood that is primarily inhabited by African Americans, and in fact many of the students live in housing on the periphery of this neighborhood. Students immersed in this setting will undoubtedly be more aware of issues of race and inequality than those in a more remote and sheltered surrounding. Therefore, the results of the current study may not be generalizable to other areas of the country.

Implications and Future Directions:

Despite its limitations, the current study holds potentially important implications for ethnic minority college students. Most importantly, this study has identified systemic racism as an additional stressor for ethnic minority college students at predominantly White universities. According to national estimates, less than half of African Americans who enter college end up graduating (NCES, 2005). Financial difficulties aside, finding any barrier that hinders the academic success of ethnic minority students should be a priority for any institution of higher learning. Although systemic racism will likely remain weaved into the American fabric, universities can take steps to reduce stress among their minority populations. As our results indicate, having many same race friends on campus actually reduces the stress that is brought on by systemic racism. Colleges and universities could use this knowledge to encourage the formation of more formal and informal clubs on campus geared specifically towards minority students, which have been shown to improve academic outcomes among African American college students (Patton, Bridges & Flowers, 2011). Additionally, steps should be taken to hire

more ethnic minority faculty members and administrators. Not only will an increased minority presence on most campuses contribute to feelings of belongingness among African American students, but it will also serve as a reminder that minorities can and do succeed in the professional and academic world. Other research indicates that mentorship from minority faculty members as well as increased ethnic diversity on campus are related to higher levels of satisfaction among African American students (Maton, Wimms, Grant, Wittig, Rogers & Vasquez, 2011).

The current study fills a void in our current knowledge on racism-related stress. The past 50 years have seen a decline in White Americans' endorsement of prejudice towards African Americans (Gaertner & Dovidio, 1986; Schuman, Steeh, Bobo & Krysan, 1997). In fact, the country has seemingly been moving towards racial equality with the passage of civil rights legislation in the 1960s, school integration, increases in interracial marriages and most recently the induction of a biracial president into the White House. These changes have led many Americans to believe that we are now living in a post-racial society (Dovidio & Gaertner, 2004; Pearson, Dovidio & Gaertner, 2009). However, a closer examination shows that the distribution of wealth and power remains far from equal among Black and White Americans (Feagin, 2006; Bonilla-Silva, 2006; Oliver & Shapiro, 1995). Disparities between Whites and Blacks continue to exist on a number of health indices, access to health care, employment, housing, education and wealth (Dovidio, Penner, Albrecht, Norton, Gaertner & Shelton, 2008). Interestingly, as reported by Pearson et al. (2009) a 2008 Gallup poll indicates that the overwhelming majority of Black Americans polled reported feeling unhappy with the way Blacks are treated in the United States. The shifting racial attitudes in the United States in combination with the current sociological climate suggest that it may be time to shift our focus from the study of interpersonal

discrimination to the study of subtle forms of racism, such as systemic racism (Feagin, 2006) and aversive racism (Dovidio et al., 2008; Pearson et al., 2009).

Future studies should focus on the perceptions of systemic racism and subsequent racism-related stress among younger adolescents. From a practical standpoint, early- to mid-adolescence is a particularly important time to study the impact of systemic racism, as it is necessary to understand the barriers youth perceive as they make important decisions about their future career and educational aspirations. College enrollment is lower among African Americans than dominant group members, and is especially low among African American males (Urban League, 2010; Whittaker & Neville, 2010). In addition, as youth enter adolescence they become more frequently exposed to ethnically diverse settings such as school and the workplace, therefore, heightening their awareness of racial dynamics in the United States (Yip, Seaton & Sellers, 2010). Therefore, it is increasingly important to examine the extent to which perceptions of systemic racism impact one's future goals, as well as characteristics that either attenuate or strengthen the negative impact of racism related stress. Intersecting these life changes in adolescence are important cognitive changes including the development and solidification of one's ethnic identity (Phinney, 1990; Sellers et al., 1998; Cross, 1991), increased racial socialization messages from parents, peers and the media (Stevenson, 1994; Hughes et al., 2006), coupled with important cognitive changes that allow youth a more sophisticated understanding of race and racial structures (Quintana & Vera, 1999). In all, awareness and perceptions of racism increase precipitously in adolescence (Altschul, Oyserman & Bybee, 2006; French et al., 2006), while coping mechanisms are just beginning to come on-line (Cross, 1991). Therefore, it imperative to investigate how African American youth navigate an increasingly diverse world marred by institutional barriers, in order to identify interventions that can help ensure positive

mental, physical and academic outcomes.

