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AFRICAN AMERICANS

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The School of Graduate Studies

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In Partial Fulfillment

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Doctor of Psychology

by

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CERTIFICATE OF APPROVAL

DOCTORAL DISSERTATION

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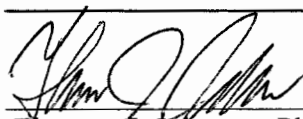
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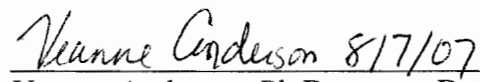
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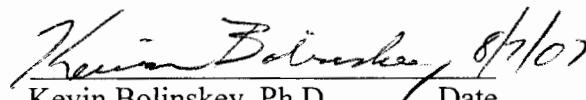
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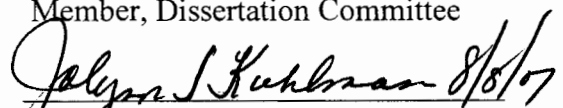
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ABSTRACT

The paper sought to extend the work on religious coping in African Americans by exploring the religious moderators of the relationship between stress and adjustment between cultures. Specifically, the goal of the present investigation was to identify whether the buffering effects of religious moderators (i.e., religious coping and religious support) on the relationship between stress and adjustment varied by race. Many studies on African Americans supports that social and individualistic coping styles are respectively predictors of positive and negative adjustment.

Results partially supported that religious support in African Americans was a better predictor of adjustment than religious coping. Overall, this was true for alcohol-related variables, but not for well-being variables. Results provided much stronger support for the predicted moderating effect of religious support on the relationship between stress and adjustment in African Americans. Religious coping failed to moderate this relationship, and no significant buffering effects were found for religious coping or religious support in Whites. This is one of the study's strongest findings.

Overall, results were consistent with Agnew's (1992) general strain theory. Alternative explanations for why hypothesis were, or were not supported are offered.

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This project is dedicated to the memory of my grandmother, Dorise Maddux, and mother, Michelle Maddux, for disciplining, loving, and never doubting. I would also like to acknowledge Dr. Thomas Johnson for his unmerited investment in my professional development, Dr. Virgil Sheets and Dr. Jean Kristeller for their collaboration and support, and the Bethlehem Temple Church family.

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INTRODUCTION

Historically, Africans and African Americans in this country have faced more oppression and disadvantage than any other racial or ethnic group. Consequently, they have received increased attention in the empirical literature concerning how they handle strain, which typically results in negative affect and deviant coping behaviors. Strain in the African American experience has historically been linked to slavery and current day racism and discrimination.

Many researchers have chosen to investigate the buffering effects of religiousness and spirituality on the relationship between strain and adjustment in African Americans. The African church was birthed during pre-antebellum America. It restored social networks in families of African slaves and emancipated African Americans. Furthermore, it continues to be the most powerful social institution in African American culture. Although a good deal of evidence has accumulated supporting the connection between religiousness and positive outcomes in this group, less attention has been devoted to the active ingredients of African Americans' religious experiences. Maybe religious support, or the social support received from those considered to be part of the church, is one of these active ingredients.

It has been consistently demonstrated in the general social support literature that social support has a greater impact on the physical health, mental health, and parenting of

African Americans than Whites. In addition, some evidence suggests that African Americans' individualistic problem-focused attempts to cope hinge on social support. Thus, it is plausible that religious support in African Americans is better than individual religious coping at moderating the relationship between life stress and adjustment.

Recently, there has been a resurrection of strain theory in the sociological literature despite past criticism and diminished interest in the theory. Agnew's (1992) General Strain Theory (GST) of crime and delinquency has led this revival as it tackled many of the shortcomings of previous strain theories, and survived subsequent empirical investigations (Brezina, 1998; Mazerolle & Piquero, 1998; Paternoster & Mazerolle, 1994; Piquero, & Sealock, 2000; Warner & Fowler, 2003). The following overview of Agnew's (1992) GST represents an improvement on classical strain theories and a more complete description of various types of strain.

Agnew (1992) proposed three major categories of strain. The first category is the failure to achieve positively valued goals. The second category is the actual or anticipated removal of something positively valued from an individual. Lastly, the third category of strain is the actual or anticipated experience of something negative.

According to Agnew (1992), these various types of strain all lead to negative affect. Negative affect may be self-directed (i.e., depression or anxiety) or outer-directed (i.e., aggression). However, the degree of negative affect experienced in response to strain is moderated by the effective use of coping strategies.

Agnew (1992) made the distinction between self-directed coping strategies (i.e., cognitive appraisals and drug use) and outer-directed coping strategies (i.e., violence, revenge, and avoidance). Furthermore, he suggested that self-directed negative affect

(i.e., depression or anxiety) is likely to result in self-directed coping responses (i.e., alcohol use). For example, an individual suffering from bereavement would be more likely to engage in self-directed deviance (i.e., alcohol use), than outer-directed deviance (i.e., violence). Likewise, outer-directed emotions are likely to result in outer-directed coping (Agnew, 1992). These concepts have been supported in an empirical study conducted by Jang and Johnson (2003). The specifics of their findings will be reviewed later.

GST and African Americans

Although Agnew (1992) stated that lower class individuals are particularly subject to strain, he made no statements regarding the significance of General Strain Theory (GST) in explaining behavior in specific racial and ethnic groups. However, African Americans have recently become the focus of GST investigations (Eitel & Turner, 2003; Jang & Johnson, 2003). Investigators argue that GST is particularly relevant to African Americans and legitimizes an investigation of coping and adjustment (negative affect, subjective well-being, and alcohol use and problems) in this group. The following epidemiological findings will make this clearer.

One source of strain is the failure to achieve positively valued goals. According to the United States Bureau of the Census (1995), the poverty rate of African Americans remains three times higher than Whites (33.1% v. 12.2%) and the unemployment rate is twice as high as Whites (11% v. 5%). Clearly, wealth and employment are highly valued in the United States. Therefore, African Americans' pursuit and failure to achieve these goals theoretically makes them more susceptible than Whites to strain and negative affect.

There is also evidence that suggests African Americans' efforts to work harder by using a proactive problem-focused coping style to close the gap between them and Whites leads to negative health outcomes (Bennett et al., 2004; Dressler, 1985), including hypertension (Bennett et al., 2004). In short, the amount of effort disadvantaged groups put forward to achieve success is inversely related to positive affect. This has been coined the "John Henry Hypothesis," as reviewed by Bennett et al. (2004).

Agnew (1992) also categorized strain as the actual or anticipated removal of something positively valued from an individual. Freedom is positively valued by most individuals, and perhaps especially by African Americans considering the history of slavery in America. Nonetheless, approximately one-third of African American men in their twenties are in jail, on probation, or on parole (Freeberg, 1995), far more than any other racial or ethnic group. Clearly, this would qualify as a major source of strain as categorized by Agnew and further supports the likelihood that more African Americans than Whites are susceptible to strain and negative affect.

The final category of strain Agnew (1992) reviewed is the actual or anticipated presentation of something negative or adverse. The homicide rate of African Americans ages 15-24 was nearly ten times that of Whites in 1989. African American teenagers are more likely to contract a sexually transmitted disease than any other group of teenagers (Harvey & Rauch, 1997). Furthermore, the lifespan of African Americans is 5-7 years shorter than Whites (Anderson, 1995; Felton, Parson, Misener, & Oldaker, 1997).

All together, these poignant statistics fit well into Agnew's model of strain. Together, they suggest that African Americans theoretically experience significantly higher levels of negative affect than most other groups. However, as mentioned earlier,

strain's relationship with negative affect is moderated by one's coping strategies.

Therefore, an in-depth investigation of how African Americans moderate the relationship between strain and negative affect is warranted, and the best place to begin exploring core-cultural coping strategies is at the roots, or source of strain, in the African American community; namely, slavery.

Racism and discrimination are alive and well in the minds of most African Americans with only 9% believing they receive the same treatment as Whites (Tilove, 2001). Historically, racism and discrimination have been linked to each source of strain described thus far. Their roots can be traced back to Africans' history of enslavement in this country. Poole (1990) connected this history to cultural-historical coping strategies used by African slaves. His belief was that the history of slavery in America is inextricably bound to the practice of Christianity by Africans and African Americans. The following is a brief review of the history and development of the African church, and explains why the church is an obvious place to begin an in-depth investigation of how African Americans cope to reduce negative affect resulting from strain.

The African Church

History and development. Traditionally, slaveholders and traders justified slavery because it led to the evangelization of Africans (Poole, 1990). Although Africans initially participated in segregated White churches, they eventually formed slave churches pastored by a slave preacher (Poole, 1990). Importantly, Poole notes that similar to how slavery disrupted the social network of the traditional African family, the Emancipation disrupted the social network and family systems present on slave plantations. However, through the African church, African Americans became

organized, making it impossible to overemphasize its contribution to the social organization of this people (Poole, 1990). According to Poole (1990), the African church was the only place where former slaves could exercise political power, leadership skills, and self-determination following the Emancipation. Even today, amongst African American women, the social support found within the African church helps confront and transcend limitations, achieve growth, and make sense of experiences with racism and discrimination in America (Mattis, 2002). As the oldest social institution in African American history, the African church alone established order for the emancipated African American family (i.e., family structure and ethics).