Finally, future studies should utilize a more person-centered and qualitative approach to gain a better understanding of the stress response. The phenomenological model of stress posits that stress is a process that represents an ongoing and complex transaction between the person and his/her environment (Lazarus & Folkman, 1984; Clark et al., 1999). While personal relationships and psychological characteristics influence one's reactivity to events, this relation is bidirectional, such that reactions to stress subsequently affect one's ethnic identity. Similarly, coping strategies and outcomes have a bi-directional relation with appraisals, as one's appraisals of events as well as their perceived outcomes, inevitably shapes the use of future coping strategies. As mentioned previously, not all stressful events are appraised as damaging to an individual's well-being. Within stressful appraisals, situations can be appraised as a harm/loss, threat or a challenge (Lazarus & Folkman, 1984). A harm/loss appraisal indicates that damage from the stressful event has already been sustained; if a situation is appraised as a threat it suggests anticipation of a stressful event; finally, a challenge appraisal is one in which the individual sees a way to overcome and benefit from the stressful event (Lazarus & Folkman, 1984). In other words, as individuals develop, their environments change along with their social support networks as does their ethnic identity and ideas about race. Therefore, it follows that perceptions of systemic-racism and any subsequent stress responses will also change throughout the lifetime as individual test new coping strategies and figure out what works and what does not. While a person may perceive systemic racism as a highly stressful barrier in their 20's and 30's, these appraisals may change as they age or vice versa. To fully grasp the dynamic nature of racism-related stress, it is necessary to collect data using qualitative techniques to get a deeper understanding of how African Americans make sense of racial inequality throughout their

lifetime, and how these events are construed under different contexts and environments. Relatedly, a qualitative and person-centered approach could help address many of the questions raised in the current investigation such as the unexpected relation between stress and academic engagement among European American respondents, and the unexpected roles of religion and social support among our African American respondents.

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Appendix A.

Table 15. Exploratory factor analysis for perceptions of systemic racism scale.

Item	Factor 1 loading (Personal)	Factor 2 loading (General)
Founders of country were racist against your racial group	.94	
Housing segregation against racial group is a problem	.68	
Harder for your racial group to get a good job	.72	
Legal action to end racism against your racial group has been discouraged	.59	*.324*
People avoid your neighborhood because of fear	.71	
People of your racial background have to struggle more	.74	
My racial background will make it harder to find a good job	.52	
Racism is no longer a problem in this county		.51
Race is a good predictor of success	*.34*	.32
Distribution of wealth is result of racism	*.30*	.45
Hard work leads to success regardless of race		.56

*Loadings below .25 were suppressed from table

Table 16. Exploratory factor analysis for systemic racism-related stress scale.

Item	Factor 1 loading (Personal)	Factor 2 loading (General)
Treated fairly by institutions	.89	
Experience real estate discrimination	.92	
Reduce changes of living in nice neighborhood	.94	
Must work harder because of racial background	.84	
Others are scared of my racial group	.72	*.44*
Less money because of racial group	.89	
Experience employment discrimination	.92	
Racism is no longer a problem in this county		.89
It is taboo to talk about racism	*.30*	.82
People say the US is post-racial		.84
Some racial groups have more wealth and power than others		.76

*Loadings below .25 were suppressed from table

Appendix B.

Table 17. List of Major Study Variables and Measures

Variable	Measure
Ethnic Identity	Multidimensional Inventory of Black Identity (MIBI; Sellers et al., 1998)
Racial Socialization	Racial Socialization Scale (Hughes, 2003)
Chronic Stress	Perceived Stress Scale (PSS; Cohen & Williams, 1988)
College Stress	Undergraduate Stress Questionnaire (USQ; Crandall, Preisler & Aussprung, 1992)
Racism-Related Stress	Index of Race-Related Stress (IRRS; Utsey, 1996)
Kinship Support	Kinship Support Scale (Taylor et al., 1993)
Religion and Spirituality	Religion and Spirituality Scale (Walker & Dixon, 2002)
Coping Strategies	COPE inventory (Carver, Scheier & Weintraub, 1989)
Sleep Disturbances	Pittsburgh Sleep Quality Index (Buysse, Renolds, Monk, Berman & Kipfer, 1989)
Emotional Eating	Minnesota Eating Behaviors Survey (von Ranson, Klump, Iacono & McGue, 2005)
Psychological Distress	Kessler Psychological Distress Scale (K10; Kessler et al., 2002)
Anxiety	Beck Anxiety Scale (Beck et al., 1988)
Academic Motivation	Burnout and Engagement Scale (Schaufeli et al., 2002)