Currently, the African church remains the most important organization in African American life (Poole, 1990). African Americans consistently report higher levels of religiosity than Whites (Taylor, 1988), and attach more importance to religion and church (Benson et al., 1987; Benson et al., 1986; & Johnson et al., 1986). Furthermore, African Americans attend religious services at higher rates than Whites (Glenn, 1964; Lazerwitz, 1961), rely on prayer more than Whites (Gomberg & Nelson, 1995), and score significantly higher than Whites on measures of intrinsic religiosity (Benson et al., 1986). The African church continues to be a powerful social organizing institution, which is evident upon a review of the literature (Chatters, 2000; Wallace & Bergeman, 2002). Thus, it is important to identify: 1) “if” and “how” the church helps African Americans cope; 2) the fundamental components of this coping style (i.e., social support or individualistic religious appraisals); and 3) whether it truly moderates the relationship between strain and negative affect.

Just recently, studies have examined GST's applicability to African Americans (Eitel & Turner, 2003; Jang & Johnson, 2003). Parham and McDavis (1987) described African men as a "population at risk," and they cited others who even described African American men as an endangered species. Despite the importance of the African church, Jang and Johnson (2003) is the only study to date that has tested GST in African Americans, and devoted attention to unique components of religious involvement (i.e., social support or individual religious appraisals) that may buffer against strain and prevent negative affect. The following is a review of their findings.

GST and Coping in African Americans

Jang and Johnson (2003) sought to explore negative affect and coping, and confirm Agnew's (1992) theoretical differentiation between self-directed (i.e., depression and drug use) and outer-directed (i.e., aggression and violence) responses to strain. Specifically, they hypothesized that religiosity weakens or buffers the positive relationships between strain and negative affect, and between negative affect and deviant responses to strain. Data were collected from the 1980 National Survey of African Americans cross sectional study, which was a nationally representative survey of African American adults that yielded a sample of 2,107 individuals (Jackson, 1991). Every African American household in the United States had an equal chance of being selected for the survey. Respondents were asked about personal problems experienced in their lives and in the lives of significant others. If they endorsed having one of these problems, respondents would select the corresponding problem from a list of 120 different categories of life events, of which 107 covered Agnew's (1992) three categories of strain. Furthermore, upon an affirmative answer, respondents completed nine items that

provided a measure of negative affect ranging from self- to outer-directed emotions. Self- and outer-directed deviance in response to strain was assessed by asking how often respondents, for example, fought/ argued (outer-directed), or drank alcohol/ used drugs (self-directed) in response to personal problems. Finally, respondents completed a measure of religiosity adapted from Levine, Taylor, and Chatters' (1995) investigation of religious involvement among African Americans.

In support of Agnew's (1992) GST, negative affect was found to completely mediate the effects of strain on deviant responses. Strain predicted negative affect and negative affect predicted deviant responses. Also in support of GST, self-directed negative affect had larger effects on self-directed deviant responses to strain (i.e., drug use) than outer-directed deviant responses to strain (fighting/arguing). Religiosity and self-directed negative affect were found to be positively correlated such that higher levels of religiosity were associated with higher levels of negative affect. Although, religiosity did not weaken the relationship between strain and negative affect, it was found to moderate the effects of negative affect on deviance (i.e., alcohol/ drug use and fighting/arguing). In other words, results suggested that African Americans high in religiosity were less likely than those low in religiosity to lose their tempers in reaction to strain, but were not protected against experiencing depressed and anxious feelings. It is possible that some highly religious African Americans make religious reappraisals of strain. For example, they may reappraise strain as a test from God or punishment for a lack of spirituality. Intuitively, such an appraisal might prevent the individual from further spiritual shortcomings (i.e., alcohol use), but do nothing for the subjective feelings of

negative affect, or more broadly, decreased well-being (i.e., guilt, shame, conviction, etc.).

More concretely, a highly religious African American who appraises their current hardships as being a punishment from God for having premarital sex might be unlikely to cope by getting intoxicated for fear of further punishment or hardships. However, they would be likely to continue to report their experience of guilt and negative affect for having premarital sex in the first place. This pattern was found in highly religious African Americans in Jang and Johnson (2003). Pargament (1997) described these religious reappraisals as being fundamental to religious coping. Thus, religious coping will be explored as a potential active ingredient in African Americans' religious coping efforts to manage strain. First, Jang and Johnson's (2003) findings concerning social support deserves attention.

Jang and Johnson (2003) found that social support, not religiosity, significantly reduced the effect of strain on negative affect. In other words, increased social support in the presence of strain resulted in decreased negative affect and deviant behaviors. Social support has been defined several ways. Jang and Johnson (2003) defined social support as having family members in close proximity. However, others have defined social support by the number of friends one has, time spent with friends and relatives, and fellowship with people who share similar interests or beliefs. Several studies have demonstrated that social support is a reliable predictor of adjustment in African Americans. However, fewer studies have taken into account how influential the church is in African Americans development and maintenance of these relationships (Chatters, 2000). A more nuanced and culturally-appropriate approach in African Americans would

be to examine the benefits of religious support, rather than general social support, as a predictor of adjustment.

Positive and Negative Religious Coping

Pargament (1997) concluded that when faced with stressful life situations, an individual's religious beliefs and methods of coping are mediated by an appraisal of their circumstance. For example, when faced with hardship one may reappraise God as punishing or reappraise the situation as an act of Satan (Pargament et al., 1990). In an attempt to expand the breadth of measurement for the many styles of religious coping, Pargament, Smith, Koenig, and Perez (1998) explicated two patterns of religious coping, positive and negative religious coping. Positive religious coping is characterized by a sense of spirituality, a secure relationship with God, a belief that there is meaning to be found in life, and a sense of spiritual connectedness with others. Alternatively, negative religious coping is characterized by the expression of a less secure relationship with God, a tenuous and ominous view of the world, and a religious struggle for significance.

Negative religious coping may explain Jang and Johnson's (2003) finding that African Americans high in religiosity are less likely to engage in deviant coping (i.e., alcohol/drug use and fighting/arguing) while continuing to experience negative affect. In other words, African Americans may be reappraising strain as punishment from God for their sins or lack of spirituality, thereby preventing further deviant coping or sinful behaviors (i.e., alcohol use), but remaining vulnerable to negative affect (conviction/guilt) or decreased subjective well-being.

Alternatively, religious coping's individualistic nature may explain why highly religious African Americans in Jang and Johnson's (2003) study continued to experience

negative affect when faced with strain. In African American samples, individualistic coping strategies, like positive and negative religious coping, have been tied to a variety of negative health outcomes. In other words, the mere use of individualistic problem-focused coping efforts to deal with strain predicts negative affect in this group (Kocot, 2001). This brings into question the benefits of Pargament's (1997) religious coping for African Americans, as does the use of this measure in African Americans, since they were not adequately represented in the sample used for the development and validation of the instrument.

Religious Support in African Americans

Few studies have differentiated social support from religious support in African Americans. For example, Krause's (1999) measure of religious support was derived from traditional social support scales by changing "friends" and "family" to "parishioners" and "congregation members." By definition, religious support is simply the social support received from people connected through one's place of worship. This makes it hard to know whether previous studies examining social support in African Americans were really measuring religious support. For example, three studies that will be reviewed later found that social support predicted prayer (Koenig et al., 1992), religious coping (Steffen, Hinderliter, Blumenthal, and Sherwood, 2001), and spirituality (Brome, Owens, Allen, & Vevaina, 2000) in African Americans. In all likelihood, this is because African American respondents' sources of social support were fellow congregates, thereby making it religious support.

Religious support may better describe what Jang and Johnson (2003) referred to as social support in moderating the relationship between strain and negative affect.

Furthermore, it is questionable whether it is worthwhile to make this distinction in African Americans considering how central religion is in this culture, and how the church continues to be the most prominent social organizing force for African Americans today (Chatters, 2000).

The benefits of social support in African Americans will be explored at length in the following literature review since it was demonstrated by Jang and Johnson (2003) to buffer against both negative affect and deviant coping behaviors. Religious coping only buffered against deviance in African Americans. When available, attention will be devoted to studies using religious support in African Americans for two reasons. For one, religious support is the social support component of religiousness, which is central in the African American experience. Secondly, religious support in African Americans is a more nuanced and culturally competent approach to describing social support (Chatters, 2000). Since many investigators have not differentiated social support by source, studies of social support and religious support in African Americans will be reviewed together. Again, the only difference between the two constructs is whether the source of social support is perceived as being part of the same “church,” which may include anyone, for example, who is known to share protestant, evangelical, or holiness beliefs (Krause, 1999).

The role of social support and religious support in African Americans has been examined as it relates to various types of stress responses. The following sections will review research on the relationship that both social support and religious support have with physical health, alcohol use, suicide, and mental health problems.