Demographic information:

1. Date of birth: ___ ___ / ___ ___ / ___ ___ ___ ___

2. Gender (please check one): ☐ Male ☐ Female

3. What is your race or ethnicity? _____

4. What is your relationship status?
    a. ☐ Single   c. ☐ Engaged

    b. ☐ Dating   d. ☐ Married

5. What is your working status?
    a. ☐ Unemployed

    b. ☐ Working part-time (including work-

study)

    c. ☐ Working full-time

6. What is your current living situation?
    a. ☐ Dorm   d. ☐ Living with significant other

    b. ☐ Living alone in apartment off campus   e. ☐ Living with family (at home)

    c. ☐ Living with roommates in apartment off

campus

7. Do you consider yourself a dependent of your ☐ Yes   ☐ No   parents?

      7a. If no, then at what age did you stop being   a
dependent? _____

Please answer the following question about your parents.

8. Who raised you?
    a. ☐ Grandparents   d. ☐ Mother only   g. ☐ Other

    b. ☐ Aunts/Uncles   e. ☐ Father only

    c. ☐ Both parents   f. ☐ Foster parents/homes

8a. What is your female caregiver's (mother, grandmother, aunt, etc) highest level of education?
    a. ☐ Less than HS   d. ☐ Associate Degree (2   g. ☐ Graduate or Professional Degree (MA, MD,
                          years)   Ph.D.)

    b. ☐ HS or GED   e. ☐ Bachelor's Degree (4   h. ☐ I don't know
                          years)

c. ☐ Some college   f. ☐ Some Graduate School   i. ☐ I have no contact with my mother

8b. What is your male caregiver's (father, grandfather, uncles, etc.) highest level of education?

    a. ☐ Less than HS   d. ☐Associate Degree (2   g. ☐ Graduate or Professional Degree (MA, MD, years)   Ph.D.)

    b. ☐ HS or GED   e. ☐Bachelor's Degree (4   h. ☐ I don't know years)

    c. ☐ Some college   f. ☐ Some Graduate School   i. ☐ I have no contact with my father

10. Place of birth of mother (country): _____

11. Place of birth of father (country): _____

12. Please estimate your parents'/caregivers' combined income in the past year:

    a. ☐ Less than $10K   d. ☐ $30,000 - $40,000   g. ☐ $60,000 - $70,000   g. ☐ $90,000 - $100,000

    b. ☐ $10,000 - $20,000   e. ☐ $40,000 - $50,000   h. ☐ $70,000 - $80,000   h. ☐$100,000+

    c. ☐ $20,000 - $30,000   f. ☐ $50,000 - $60,000   i. ☐ $80,000 - $90,000

For the next set of questions, please think of the neighborhood you lived in while you attended high school. If you lived in more than one neighborhood, please answer for the neighborhood you felt most attached to.

13. Please provide zip-code for your place of residence during high school: ___ ___ ___ ___ ___

14. Approximately what proportion of people in your neighborhood were the same race/ethnicity as you (**please circle closest percentage**)?

    a. ☐ Less than 10%   d. ☐ 30 - 40%   g. ☐ 60 – 70%   g. ☐ 90 – 00%

    b. ☐ 10 – 20%   e. ☐ 40 – 50%   h. ☐ 70 – 80%   h. ☐100%

    c. ☐ 20 – 30%   f. ☐ 50 – 60%   i. ☐ 80 – 90%

15. What racial group would you consider the majority in your neighborhood? _____

16. Now think of the high school you attended. Approximately what percentage of students were the same race/ethnicity as you?