Religious support and health. A broad range of studies have examined the benefits of social support and religiosity in relation to how African Americans cope with health problems such as HIV (Song & Ingram, 2002), breast cancer (Hunt, 2001), and hypertension (Livingston, Levine, & Moore, 1991).

Results of a study examining the prevalence of prayer amongst the medically ill in a sample (N=850) of older men supported that African Americans who reported greater social support, plausibly religious support, were more likely to use religion as a coping strategy in response to symptoms than any other group (Koenig et al., 1992). In contrast, Ellison and Taylor (1996) failed to find any significant relationships between social support and the use of religious coping. Despite this incongruity in the literature, there is additional evidence to suggest that strain (i.e., racial discrimination) leads to hypertension and other symptoms when African Americans do not have religious support (Krieger, 1990). As described below, studies that have investigated racial disparities in social support's connection to health outcomes have consistently demonstrated greater health-related benefits for African Americans than Whites.

Steffen et al., (2001) examined the interaction of ethnicity and religious coping on health outcomes such as ambulatory blood pressure. One hundred and fifty-five subjects completed measures of religious coping, depression, anxiety, social support, and health behaviors. Religious coping in African Americans predicted healthier blood pressure. However, they also found a significant relationship between religious coping and satisfaction with social support (probably religious support). Therefore, it is reasonable to believe that the benefits of religious coping on blood pressure hinge on the presence of

religious support in African Americans. An earlier study produced the same findings (Koenig et al., 1992).

Unexpectedly, Ferraro and Koch (1994) did not find any significant differences in the impact of religious support on African Americans' and Whites' health status. The implications of this finding will be discussed later in greater detail. However, by and large, this section offered evidence that social support in African Americans, particularly in a religious context, either directly or indirectly affects positive health outcomes. The next section reviews the impact of religious support on alcohol use in the African American community to provide further evidence of the importance of this coping strategy relative to individualistic coping strategies in offsetting negative affect.

Religious support and alcohol. Drug treatment and prevention studies have also demonstrated the benefits of religious practice. African Americans high in spirituality who received drug and alcohol treatment have better mental health outcomes than those low in spirituality (Brome et al., 2000; Walton, Blow, & Booth, 2001). To further explore this finding, Brome et al. (2000) investigated the function of social support in a sample of 146 African American mothers enrolled in a 15-week family based prevention program for substance abusers. Similar to Koenig et al's., (1992) results, investigators found that mothers high in spirituality were significantly more satisfied with the social support they received from grandparents and friends compared to mothers low in spirituality (Brome et al., 2000). It is reasonable to believe that religious support more appropriately described social support as defined in the study since it varied by respondents' levels of spirituality. The following study further examined substance use outcomes with respect to social support networks.

In a sample of African American adolescents (N=150), perceived social support (as measured by perceived social support from parents and friends) and stress (as measured by the total number of negative uncontrollable life events) explained a significant amount of the variance in alcohol and marijuana use during an initial interview and a follow-up interview six months later (Maton & Zimmerman, 1992). Perceived social support buffered the effects of stress on drug use.

It is crucial to identify cultural differences regarding coping, particularly as they relate to drug and alcohol use, and relapse prevention needs. One reason is that African Americans are more likely to be exposed to drugs and alcohol, and face more difficult social situations than Whites (Walton, Blow, and Booth, 2001). The following is one of the few empirical studies that has examined racial differences in the relationship between social support and alcohol and drug use.

Herd (1996) investigated whether the relationship between religious affiliation and drinking in African Americans is mediated by social contexts and social networks. Using 1984 data from a nationwide population survey of alcohol use, Herd sampled 1,947 African American and 1,777 White men and women and measured to what extent they participated in social networks that consumed alcohol. Findings supported that cognitive and social variables mediated the relationship between religious affiliation and drinking behavior. Specifically, drinking-related social norms and the social context had a greater impact on drinking behavior in African Americans than Whites. This racial disparity between the predictive power and impact of social factors on alcohol and drug use has significant consequences (i.e, drug treatment, drug education, and relapse prevention), and deserves additional empirical investigation.

Suicidal ideation represents an obvious failure to cope with strain. To further explore the evidence supporting the positive impact religious support has amongst African Americans, the following studies that have examined interactions between race and religious support as they relate to suicidal will be reviewed in the next section.

Religious support and suicide. A number of studies have demonstrated an inverse relationship between religious support and suicide amongst African Americans (Nisbet, 1996; Kaslow et al., 1998). Kaslow et al. (2004) recruited 200 African American women and men seeking medical or psychiatric care, and formed four groups: (1) women who presented after a suicide attempt (female attempters, $n = 50$); (2) men who presented after a suicide attempt (male attempters, $n = 50$); (3) women who presented for medical problems with no history of suicidal behavior (female controls, $n = 50$); and (4) men who presented for medical problems with no history of suicidal behavior (male controls, $n = 50$). Subjects completed a measure of religiosity adapted from Levine et al.'s (1995) investigation of religious involvement in African Americans, which assesses organizational, non-organizational, and subjective religiosity. In addition, a measure of ethnic identity designed to assess social factors such as ethnic affirmation, belonging, and other-group orientation was administered. Kaslow et al. (2004) reported that African American suicide attempters had lower levels of religiousness/ spirituality and felt less connected and affirmed by their own ethnic group compared to controls. This finding supports the salience of religiosity, but also addresses the importance of group connectedness for African Americans in offsetting negative affect.

In an earlier study, Marion and Range (2003) sampled 300 African American female undergraduate psychology students and administered The Religious Problem

Solving Scale-Shortened Form (Pargament et al., 1988), and the Perceived Social Support Family, and the Perceived Social Support Friend questionnaires (Procidano & Heller, 1983). Similar to the results of Kaslow et al. (2004), religious support in African Americans, as measured by a collaborative religious problem solving style, emerged as a significant predictor of the variance in suicidal ideation scores (17%). Suicidal ideation scores were measured by the Suicide Opinion Questionnaire (Domino, Moore, Westlake, & Gibson, 1982).

Also, suicidal ideation was positively correlated with self-directing religious problem solving in African Americans. In other words, individual religious coping efforts predicted high levels of suicidal ideation. Others have found that greater participation in religious activities and higher levels of spirituality were related to lower use of self-directing religious problem-solving styles in African American college students (Constantine, Wilton, Gainor, Lewis, & 2002). Taken together, there is a pattern supporting that in African Americans, religious support is a better predictor than individualistic problem-focused coping styles. This is consistent with the historical development and reliance on the church in response to Africa Americans' earliest sources of strain (i.e., slavery and current day racism and discrimination).

Far fewer Whites report the frequency of collaborative religious problem solving that African Americans endorse (Schafer & Gorsuch, 1993). To further support this point, Thompson, Kaslow, and Short (2002) found that even the long-established inverse relationship between self-efficacy and suicide attempts loses statistical significance in African Americans once social support factors (i.e., perceived friend and family support) are controlled. Among Whites, more individualistic strategies (i.e., negative appraisal of

one's problem-solving capacity and poor interpersonal problem-solving skills) mediated the relationships between low self-esteem/ self-efficacy and suicide attempts (Dieserud, Roysamb, Ekeberg, & Kraft, 2001).

Therefore, there is somewhat of a pattern supporting an interaction between race and religious support in offsetting negative affect. African Americans appear to utilize and benefit from collaborative problem solving styles more than Whites, who regularly appear to engage in individualistic coping behaviors. This pattern is further supported in the following review of the impact of social support on mental-health outcomes in the African American community, and further supports the importance of religious support relative to individualistic coping strategies in offsetting negative affect.

Religious support and mental health. Lincoln, Chatters, and Taylor (2003) used data from the National Comorbidity Survey, consisting of 4,003 Whites and 549 African Americans (ages 15-24) to examine any racial differences between the impact of social support and personal control on psychological distress. Psychological distress was measured by four items: feeling blue, having no interest in things, difficulty concentrating, and feeling everything requires effort. Social support was measured by three items: relatives understand my feelings, relatives appreciate me, and relatives can be relied upon. Personal control was measured by four items: lives determined by own actions, ability to make plans that work, working hard results in success, and ability to protect one's own interests.

Notably, for African Americans support was associated with lower psychological distress. Furthermore, high levels of negative interactions with relatives predicted low levels of personal control. This suggests that in African Americans, even personal

control is influenced by one's social network. Neither of the above relationships was supported among Whites (Lincoln, Chatters, & Taylor, 2003). The results highlight clear cultural differences in the predictive power of support on psychological distress. Since the study did not account for the sources of social support, it is possible that religious support better explains the results.

There is a substantial degree of psychological distress experienced by caregivers of family members with dementia. Adams et al. (2002) sampled 202 White, African American, Japanese-American, and Mexican-American spousal caregivers. African Americans were more likely to rely on religious coping (i.e., prayer) and have more social support available to them. Furthermore, African American spousal caregivers had the lowest averages of psychiatric and depressive symptoms in the sample (Adams et al., 2002).

These findings are consistent with previous literature that has examined African American caregivers of family members with dementia (Segall & Wykle, 1988; Segall & Wykle, 1999; Wood & Parham, 1990). However, they initially appear somewhat inconsistent with the findings reviewed thus far that suggest individualist coping strategies, such as prayer, predicts negative adjustment. It is important to bear in mind that the centrality of religiousness and spirituality in the African American culture relative to the other groups in the sample would suggest African Americans would be higher in even individual religious observances (i.e., prayer). However, when it comes to predicting adjustment, religious support appears to be superior to religious coping according to the studies reviewed thus far.

Friedman and Paradis (2002) conducted a review of the phenomenology of Panic Disorder, specifically in African Americans. There appears to be a great deal of consensus that African Americans with Panic Disorder are more likely to use religion as a general coping strategy and are more dissatisfied with their social relationships than Whites (Smith, Friedman, & Nevid, 1999). Interestingly, it is possible that religious coping in the absence of adequate religious support exacerbates Panic Disorder symptoms in African Americans. It is also possible that Panic Disorder symptoms lead to actual or perceived negative perceptions of one's social relationships. This second possibility was explored in later work conducted by Kocot (2001).

Amongst African Americans, tangible and emotional social support, as opposed to perceived social support, mediated the relationships between domestic violence and post traumatic stress disorder (PTSD) symptoms and depression. High tangible social support buffered the impact of domestic violence on PTSD symptoms and depression. Interestingly, Kocot (2001) also concluded that in African Americans, there is an interaction between problem-focused coping strategies and religious support on mental health outcomes. Specifically, he concluded that high support in the presence of high problem focused coping styles better predicted positive mental health outcomes in African Americans. Low support and high problem-focused coping efforts did predict mental health outcomes. Again, it appears that even individual coping strategies hinge on the presence of high support in African Americans.

In sum, investigators have consistently found that the predictive ability of both social and religious support on mental health outcomes is stronger for African Americans than Whites (Friedman & Paradis, 2002; Smith, Friedman, & Nevid, 1999). It is less

clear in African American samples exactly how much reported social support could be better explained by religious support. Nonetheless, the review demonstrated the well established interaction by race and support (religious and social) in offsetting negative affect and deviant responses to strain.

Religious Support versus Religious Coping

Predictive ability of social support. The differences between African American and White church goers noted thus far support the likelihood that differences exist between how religiosity is used as a coping strategy across race (i.e., garnering social support, or promoting personal control) (Traugher, 2001). For example, Krause (2002) assessed 752 African American and 748 Whites for differences in church based social support. Whites reported that their congregations are less cohesive and receive less spiritual and emotional support when compared to African Americans. Notably, African Americans felt closer to God than Whites solely because of the indirect effects that operate through these key social variables (Krause, 2002).

These results support the possibility that African Americans have greater connectedness than Whites with respect to social religiosity. Given that African Americans feel closer to God solely through social variables (Krause, 2002), it is plausible that they use more religious support to offset negative affect (Blaine & Crocker, 1995; and Jagers & Smith, 1996). In Jang and Johnson's (2003) investigation of GST, social support (having family in close proximity), not religiosity, was found to significantly reduce the effect of strain on negative affect. This is consistent with the preceding literature review and the significance of the African church and its development in the African American community.

Predictive ability of religious coping. Cultural differences exist in the value of individualistic coping strategies across race. In African Americans, problem focused, individualistic coping strategies were shown to do more harm than good in the preceding literature review. Furthermore, the review suggested that even individualistic coping strategies used by African Americans hinge on the presence of social variables (Kocot, 2001; Steffen, Hinderliter, Blumenthal, & Sherwood, 2001). Therefore, if Jang and Johnson's (2003) findings concerning highly religious African Americans resulted from an interaction between level of religiousness and negative religious coping, then it is arguably attributable to religious coping's individual, versus group orientation. Lastly, considering that the development and validation of Pargament's (1998) measure of religious coping (RCOPE) used a college sample that was primarily White (93%), and was confirmed using a smaller hospital sample that was 62% White, the predictive value of the RCOPE on adjustment in African Americans is questionable.

PURPOSE AND RATIONALE OF STUDY

The literature supports that African Americans are susceptible to more strain than Whites in view of the historical and present day racial inequality in America (Agnew, 1992). Out of this milieu was birthed the African church, which has historically been the most important social institution and organizing force in this group (Poole, 1990). This, and the findings reviewed from the general social support literature, suggests that religious support within the African community is an obvious place to begin examining how African Americans offset negative affect caused by strain.

Religious and spiritual involvement was found to buffer against life stress in a sample of African Americans (Krause, Neal, Van Tran, and Thanh, 1989) and is widely believed to represent an important coping and support mechanism for many African American college students (Bowen, 1999; Brown, 1998; Constantine et al., 2000). Additionally, the homicide rate and the number of African Americans under the supervision of the criminal justice system between the ages of fifteen and twenty-four theoretically suggest that the ages most embark on higher education is a period where African American youth may be encountering the highest level of strain they have experienced thus far. This justifies an in-depth investigation of how the church and religion specifically functions in African American college students to offset strain as identified by life stress.

A number of studies support that African Americans compared to Whites experience greater benefits from religious support. This is not to say that religious support has no benefits for Whites (Ferraro & Koch, 1994). However, in African Americans, religious support, relative to religious coping (Pargament, 1998), is likely to be a better predictor of adjustment. In Whites, religious support, and religious coping are likely to be similar predictors of adjustment. Although, these interactions across race are interesting and have implications related to treatment and prevention, further steps need to be taken to ascertain how well religious support functions as a coping strategy in African Americans to reduce the impact of strain on adjustment. If religious support is in fact a better predictor of adjustment for African Americans, then religious support should be a relatively stronger moderator than religious coping of the relationship between life stress and adjustment (negative affect, subjective well-being, and alcohol use and problems).

Specifically, the hypotheses of the proposed study are:

1. In African American students: relative to religious coping, religious support will be a better predictor of adjustment.
2. In White students: relative to religious coping, religious support will be a comparable predictor of adjustment.
3. In African American students: relative to religious coping, religious support will be a stronger moderator of the effects of life stress on adjustment.
4. In White students, both religious coping and religious support will moderate the effects of life stress on adjustment.

METHODS

Design

A correlational design was used to test for the moderator effects of race on the relationship between religious coping style and adjustment in response to life stress. Specifically, the hypotheses were tested by examining differences between African Americans and Whites in the relationships adjustment has with religious support and religious coping (positive and negative). Both African American and White participants' responses to a self-report questionnaire including measures of religious coping, religious/spiritual social support, stressful life events, and gender, which comprise the study's independent variables, were examined to see if they differentially predicted aspects of adjustment, the dependent variable. Adjustment measures included alcohol use and problems, spiritual well-being, satisfaction with life, psychological distress, and meaning and peace.

It was expected that in African Americans, the relationship between life stress and adjustment would be weaker for participants scoring higher on religious/spiritual support, but not for participants scoring higher on positive religious coping. Similarly, it was expected that in Whites, the relationship between life stress and adjustment would be weaker for participants scoring higher on religious/spiritual support, but also for participants scoring higher on positive religious coping. Furthermore, additional analyses

were conducted to rule out multicollinearity between religious support and religious coping subscales.

Participants

The data for the proposed study came from Johnson, Kristeller, and Sheets' (2004) longitudinal study on the effects of religiousness and spirituality on college student alcohol use and problems over time. This investigation, conducted at Indiana State University (ISU), collected data at three time points. The initial wave (W1), collected during the summer of 2002, was comprised of 76% of ISU incoming first year students. In total, data were collected from 1534 students (891 women and 643 men) at this time point. One thousand three hundred and twenty five students or 86 percent of the total sample were White (764 women and 561 men), and 127 students or 8 percent were African American (81 women and 46 men). Wave two (W2), collected during spring 2003 was comprised of 787 students or 51% of wave one respondents (536 women and 251 men). Six hundred and seventy six students or 86 percent of the total sample at this time point were White (466 women and 210 men), and 71 students or 9 percent were African American (48 women and 23 men). Wave three (W3), collected during spring 2004 was comprised of 913 students or 60 percent of wave one respondents (597 women and 316 men). Seven hundred and eighty nine students or 86 percent of the total sample at this time point were White (517 women and 272 men), and 76 students or 8 percent were African American (53 women and 23 men). Increased retention at W3 was achieved by pre-notification mailings, a goodwill offering of a free movie rental coupon, and a 25 dollar incentive for all participants.

Some analyses in the current study included all respondents who completed a given wave, while other analyses only included participants who completed multiple waves (e.g., W1 and W2, W2 and W3, etc.). Seven hundred and eighty seven respondents completed both W1 and W2 (536 females and 251 males). Nine hundred and thirteen respondents completed both W1 and W3 (597 females and 316 males). Six hundred and twenty nine respondents completed both W2 and W3 (444 females and 185 males). Six hundred and twenty nine respondents completed all three waves. Participants at W1 were between 18.17 and 18.88 years, on average.

Measures of Religious Support and Religious Coping

The following is a description of the measures of religious coping and religious support included in all three waves of Johnson et al.'s (2004) study. In the current study, these measures were examined as predictors of adjustment in both African Americans and Whites, and compared for any differential impact on the relationship between stress and adjustment across race.