    a. ☐ Less than   d. ☐ 30 - 40%   g. ☐ 60 – 70%   g. ☐ 90 – 00%

10%

    b. ☐ 10 – 20%   e. ☐ 40 – 50%   h. ☐ 70 – 80%   h. ☐100%

    c. ☐ 20 – 30%   f. ☐ 50 – 60%   i. ☐ 80 – 90%

17. What racial group would you consider the majority in your high school? _____

18. How many of your closest friends are the same race/ethnicity as you?
    a. ☐ None   c. ☐ 2-3   e. ☐ All

    b. ☐ 1-2   d. ☐ 3-4

19. How many of your closest friends that you have met **in college** are the same race/ethnicity as you?
    a. ☐ None   c. ☐ 2-3   e. ☐ All

    b. ☐ 1-2   d. ☐ 3-4

20. How many of your closest friends that you have met in college are of a different race/ethnicity than you?
    a. ☐ None   c. ☐ 2-3   e. ☐ All

    b. ☐ 1-2   d. ☐ 3-4

Perceptions of Systemic Racism:

*Historically, race has been an important factor in people's lives in the United States. These days, not everyone agrees that racism continues to play a powerful role in shaping living arrangements. Based on your **own** observations please indicate whether you agree/disagree with the following statements about racism towards your own racial group.*

1 = Strongly Disagree

2 = Slightly Disagree

3 = Slightly Agree

4 = Strongly Agree

To what extent do you agree that...

	1	2	3	4
1. The founders of this country and writers of the constitution were prejudice against people of your racial background, and their racist ideologies are reflected in our current rules and procedures	1	2	3	4

	1	2	3	4
2. People of your racial background continue to live in racially segregated neighborhoods, more so than people of other racial backgrounds	1	2	3	4
3. People of your racial background have a lesser likelihood of getting a good job and living in an affluent neighborhood than people of other races	1	2	3	4
4. Racism is no longer a problem in this country, and everybody can succeed if they work hard enough	1	2	3	4
5. A person's racial background is a powerful predictor of their life chances regardless of the amount of money and education they have	1	2	3	4
6. Legal and political efforts aimed at helping people of your racial background have been put down or discouraged because of others' desire to maintain the social/political/economic status quo	1	2	3	4
7. People of racial backgrounds other than your own tend to avoid neighborhoods and schools that are primarily made up of individuals of your own racial background because of fear	1	2	3	4
8. Because of your racial background, regardless of how hard you work and how much education you achieve you will always struggle more economically than individuals of other racial backgrounds	1	2	3	4
9. The distribution of wealth in the United States is just another symptom (or outcome) of racism	1	2	3	4
10. My racial background will be a hindrance to me when I have to look for jobs after college	1	2	3	4
11. If I work hard enough and get good grades, I will get the same rewards as anyone regardless of my racial or ethnic background	1	2	3	4

Racism-Related Stress: *Racism and prejudice can affect people in unique ways. Please read the following statements about discrimination and racism towards your own racial group and indicate on a scale of 1 through 4 to what extent these events bother you or cause you distress.*
1=does not bother me at all
2=it makes me slightly upset

3=it makes me upset

4=it makes me *extremely upset*

It bothers me that....

	1	2	3	4
1. It is possible that I will be treated unfairly by larger institutions (such as the legal, educational and political system) because of my race	1	2	3	4
2. It is possible that I will experience discrimination when looking to buy or rent a place to live because of my racial background (regardless of how much money I make)	1	2	3	4
3. My racial background may possibly reduce my chances of getting a good job and living in an affluent neighborhood compared to people of other races	1	2	3	4
4. Some people seem to think that racism is no longer a problem in this country, and that everybody can succeed if they work hard enough	1	2	3	4
5. Because of my race, I have to work harder than other people to get the same rewards	1	2	3	4
6. It is considered taboo to talk about racism because it is thought to be an historical problem	1	2	3	4
7. People of racial backgrounds other than my own appear to be scared of members of my racial group	1	2	3	4
8. My family does not have as much money as other families because of our racial background	1	2	3	4
9. It is possible that I will experience employment discrimination when I have to look for jobs after college because of my race	1	2	3	4
10. People often say that the United States is a post-racial society	1	2	3	4
11. Some racial groups control more of the wealth and power in the United States than others.	1	2	3	4

Compulsive Eating:

To what degree do you agree/disagree with the following statements?