Brief RCOPE (Pargament, 1999; Pargament et al., 1998). The brief RCOPE is a measure of two forms of religious coping, referred to as positive and negative religious coping (see Appendix B). The original Brief RCOPE was validated on a sample of friends and family of Oklahoma City bombing victims. Positive religious coping was characterized by benign religious participation in the search for meaning. Negative religious coping was characterized by religious conflict and struggle in dealing with the situation. Both subscales had good internal consistency, with coefficient alphas of .87 and .78 for the positive and negative scales, respectively. No correlation was found between these scales ($r=.03$) and they differentially predicted measures of adjustment

(Ano & Vasconcelles, 2005). Johnson et al. (2004) used a 10 item version of the Brief R-COPE (Pargament, 1999) containing 5 positive and 5 negative religious coping items. The response options ranged from 1 (“A great deal”) to 4 (“Not at all”) to questions such as, “I try to find lessons from God in crisis,” and “I wonder whether God has abandoned me.”

Religious/Spiritual Social Support Scale (Krause, 1999). This measure of religious support was included in all three waves of Johnson, Kristeller, and Sheets’ (2007) study (see Appendix C). The original Religious/Spiritual Social Support Scale, both long and short form, had four subscales: (1) emotional support received from fellow parishioners, (2) emotional support given to others in the congregation, (3) negative interaction with fellow believers, and (4) anticipated support. These subscales have been derived from secular support measures.

Johnson et al. (2007) used 3 items on the negative interaction subscale of the Religious Support-Long Form and 2 items each from the emotional support and anticipated support subscales of the Religious Support-Short Form. Exploratory Principle Components Analysis of the 7 items revealed a two factor structure for positive (4 items) and negative (3 items) religious social support (Johnson et al., 2007). Negative religious support was characterized by contact with members in one’s congregation that was aversive or unpleasant. In contrast, positive religious support was characterized by perceived closeness with congregation members and the perceived degree of assistance congregation members would be willing to provide (Johnson et al., 2007). Only the positive support scale was included in the current study. Response options ranged from 1 (“Never” or “None”) to 4 (“Very often” or “A great deal”) to questions such as, “How

often do people in your congregation take advantage of you,” and “How often do people in your congregation make you feel loved and cared for?”

Life Events Questionnaire (LEQ)

Johnson, Kristeller and Sheets (2005) adapted the LEQ (Brugha & Cragg, 1990) to measure the degree of stress respondents recently experienced (see Appendix D). Items that mentioned spouse or career were changed to girlfriend/ boyfriend and college, respectively. The measure consisted of eleven items (rated from 1=strongly disagree to 7=strongly agree) that refer to a variety of negative life events. According to Brugha & Cragg, (1990), test-retest reliability over a three month time period was high (.84). The original measure was validated using a sample of psychiatric inpatients. Inpatients' reports of stressful life events using the LEQ were found to be in high accord with reports of their significant others (90%) (Brugha & Cragg, 1990).

Measures of Adjustment and Well-Being

Several indicators of adjustment were used to examine differences in the impact of stress as a function of religious support and religious coping across race. Not all measures were available at all waves. The following is a description of each of these measures and the waves they were included in Johnson et al.'s. (2007) study, along with a description of how they were used in the current study.

Alcohol Use. Johnson et al. (2007) gathered data across a number of drinking-related variables indicative of patterns of alcohol use. At W1, respondents were to report drinking for the past calendar year. At W2 and W3, respondents were to report drinking for the current school year. One “drink” was equal to one beer or wine cooler (12 ounces), one glass of wine (4 ounces), or one shot of liquor (1 ¼ ounces) (see Appendix

E). Data was gathered on respondents' typical drink quantity, or the number of drinks typically consumed per month or per week (options ranged from "None" to "19 or more" drinks). Respondents were also asked about their typical drink frequency, or the number of drinking episodes they had per week or per month (options ranged from "Never" to "Six or seven days per week"). Drinking frequency and quantity were multiplied in order to get an approximation of the number of drinks respondents consumed per week. In addition, at W2 and W3, respondents reported their weekly frequency of heavy drinking or binge drinking (5 or more drinks for men, and 4 or more drinks for women). Finally, concerning alcohol use, data were gathered on respondents' peak drinking, or the most drinks they consumed during any one drinking occasion.

Young Adult Alcohol Problems Screening Test (YAAPST; Hurlbut & Sher, 1992).

The YAAPST is a 27-item questionnaire administered at all three waves that assesses frequency of alcohol-related problems in young adults (see Appendix F). The measure was validated in a sample of freshman college students (N=490). According to Hurlbut and Sher (1992), test items were highly correlated and the measure had good internal consistency and test-retest reliability at a one year follow-up. In addition, results supported the criterion validity, concurrent validity, and construct validity of the instrument (Hurlbut & Sher, 1992). Johnson et al. (2007) developed a shortened version of the YAAPST (15 items), which all students completed. This version was found to be highly correlated with the original (Johnson et al., 2007b).

Functional Assessment of Chronic Illness Therapy- Spiritual Well-Being (FACIT-Sp) (Peterman, et al, 2002). The FACIT-Sp is a measure of spirituality administered at all three waves and was designed to avoid confounds of religious beliefs and health status

(see Appendix G). The measure was validated on a sample of chronically-ill patients ($N=1,617$) and was found to have a two factor structure, which formed the Meaning and Peace (feelings of purpose and inner peace) and Faith (sense of comfort and assurance from one's faith) subscales of the measure. In Johnson, Kristeller, and Sheets (2007b), the faith subscale loaded on general religiousness rather than well-being. Therefore, it was not used in the current study. However, the internal consistency of these two subscales were high ($\alpha=.81$ and $.88$, respectively) and results supported the criterion validity and concurrent validity of the instrument (Peterman, et al., 2002).

According to Peterman et al. (2002), FACIT-Sp scores had a relationship with scores on a measure of depression in the expected direction $F(2, 1586)=186.98, p=.0001$. Also, there was a moderate correlation between the FACIT-Sp and the FACIT-G ($r=.58$), which measures health related quality of life. Furthermore, as expected based on previous literature, there was a negative correlation ($r=-.48$) between the FACIT-Sp and the depression subscale of the Profile of Mood States, which is a widely used scale for measuring subjective mood states (Peterman et al., 2002). A third factor called connectedness emerged during Peterman et al.'s (2002) analysis but went unpublished because it was confounded by religion. Specifically, the subscale identified feelings of fellowship with God and aspects of spiritual union with people, such as experiencing compassion, thankfulness, and forgiveness. The subscale was evidenced to have good internal consistency, which Johnson et al. (2007b) found to be greater than $.81$. Johnson et al. (2007) developed brief versions of all three scales, which all had good internal consistency ($\alpha > .81$), scored from 1-5 (1= "Not at all/ disagree" and 5= "Very Much"), which all students completed.

Satisfaction with Life Scale (SWLS; Diener, Larsen, & Griffin, 1985). At waves 2 and 3, Johnson et al. (2004) collected data on respondents' perceptions of life satisfaction using the five items of the SWLS (with response options ranging from 1 = "Strongly disagree" to 7 = "Strongly agree"). This scale was created to measure the cognitive-judgmental process of life satisfaction. During validation, the 48-item scale was reduced to five items by deleting those items that were semantically similar, had correlations of less than .60 with other items that loaded on satisfaction, and that loaded on positive and negative affect, rather than satisfaction, in the three factor solution (Johnson et al., 2007b) (see Appendix H). This produced a single factor that accounted for 66% of the variance in a sample of college students ($N=176$) (Johnson, et al., 2007b). Furthermore, the test-retest reliability (.82) and the internal consistency (.87) were high over a two month time period (Johnson et al., 2007b).

Psychological Distress Scale (Davis & Smith, 1991). Johnson et al. (2004) collected data at all three waves on psychological distress respondents had experienced in the past 30 days using a 10-item scale of psychological symptoms developed by Davis and Smith (1991). The response set ranged from 1-5 (1= "None of the time" and 5= "All of the time") to psychological symptoms such as nervousness, hopelessness, and irritability (see Appendix I).

Existential Vacuum subscale of the Life Attitude Profile (Reker & Peacock, 1981). The Existential Vacuum subscale from the Life Attitude Profile (LAP) was administered at all three waves and was used as a measure of adjustment (see Appendix J). The scale was designed to assess motivation to find meaning in life, and success at finding such meaning or purpose in life. The Existential Vacuum subscale of the LAP included 7

items assessing a subjective sense of failure in the search for meaning (i.e., “I feel the lack of real meaning and need to find a purpose in my life,” “I try new activities or areas of interest and then these soon lose their attractiveness,” etc.). In a factor analysis of 29 measures of religiousness and spirituality, Johnson et al. (2007b) found that Existential Vacuum loaded inversely on a factor they labeled Spiritual Well-Being. This factor also included the Meaning & Peace and Connectedness subscales of the FACIT-Sp (see above).