	1=Strongly agree	2=Somewhat agree	3=Somewhat disagree	4=strongly disagree
a. I eat when I'm upset about things.	☐ 1	☐ 2	☐ 3	☐ 4
b. Sometimes I stuff myself with food.	☐ 1	☐ 2	☐ 3	☐ 4
c. Sometimes I eat lots and lots of food and feel like I can't stop.	☐ 1	☐ 2	☐ 3	☐ 4
d. I think a lot about overeating (eating a really large amount of food).	☐ 1	☐ 2	☐ 3	☐ 4
e. Sometimes, when I'm with other people, I won't eat much, but later, when I'm alone, I'll eat a lot.	☐ 1	☐ 2	☐ 3	☐ 4
f. Sometimes I eat by myself so that others won't know that I'm eating.	☐ 1	☐ 2	☐ 3	☐ 4
g. When I get upset, I'm afraid that I will start eating.	☐ 1	☐ 2	☐ 3	☐ 4

Health:

1. How tall are you (in inches)? _____

2. What is current weight (in lbs.)? _____

3. Have you gained any weight since you started ☐ Yes ☐ No college? If yes, how much (in lbs.)? _____

4. Would you say your health is: ☐ Excellent ☐ Very good ☐ Good ☐Fair ☐Poor

5. In the PAST YEAR, have you had any of the following health problems? (**Check as many as apply**):

    a. ☐ Anemia   h. ☐ Bowel Problems

    b. ☐ Chest Pain   i. ☐ Frequent Headaches

    c. ☐ Heart Palpitations   j. ☐ Memory Loss

    d. ☐ Shortness of Breath with Activity   k. ☐ Fainting

   e. ☐ Swelling in the legs

   f. ☐ Muscle or Joint Pain   l. ☐ Head Injury with Black Out

   g. ☐ Bladder or Kidney problems   M. ☐ Sleep Problems

Kinship support:

Now I'd like to ask you some questions about other adult relatives besides your mother and father, relatives like your grandparents or aunts and uncles.

A. How often do you see or talk on the telephone with adult relatives who do not live with you?
   a. ☐ every day   c. ☐ once a week   e. ☐ a few times a year

   b. ☐ several times a week   d. ☐ once a month   f. ☐ hardly ever

B. How many adult relatives live near you--within an hour's drive of your home?
   a. ☐ none   c. ☐ 3-5   e. ☐ 11-19

   b. ☐ 1 or 2   d. ☐ 6-10   f. ☐ 20 or more

How strongly do you agree or disagree with the following statements about family and relatives?

A. I should keep in close contact with my relatives.
   _____4 = Strongly agree   _____3 = Agree   _____2 = Disagree   _____1 = Strongly disagree

B. I should try to keep in touch with my relatives but sometimes it's better not to see them very often.
   _____4 = Strongly agree   _____3 = Agree   _____2 = Disagree   _____1 = Strongly disagree

C. I believe an older person should be cared for by the family, not in home for the aged.
   _____4 = Strongly _____3 = Agree   _____2 = Disagree   _____1 = Strongly
agree   disagree

D. It's best not to see my relatives too often because they create problems for me.
   _____4 = Strongly _____3 = Agree   _____2 = Disagree   _____1 = Strongly
agree   disagree

E. Having many relatives nearby is good because I can always rely on them in times of need.

_____4 = Strongly agree _____3 = Agree _____2 = Disagree _____1 = Strongly disagree

F. One of the good things in life for me is to talk and have fun with my relatives.
_____4 = Strongly agree _____3 = Agree _____2 = Disagree _____1 = Strongly disagree

G. It's best to go to a relative first rather than a teacher or counselor when a person has an emotional problem and needs help.
_____4 = Strongly agree _____3 = Agree _____2 = Disagree _____1 = Strongly disagree

H. I would rather not have too many relatives living nearby because they limit my independence.
_____4 = Strongly agree _____3 = Agree _____2 = Disagree _____1 = Strongly disagree

I. Friends are more dependable in times of need than relatives.
_____4 = Strongly agree _____3 = Agree _____2 = Disagree _____1 = Strongly disagree

K. I think an individual should try to make it on his\her own and not depend on his\her family for help.
_____4 = Strongly agree _____3 = Agree _____2 = Disagree _____1 = Strongly disagree

L. When I am worried about something I look to my relatives for advice.
_____4 = Strongly agree _____3 = Agree _____2 = Disagree _____1 = Strongly disagree

M. We can count on our relatives to help when we have problems.
_____4 = Strongly agree _____3 = Agree _____2 = Disagree _____1 = Strongly disagree

N. Relatives have an obligation to help each other.

_____4 = Strongly _____3 = Agree _____2 = Disagree _____1 = Strongly
agree   disagree

O. Sometimes I feel my relatives depend on my family too much to help them with their problems.
_____4 = Strongly _____3 = Agree _____2 = Disagree _____1 = Strongly
agree   disagree

P. If I needed help with a problem I would talk to a friend before I would tell a relative.
_____4 = Strongly _____3 = Agree _____2 = Disagree _____1 = Strongly
agree   disagree

Q. If I were in some kind of trouble I would call a relative for help.
_____4 = Strongly _____3 = Agree _____2 = Disagree _____1 = Strongly
agree   disagree

R. When we have to make important family decisions we ask our relatives for advice.
_____4 = Strongly _____3 = Agree _____2 = Disagree _____1 = Strongly
agree   disagree

S. Sometimes my relatives know more about me than I want them to know.
_____4 = Strongly agree _____3 = Agree _____2 = Disagree _____1 = Strongly
                                                             disagree

T. I am close to my relatives.
_____4 = Strongly agree _____3 = Agree _____2 = Disagree _____1 = Strongly
                                                             disagree

U. We often get together with my relatives just to visit and have fun.
_____4 = Strongly agree _____3 = Agree _____2 = Disagree _____1 = Strongly
                                                             disagree

V. Family gatherings like reunions and holiday celebrations are not much fun for me.
_____4 = Strongly _____3 = Agree _____2 = Disagree _____1 = Strongly
agree   disagree

W. I really don't have much in common with my relatives.

_____4 = Strongly agree   _____3 = Agree   _____2 = Disagree   _____1 = Strongly disagree

X. I enjoy going places with my relatives.
_____4 = Strongly agree   _____3 = Agree   _____2 = Disagree   _____1 = Strongly disagree

Y. I wish I could see my relative more often.
_____4 = Strongly agree   _____3 = Agree   _____2 = Disagree   _____1 = Strongly disagree

Kessler Psychological Distress Scale (K10)

These questions concern how you have been feeling over the past 30 days. Check a box below each question that best represents how you have been.

1. During the last 30 days, about how often did you feel tired out for no good reason?

_____ 1=None of the time   _____2= A little of the time   _____ 3=Some of the time   _____4= Most of the time   _____5= All of the time

2. During the last 30 days, about how often did you feel nervous?

_____ 1=None of the time   _____2= A little of the time   _____ 3=Some of the time   _____4= Most of the time   _____5= All of the time

3. During the last 30 days, about how often did you feel so nervous that nothing could calm you down?

_____ 1=None of the time   _____2= A little of the time   _____ 3=Some of the time   _____4= Most of the time   _____5= All of the time

4. During the last 30 days, about how often did you feel hopeless?

_____ 1=None of the time   _____2= A little of the time   _____ 3=Some of the time   _____4= Most of the time   _____5= All of the time

5. During the last 30 days, about how often did you feel restless or fidgety?

_____ 1=None of the time   _____2= A little of the time   _____ 3=Some of the time   _____4= Most of the time   _____5= All of the time

6. During the last 30 days, about how often did you feel so restless you could not sit still?

_____ 1=None of the time   _____2= A little of the time   _____ 3=Some of the time   _____4= Most of the time   _____5= All of the time

7. During the last 30 days, about how often did you feel depressed?

    ____ 1=None of   _____2= A little of   _____ 3=Some of the   ____4= Most of   ____5= All of
        the time   the time   time   the time   the time

8. During the last 30 days, about how often did you feel that everything was an effort?

    ____ 1=None of   _____2= A little of   _____ 3=Some of the   ____4= Most of   ____5= All of
        the time   the time   time   the time   the time

9. During the last 30 days, about how often did you feel so sad that nothing could cheer you up?

    ____ 1=None of   _____2= A little of   _____ 3=Some of the   ____4= Most of   ____5= All of
        the time   the time   time   the time   the time

10. During the last 30 days, about how often did you feel worthless?

    ____ 1=None of   _____2= A little of   _____ 3=Some of the   ____4= Most of   ____5= All of
        the time   the time   time   the time   the time

Sleep Disturbances: **The next questions ask about your usual sleep habits during the <u>past month only.</u> Your answers should indicate the most accurate reply for the majority of days and nights in the past month. Please answer all questions:**