Creation of Adjustment Composite Scores. To identify which measures of well-being and adjustment might be meaningfully combined, we conducted a series of exploratory Principal Components Analyses (PCA). Separate analyses were conducted for African Americans and Whites and for each wave of data. Variables were converted into z scores since it was necessary to use the same metric for computing composite scores at each wave. Again, since separate analyses were conducted for African Americans and Whites, the unique means and standard deviations of both groups were used to compute their respective z scores.

The pattern of results between African Americans and Whites was similar at Waves 1 and 2, but different at Wave 3. At Wave 1, we found three unique factors (corresponding to positive Well-Being, Negative Well-Being, and Alcohol Use and Problems) for White and African American students. Two unique factors were found at Wave 2 (corresponding to global well-being and alcohol use and problems) for White and African American students. Negative Affect and Existential Vacuum loaded inversely on the positive well-being factor. However, for African Americans at Wave 3 a three factor solution emerged with Satisfaction with Life loading inversely on negative well-being

and Meaning and Peace cross loading on negative and positive well-being. When Satisfaction with Life was removed from the analysis the same three factor solution found in wave 1 emerged (positive Well-Being, Negative Well-Being, and Alcohol Use and Problems). For Whites at wave 3 the same 2 factor solution found in wave 2 emerged (Well-being and alcohol use and problems) with or without Satisfaction with Life being included in the analysis.

Given the above, we elected to create five variables for use in subsequent analyses: 1) Positive Well-Being (Meaning and Peace, Connectedness, and Satisfaction with Life); 2) Negative Well-Being (Negative Affect and Existential Vacuum); 3) Global Well-Being (composite of Positive Well-Being and Negative Well-Being, with Negative Well-Being reverse scored); 4) Alcohol Use; and 5) Alcohol Problems. The reason we elected to examine alcohol use and problems separately in the current study, even though they loaded on the same factor, is because they are known to have different correlates. According to Cooper, Frone, Russell, and Mudar (1995), alcohol problems is often more closely related to negative well-being and coping than alcohol use. With the exception of Global Well-Being, all variables were computed at each wave. Global Well-Being was only computed at W2 and W3, because this factor only emerged at these waves in the PCA's described above.

Computation of change scores. To examine how changes over time in predictor variables impacted the above criterion variables, change scores were computed for several dependent variables. Computation of change scores on the above composite variables required using variables with the same metric at each wave. Therefore, to compute the change scores we elected to modify the above composites by only including

measures of adjustment that had the same Likert Scale metric in the calculation of change scores: 1) Positive Well-Being (Meaning and Peace and Connectedness); 2) Negative Well-Being (Negative Affect); 3) Global Well-Being (The difference of Positive Well-Being and Negative Well-Being); and 4) Drinks per week; and 5) Alcohol Problems. It was unnecessary to convert these measures into z-scores since only measures of adjustment with the same Likert Scale were used.

ANALYSIS PLAN

The primary predictors of adjustment were positive religious support and positive religious coping. The primary indicator of stress was stressful life events reported on the LEQ.

Hypotheses 1 & 2

Hypothesis 1 was that in African American students, religious support would be a better predictor of adjustment than positive religious coping. Hypothesis 2 was that in White students, religious coping and religious support would be comparable predictors of adjustment. These two hypotheses were tested using a series of multiple regression analyses, with gender, positive religious support, and positive religious coping as predictors of adjustment. Gender was included because it is correlated with measures of religiousness and measures of adjustment. Separate regressions were performed for African American and White students and for each of the indicators of adjustment (i.e., Positive Well-Being; Negative Well-Being; Global Well-Being; Alcohol Use; & Alcohol Problems).

The sample includes multiple waves of data with both predictors (religious support and religious coping) and criterion variables (adjustment) available at each wave. This allowed for multiple ways to conduct the regressions described above. The data were analyzed cross-sectionally by using both predictors and criterion from the same

wave. In addition, in some analyses predictors from earlier waves were used to predict adjustment at later waves while controlling for adjustment at the earlier wave (e.g., adjustment, religious support, and religious coping from W1 predicting adjustment at W2, etc.). Finally, changes in predictor variables from one wave to another were used to predict change in criterion variables (e.g., change in religious coping and religious support from W1 to W2 predicting change in adjustment from W2 to W3). No adjustment of p values was performed since such an adjustment may have eliminated any ability to detect any effects considering the low N in the African American sample. However, given the inflated alpha resulting from the large number of analyses conducted, the overall pattern of results was examined as a basis for drawing conclusions. This included comparing results for each wave of analyses and computing mean beta values for given sets of predictors and outcomes. It was anticipated that in the African American students, the beta values for religious support would be higher than the betas for religious coping. In White students, it was anticipated that the beta values for religious coping and religious support would be more similar.

Hypotheses 3 & 4

Hypothesis 3 was that in African American students, relative to religious coping, religious support would be a stronger moderator of the effects of life stress on adjustment. Hypothesis 4 was that in White students, both religious support and religious coping would moderate the effects of life stress on adjustment. Both of these hypotheses were tested using hierarchical regressions as outlined by Baron and Kenny (1986). Separate series were run for African American and White students, using data from W2 and W3 (the Life Stress variable was not collected at W1). In the first step we entered

gender, main effects (i.e., stress, religious coping, and religious support), and the criterion variable's value from the previous wave (e.g., if the criterion was W2 alcohol use, W1 alcohol use was entered in Step 1). In the second step we entered interaction terms (i.e., life stress by religious support, life stress by religious coping, and religious coping by religious support). Significant interaction terms were probed using simple slopes analyses as outlined by Aiken and West (1991). If more than one interaction term from a given interaction was significant, each interaction was probed separately. This procedure allowed us to determine the direction of a moderation effect.

It was anticipated that in African American students, the interaction between religious support and life stress would be significant, while in White students, both interaction terms would be significant. It was also anticipated that for each significant interaction, simple slopes analysis would reveal a buffering effect. That is, higher levels of the moderator would reduce the effect of life stress on adjustment. For the most part, interactions that achieved a significance level of $p < .10$ were probed in African Americans and in Whites. However, due to the limited power in the African American sample, an interaction of $p < .15$ was probed to get a better understanding of the overall consistency of results.

RESULTS

Table 1 provides the means, standard deviations, and simple t-test comparisons of African Americans and Whites on measures of positive religious support and positive religious coping. African Americans reported higher levels of religious support and coping than Whites at all three waves. This is consistent with the majority of studies supporting that African Americans report higher levels of religiosity (Taylor, 1988), rely on prayer more than Whites (Gomberg & Nelson, 1995), and score significantly higher than Whites on measures of intrinsic religiosity (Benson et al., 1986).

Table 1

Comparison of Means and Standard Deviations of Support and Coping by Race

| | <u>African Americans</u> | | | <u>Whites</u> | | | t | df |
|------------------------|--------------------------|------|-----|---------------|------|------|----------|--------|
| | Mean | SD | N | Mean | SD | N | | |
| W 1 Pos Religious Supp | 3.07 | .86 | 122 | 2.52 | 1.00 | 1278 | 6.62**** | 157.00 |
| W 2 Pos Religious Supp | 2.85 | .97 | 70 | 2.46 | 1.00 | 675 | 3.18** | 85.12 |
| W 3 Pos Religious Supp | 2.87 | 1.00 | 74 | 2.38 | 1.07 | 787 | 3.98**** | 89.47 |
| W 1 Pos Religious Cop | 2.88 | .78 | 122 | 2.24 | .81 | 1278 | 8.74**** | 148.00 |
| W 2 Pos Religious Cop | 3.04 | .71 | 70 | 2.41 | .80 | 675 | 6.94**** | 88.39 |
| W 3 Pos Religious Cop | 2.95 | .80 | 74 | 2.41 | .80 | 789 | 5.61**** | 87.08 |

Note. †: p<.10; *: p<.05; **: p<.01; ***: p<.001; ****: p<.0001, Pos=Positive, Supp=Support, Cop=Coping.

Table 2 provides the means, standard deviations, and simple t-test comparisons of African Americans and Whites on the measure of life stress respondents completed at W2 and W3. No significant differences were found between the amount of life stress reported by African Americans and Whites at W2. However, Whites reported experiencing significantly more life stress at W3.

Table 2

Comparison of Means and Standard Deviations of Stress Measure by Race

| | <u>African Americans</u> | | | <u>Whites</u> | | | t | df |
|--------------------|--------------------------|------|----|---------------|-----|------|--------|-------|
| | Mean | SD | N | Mean | SD | N | | |
| Wave 2 Life Stress | 3.66 | 1.13 | 70 | 3.82 | 676 | 1.09 | -1.23 | 744 |
| Wave 3 Life Stress | 3.56 | 1.24 | 74 | 3.87 | 783 | 1.18 | -2.09* | 85.98 |

Note. †: $p < .10$; *: $p < .05$; **: $p < .01$; ***: $p < .001$; ****: $p < .0001$.

Table 3 provides the means, standard deviations, and simple t-test comparisons of African Americans and Whites on measures of alcohol consumption and problems. Similar to findings of previous studies examining drinking patterns across race, African Americans' means on all five measures of drinking (consumption, frequency, peak, binge, and problems) were less than Whites. These differences were significant across all three waves for all alcohol variables with the exception of binge drinking and W3 drinking frequency. Notably, the level of statistical significance between African American and White respondents' reported drinking frequencies and drinking problems steadily decreased from W1 to W3.