<u>During the past month:</u>

1. What time have you usually gone to bed each night?
<div align="center">

BED TIME:_____
</div>

2. How long (in minutes) has it usually taken you to fall asleep each night?
<div align="center">

NUMBER OF MINUTES:_____
</div>

3. What time have you usually gotten up in the morning?
<div align="center">

GETTING UP TIME:_____
</div>

4. how many hours of <u>actual sleep </u>do you get at night? (this may be different than the number of hours you spend in bed)
<div align="center">

HOURS OF SLEEP PER NIGHT:_____
</div>

5. During the <u>past month,</u> how often have you had trouble sleeping because you…..

a. cannot get to sleep within 30 minutes?

        a. ☐ Not during the past month

        b. ☐ Less than once a week

        c. ☐ Once or twice a week

        d. ☐ Three or more times a

week

b. Wake up in the middle of the night or early morning

        a. ☐ Not during the past month

        b. ☐ Less than once a week

        c. ☐ Once or twice a week

        d. ☐ Three or more times a

week

c. Have to get up to use the bathroom?

        a. ☐ Not during the past month

        b. ☐ Less than once a week

        c. ☐ Once or twice a week

        d. ☐ Three or more times a

week

d. Cannot breathe comfortably?

        a. ☐ Not during the past month

        b. ☐ Less than once a week

        c. ☐ Once or twice a week

        d. ☐ Three or more times a

week

e. Cough or snore loudly?

        a. ☐ Not during the past month

        b. ☐ Less than once a week

        c. ☐ Once or twice a week

        d. ☐ Three or more times a

week

f. Feel too cold?

        a. ☐ Not during the past month

        b. ☐ Less than once a week

        c. ☐ Once or twice a week

        d. ☐ Three or more times a

week

g. Feel too hot?

        a. ☐ Not during the past month

        b. ☐ Less than once a week

        c. ☐ Once or twice a week

        d. ☐ Three or more times a

week

h. Had bad dreams?

       a. ☐ Not during the past month

       b. ☐ Less than once a week

       c. ☐ Once or twice a week

       d. ☐ Three or more times a

week

i. Have pain?

       a. ☐ Not during the past month

       b. ☐ Less than once a week

       c. ☐ Once or twice a week

       d. ☐ Three or more times a

week

j. Other reason? Please describe reason:_____

How often in the past month have you had trouble sleep because of this?

       a. ☐ Not during the past month

       b. ☐ Less than once a week

       c. ☐ Once or twice a week

       d. ☐ Three or more times a

week

6. During the past month, how would you rate your sleep quality overall?

       a. ☐ Very good

       b. ☐ Fairly good

       c. ☐ Fairly bad

       d. ☐ Very bad

7. During the past month, how often have you taken medicine to help you sleep? (prescribed or "over the counter")

       a. ☐ Not during the past month

       b. ☐ Less than once a week

       c. ☐ Once or twice a week

       d. ☐ Three or more times a

week

8. During the past month, how often have you had trouble staying awake while working, eating meals, or engaging in social activity?

       a. ☐ Not during the past month

       b. ☐ Less than once a week

c. ☐ Once or twice a week

d. ☐ Three or more times a week

9. During the past month, how much of a problem has it been for you to keep up enthusiasm to get things done?

a. ☐ Not during the past month

b. ☐ Less than once a week

c. ☐ Once or twice a week

d. ☐ Three or more times a week

Undergraduate Stress Questionnaire (USQ):

Please indicate whether the following events has happened to you at any time during the last week and indicate how stressful the event was

0 = event did not occur

1 = event occurred by was not stressful

2 = event occurred and was a little stressful

3 = event occurred and was somewhat stressful

4 = event occurred and was very stressful

In the past week….					
1. you had a lot of tests	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
2. assignments in all classes were due the same day	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
3. you had a lot of deadlines to meet	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
4. you went into a test unprepared.	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
5. you had projects/research papers due	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
6. you did badly on a test	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
7. you did worse than expected on test	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
8. you had a class presentation	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
9. you were working while in school	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
10. you crammed for a test	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
11. you are trying to decide on a major	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
12. noise disturbed you while trying to study	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
13. you couldn't understand your professor	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
14. you stayed up late writing a paper	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
15. you talked to a professor	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
16. You got to class late	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4
17. You sat through a boring class	☐ 0	☐ 1	☐ 2	☐ 3	☐ 4

Burnout and Engagement scale (Schaufeli, Martinez, Pinto, Salanova & Bakker, 2002). The following statements describe how some college students feel regarding academics and college in general. Please indicate to what degree you agree/disagree with the following statements.