Table 3

Comparison of Means and Standard Deviations of Alcohol-Related Variables by Race

| | <u>African Americans</u> | | | <u>Whites</u> | | | t | df |
|----------------------|--------------------------|------|-----|---------------|------|------|------------|--------|
| | Mean | SD | N | Mean | SD | N | | |
| W1 Typical Quantity | 1.51 | 2.11 | 123 | 3.48 | 3.25 | 1312 | -9.34**** | 181.28 |
| W2 Typical Quantity | 2.44 | 2.72 | 70 | 3.42 | 3.11 | 677 | -2.81** | 88.79 |
| W3 Typical Quantity | 2.34 | 2.72 | 74 | 3.58 | 3.04 | 788 | -3.72**** | 91.03 |
| W1 Typical Frequency | .27 | .57 | 122 | .56 | .83 | 1314 | -5.17**** | 172.11 |
| W2 Typical Frequency | .58 | .99 | 70 | .82 | 1.12 | 677 | -1.91* | 88.42 |
| W3 Typical Frequency | .69 | 1.27 | 74 | .85 | 1.16 | 789 | -1.14 | 861 |
| W1 Peak Drinking | 2.54 | 3.81 | 123 | 6.36 | 5.92 | 1314 | -10.03**** | 182.27 |
| W2 Peak Drinking | 4.16 | 4.56 | 70 | 6.39 | 5.77 | 677 | -3.80**** | 93.45 |
| W3 Peak Drinking | 4.23 | 4.69 | 74 | 6.67 | 5.73 | 85 | -4.19**** | 94.82 |
| W2 Binge Frequency | .40 | .97 | 70 | .53 | .97 | 677 | -1.06 | 745 |
| W3 Binge Frequency | 2.44 | 2.72 | 74 | 3.42 | 3.11 | 777 | -.92 | 849 |
| W1 Drinking Problem | .17 | .36 | 126 | .44 | .63 | 1321 | -7.39**** | 208.74 |
| W2 Drinking Problem | .43 | .65 | 70 | .60 | .79 | 677 | -2.11* | 91.72 |
| W3 Drinking Problem | .46 | .70 | 74 | .60 | .80 | 790 | -1.62† | 91.67 |

Note. †: $p < .10$; *: $p < .05$; **: $p < .01$; ***: $p < .001$; ****: $p < .0001$.

Table 4 provides the means, standard deviations, and simple t-test comparisons of African Americans and Whites on measures of adjustment. African Americans reported significantly higher levels of meaning and peace than Whites at all three time points. In addition, they reported significantly higher levels of connectedness compared to Whites at all three time points, which is consistent with African Americans' group cultural orientation. Means for satisfaction with life, existential vacuum, and negative affect across race were not significantly different at any time point.

Table 4

Comparison of Means and Standard Deviations of Well-Being-Related Measures by Race

| | <u>African Americans</u> | | | <u>Whites</u> | | | t | df |
|----------------|--------------------------|------|-----|---------------|------|------|----------|--------|
| | Mean | SD | N | Mean | SD | N | | |
| W1 Mean & Peac | 4.17 | .73 | 120 | 3.77 | .86 | 1284 | 5.66**** | 151.60 |
| W2 Mean& Peac | 4.03 | .97 | 70 | 3.64 | .99 | 678 | 3.23** | 84.61 |
| W3 Mean & Peac | 4.09 | .80 | 74 | 3.70 | .92 | 789 | 3.92**** | 91.93 |
| W1 Connect | 4.33 | .70 | 120 | 3.98 | .80 | 1276 | 5.27**** | 149.34 |
| W2 Connect | 4.22 | .72 | 70 | 3.87 | .90 | 678 | 3.76**** | 92.53 |
| W3 Connect | 4.26 | .72 | 74 | 3.90 | .81 | 789 | 4.08**** | 90.93 |
| W2 SWL | 4.18 | 1.25 | 70 | 4.19 | 1.27 | 675 | -.101 | 743 |
| W3 SWL | 4.47 | 1.50 | 74 | 4.37 | 1.38 | 781 | .602 | 853 |
| W1 Neg Aff | 1.90 | .70 | 120 | 1.87 | .59 | 1266 | .469 | 1384 |
| W2 Neg Aff | 1.80 | .65 | 70 | 1.93 | .63 | 678 | -1.60 | 746 |
| W3 Neg Aff | 1.86 | .60 | 72 | 1.90 | .67 | 788 | -.572 | 858 |
| W1 Exist Vac | 3.35 | 1.34 | 120 | 3.32 | 1.27 | 1266 | .22 | 1384 |
| W2 Exist Vac | 3.55 | 1.47 | 70 | 3.41 | 1.36 | 678 | .79 | 746 |
| W3 Exist Vac | 3.70 | 1.38 | 72 | 3.44 | 1.33 | 788 | 1.58 | 858 |

Note. †: $p < .10$; *: $p < .05$; **: $p < .01$; ***: $p < .001$; ****: $p < .0001$, Mean & Peac= Meaning and Peace, Connect= Connectedness, SWL= Satisfaction With Life, Neg Aff= Negative Affect, Exist Vac= Existential Vacuum.

Appendixes K through Q display the results of several correlation analyses between predictor variables (religious support and religious coping), alcohol variables, and well-being variables. Religious support and religious coping were significantly related at all 3 time points. All correlations were statistically significant regardless the waves from which support and coping were compared (i.e., W1 support with W3 coping, etc.). As would be expected, all alcohol-related variables were significantly correlated and all well-being-related variables were significantly correlated. Again, this held true regardless of the waves from which support and coping were compared.

In African Americans, W1 use/problems and later positive religious coping had a stronger inverse relationship that seen in Whites. Later, the potential impact of other variables in determining this relationship will be explored. In whites, there was consistency between alcohol use/problems at earlier waves and positive religious support at later waves, which were inversely related. This was not the in African Americans, whose alcohol use/problems were largely unrelated to later religious support (except for the relationship between W1 use and W2 support). There was also an unexpected absence of a significant relationship between W2 stress and alcohol use/problems at W2 I African Americans.

Hypotheses 1 and 2 were tested using a series of multiple regression analyses. Separate regressions were preformed for African American and White students using gender, positive religious support, and positive religious coping as predictors of adjustment criterions at each Wave. W1 predictors were used to predict W1, W2, and W3 criterions; W2 predictors were used to predict W2 and W3 criterions; and W3 predictors were used to predict W3 criterions (for a more detailed summary of the results of these regressions, see Appendix O, P, and Q which respectively correspond to regression analyses using W1, W2, and W3 predictors, and a table summarizing the mean beta values across these regressions).

Table 5 provides the results of regression analyses using W1, W2, and W3 predictors. In African Americans, W1 religious support was a statistically significant predictor of all criterions at W1 (inc., alcohol use, alcohol problems, positive well-being, and negative well-being), and W2 (inc., alcohol use, alcohol problems, and well-being). With the exception of W3 alcohol use, W1 religious support did not significantly predict

any W3 criteria (inc., alcohol problems, well-being, positive well-being, and negative well-being). Alcohol use was the only criterion predicted by W1 religious support at all three time points, followed by alcohol problems at two time points. All of these significant relationships were in the expected direction.

As seen in Table 5, W1 religious coping was a statistically significant predictor of far fewer outcomes than W1 religious support. W1 religious coping predicted positive well-being at both time points this criterion was used (W1 and W3) in the expected direction. It did not predict W1, W2, or W3 alcohol use or problems. It also did not predict W2 or W3 well-being, or W3 negative well-being.

Table 5 also provides the results of regression analyses using W1 predictors in Whites. W1 religious support was a statistically significant predictor of every alcohol and well-being criterion included in these analyses across all 3 waves of data. All of these significant relationships were in the expected direction.

In Whites, W1 religious coping was a far less consistent predictor than religious support of W1, W2, and W3 criteria. In Whites, W1 religious coping was a statistically significant predictor of W1 alcohol use and positive well-being, W2 alcohol use, and well-being, and all W3 well-being outcomes (inc., positive well-being, well-being, and negative well-being). Positive well-being was the only criterion predicted by W1 religious coping at each time point this criterion was included in analyses (W1 and W3). W1 religious coping did not predict alcohol problems at any of the 3 waves, or alcohol use at W3. All of these significant relationships were in the expected direction.

Concerning hypotheses 1 and 2, it is difficult to compare the relative strength of each predictor across African Americans and Whites because of the differences in

statistical power between these two groups. Therefore, rather than tallying and comparing the number of significant betas for each predictor, which is confounded by statistical power, we instead calculated the mean beta values for the predictors across all waves (religious support and religious coping), predicting alcohol and well-being outcomes. Table 5 gives a better understanding of why there is mixed support for hypotheses 1 and 2 based on these regression analyses.