	1=Strongly Disagree	2=Somewhat Disagree	3=Somewhat Agree	4=Strongly Agree
Exhaustion				
1. I feel emotionally drained by my studies.	☐ 1	☐ 2	☐ 3	☐ 4
2. I feel used up at the end of a day at university.	☐ 1	☐ 2	☐ 3	☐ 4
3. I feel tired when I get up in the morning and I have to face another day at the university.	☐ 1	☐ 2	☐ 3	☐ 4
4. Studying or attending a class is really a strain for me.	☐ 1	☐ 2	☐ 3	☐ 4
5. I feel burned out from my studies.	☐ 1	☐ 2	☐ 3	☐ 4
Cynicism				
1. I have become less interested in my studies since my enrollment at the university.	☐ 1	☐ 2	☐ 3	☐ 4
2. I have become less enthusiastic about my studies.	☐ 1	☐ 2	☐ 3	☐ 4
3. I have become more cynical about the potential usefulness of my studies.	☐ 1	☐ 2	☐ 3	☐ 4
4. I doubt the significance of my studies.	☐ 1	☐ 2	☐ 3	☐ 4
Professional Efficacy				
1. I can effectively solve the problems that arise in my	☐ 1	☐ 2	☐ 3	☐ 4

	studies.				
2.	I believe that I make an effective contribution to the classes that I attend.	☐ 1	☐ 2	☐ 3	☐ 4
3.	In my opinion, I am a good student.	☐ 1	☐ 2	☐ 3	☐ 4
4.	I feel stimulated when I achieve my study goals.	☐ 1	☐ 2	☐ 3	☐ 4
5.	I have learned many interesting things during the course of my studies.	☐ 1	☐ 2	☐ 3	☐ 4
6.	During class I feel confident that I am effective in getting things done.	☐ 1	☐ 2	☐ 3	☐ 4

Dedication

1.	I find my studies to be full of meaning and purpose.	☐ 1	☐ 2	☐ 3	☐ 4
2.	My studies inspire me.	☐ 1	☐ 2	☐ 3	☐ 4
3.	I am enthusiastic about my studies.	☐ 1	☐ 2	☐ 3	☐ 4
4.	I am proud of my studies.	☐ 1	☐ 2	☐ 3	☐ 4
5.	I find my studies challenging.	☐ 1	☐ 2	☐ 3	☐ 4

		1=Strongly Disagree	2=Somewhat Disagree	3=Somewhat Agree	4=Strongly Agree
Absorption					
1.	Time flies when I'm studying.	☐ 1	☐ 2	☐ 3	☐ 4
2.	When I am studying, I forget everything else around me.	☐ 1	☐ 2	☐ 3	☐ 4
3.	I feel happy when I am studying intensively.	☐ 1	☐ 2	☐ 3	☐ 4
4.	I can get carried away by my	☐ 1	☐ 2	☐ 3	☐ 4

studies.

College adjustment:

Indicate how much you agree with each of the following statements:

	1=Strongly Disagree	2=Disagree	3=Partly Agree	4=Agree	5=Strongly Agree
1. I prepare well for class.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
2. I am satisfied with my academic performance.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
3. I am satisfied with the quality of courses.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
4. I am very involved with college social activities.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
5. I am satisfied with my social life.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
6. I don't feel different from others in undesirable ways.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
7. I am always homesick.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
8. I have trouble coping with college stress.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
9. I always feel tense and nervous.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

Religion and spirituality (Walker & Dixon, 2002):

How often do you engage in the following activities?

	1=Never	2=Rarely	3=Sometimes	4=Often	5=Daily
1. I attend a place of worship with my family.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
2. I attend a place of worship in	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

	college.					
3.	I read the bible.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
4.	I pray.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
5.	I listen to gospel songs/music.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
6.	I am involved in other organized religious activities (bible study, meetings, etc.)	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

To what degree are the following statements important to you?

1 = not at all important   **2 = somewhat important**   **3 = not important or unimportant**

4 = very important   **5 = extremely important**

1.	Belief in God.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
2.	Believing in a high power.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
3.	Attending place of worship/being a member of a religious organization.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
4.	Belief that God/higher power controls life.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
5.	Taking comfort in praying.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
6.	Belief that daily behavior is guided by God/higher power.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5