The mean beta values presented in Table 5 reflect all of the results from the various regressions also represented in Table 5, and provides mixed support for hypothesis 1. In both African Americans and Whites, the mean beta values for religious support were larger than the mean betas for religious coping when predicting alcohol use and problems. However, in African Americans, the mean betas for religious coping when predicting well-being criteria (well-being, positive well-being, and negative well-being), were higher than the betas for religious support. In Whites, the differences between mean betas for religious coping and religious support when predicting well-being criteria were smaller than the differences in African Americans. This provides some support for hypothesis 2 that religious support and religious coping are more comparable predictors of adjustment in Whites than in African Americans, particularly with respect to well-being criteria. However, these findings do not support hypothesis 1 that in African Americans, compared to Whites, religious support would be a stronger predictor of adjustment than religious coping.

Table 5 also provides the results of regression analyses using W2 predictors. In African Americans, W2 religious support was a marginally significant predictor of W3 alcohol use in the expected direction. W2 religious support did not significantly predict

any W2 criteria (inc., alcohol use, alcohol problems, and well-being), or other W3 criteria (inc., alcohol problems, well-being, positive well-being, and negative well-being). As seen in table 6, W2 religious coping was a statistically significant predictor of the only well-being criterion available at W2 (global well-being), and all well-being criteria at W3 (inc., positive well-being, global well-being, and negative well-being). It did not predict alcohol use or problems at W2 or W3. All of these significant relationships were in the expected direction.

Table 5 also provides the results of regression analyses using W2 predictors in Whites. W2 religious support was a statistically significant predictor of every alcohol and well-being criterion included in these analyses across both waves of data. All of these significant relationships were in the expected direction. In Whites, W2 religious coping was a far less consistent predictor than religious support of W2 and W3 criteria. In Whites, W2 religious coping was a statistically significant predictor of the only well-being criterion available at W2 (global well-being). With the exception of negative well-being, W2 religious coping predicted the remaining well-being criteria at W3 (inc., positive well-being and global well-being). Also, with the exception of W3 alcohol use, religious coping did not predict any other alcohol criteria at W2 or W3 (inc., use and problems). All of these significant relationships were in the expected direction.

Again, it is helpful to refer to mean beta values represented in Table 5 to get a better understanding of the support provided for hypotheses 1 and 2 by these particular regression analyses, which appears to be mixed for hypothesis 1. To summarize again, in both African Americans and Whites, the mean beta values for religious support when predicting alcohol use and problems were larger than the mean betas for religious coping.

However, in African Americans, the mean betas for religious coping when predicting well-being criteria (global well-being, positive well-being, and negative well-being) were higher than the betas for religious support. This was not the case in Whites, who had less disparate mean betas than African Americans for religious coping and religious support when predicting well-being criteria. These findings do not support hypothesis 1 that in African Americans, compared to Whites, religious support would be a stronger predictor of adjustment than religious coping, since in Whites religious support is meaningfully related to both alcohol and well-being criteria. However, this does provide some support for hypothesis 2 that religious support and religious coping are more comparable predictors of adjustment in Whites than in African Americans, particularly with respect to well-being criteria.

Finally, Table 5 provides the results of regression analyses using W3 predictors. In African Americans, W3 religious support was not a statistically significant predictor of any W3 criteria (inc., alcohol use, alcohol problems, global well-being, positive well-being, and negative well-being). However, W3 religious coping was a statistically significant predictor of all W3 well-being criteria (inc., global well-being, positive well-being, and negative well-being), and had a marginally significant relationship with W3 alcohol problems. All of these relationships were in the expected direction.

Table 5 also provides the results of regression analyses using W3 predictors in Whites. Similar to W1 and W2 religious support, W3 religious support was a statistically significant predictor of every alcohol and well-being criterion included in the analyses at W3. All of these significant relationships were in the expected direction. Again in Whites, W3 religious coping was a far less consistent predictor than religious support of

W3 criteria. In Whites, W3 religious coping was a statistically significant predictor of W3 alcohol use, W3 global well-being, and W3 positive well-being (betas for W3 alcohol problems and W3 negative well-being not significant). All of these significant relationships were in the expected direction.

Again, the mean beta values presented in Table 5 help explore how the relationships in the regression analyses using W3 predictors compares to the overall pattern of results and hypotheses 1 and 2. Clearly, the current analyses using W3 predictors do not support hypothesis 1, since W3 religious support in African Americans did not predict global well-being or alcohol criteria. On the contrary, the similarity between religious coping and religious support in Whites was supported by the current analyses and is consistent with the more comparable mean betas of religious support and religious coping in Whites than in African Americans (see Table 5).

Table 5

Predicting Outcomes from Wave 1, 2, and 3 Levels of Support and Coping with Mean Beta Values

| Pred→Crit | ALCOHOL USE | | | | | | ALCOHOL PROBLEMS | | | | | | WELL-BEING | | | | | | POS WELL-BEING | | | | | | NEG WELL-BEING | | | | | |
|-----------|-------------|------|----------|--------|-------------|-------|------------------|-------|-------------|---------|---------|---------|-------------|---------|---------|---------|-------------|-------|----------------|------|-------------|-----|--------|-----|----------------|-----|--------|--|--|--|
| | African Amr | | Whites | | African Amr | | Whites | | African Amr | | Whites | | African Amr | | Whites | | African Amr | | Whites | | African Amr | | Whites | | African Amr | | Whites | | | |
| | Sup | Cop | Sup | Cop | Sup | Cop | Sup | Cop | Sup | Cop | Sup | Cop | Sup | Cop | Sup | Cop | Sup | Cop | Sup | Cop | Sup | Cop | Sup | Cop | Sup | Cop | | | | |
| W1→W1 | -.18† | -.01 | -.15**** | -.07* | -.23** | -.02 | -.17**** | .01 | -- | -- | -- | -- | .24** | .34**** | .19**** | .25**** | .26** | .09 | -.16**** | .05 | -- | -- | -- | -- | -- | -- | | | | |
| W1→W2 | -.30* | .00 | -.19**** | -.09* | -.38** | .11 | -.11* | -.06 | .22† | .07 | .13** | .17**** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | | | | |
| W1→W3 | -.19† | -.07 | -.15**** | -.05 | -.15 | .02 | -.15**** | .03 | -.08 | .17 | .18**** | .10* | .02 | .27* | .13** | .22**** | .14 | -.05 | -.19**** | .01 | -- | -- | -- | -- | -- | -- | | | | |
| W2→W2 | -.13 | -.03 | -.15**** | -.06 | -.12 | -.01 | -.13** | .01 | .16 | .29* | .21**** | .20**** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | | | | |
| W2→W3 | -.24† | .03 | -.14** | -.14** | -.11 | .10 | -.17*** | -.03 | .05 | .39** | .17**** | .16*** | .21 | .40** | .12* | .27**** | .08 | -.29† | -.18**** | -.05 | -- | -- | -- | -- | -- | -- | | | | |
| W3→W3 | .02 | -.19 | -.09* | -.10* | .19 | -.26† | -.07† | -.04 | -.11 | .59**** | .18**** | .21**** | .06 | .62**** | .15**** | .35**** | -.40** | -.10 | -.18**** | -.06 | -- | -- | -- | -- | -- | -- | | | | |
| Mean Beta | -.173 | -.05 | -.145 | -.085 | -.133 | -.01 | -.133 | -.013 | .174 | .140 | .140 | .133 | .401 | .148 | .273 | .043 | -.163 | -.178 | -.013 | -- | -- | -- | -- | -- | -- | -- | | | | |

Note. †: p<.10; *: p<.05; **: p<.01; ***: p<.001; ****: p<.0001, Pred=Predictor, Crit=Criterion, Alc=Alcohol, Prob=Alcohol Problems, Pos =Positive, Neg =Support, Cop=Coping, Amr=American.

Table 6 provides the results of regression analyses with the change in religious support and coping from W1 to W2 predicting W2 criterions. In African Americans, the only statistically significant relationship supported by results was between W2 alcohol problems and the change in religious support from W1 to W2. However, the directionality of this relationship was paradoxical. Results suggested that W2 alcohol problems in African Americans were associated with increased, not decreased, religious support from W1 to W2. Similar counterintuitive findings were also obtained in later analyses.

In Whites, the only statistically significant relationship supported by results was between W2 global well-being and the change in religious support from W1 to W2. This relationship was in the expected direction.

Table 6

Predicting Wave 2 Outcomes from Change in Level of Support and Coping from Wave 1 to Wave 2

| Criterion | <u>African Americans</u> | | | | | <u>Whites</u> | | | | |
|----------------|--------------------------|--------|--------------------|--------------------|-----------------------|------------------|---------|--------------------|--------------------|-----------------------|
| | Overall <i>F</i> | df | β For Sup | β For Cop | β For Gender | Overall <i>F</i> | df | β For Sup | β For Cop | β For Gender |
| W2 Alc Use | 3.08* | (3,65) | .16 | .01 | .33** | 18.31**** | (3,644) | .05 | .04 | .27**** |
| W2 Alc Prob | 3.03* | (3,65) | .24* | -.07 | .29* | 5.09** | (3,644) | .02 | .07 | .13*** |
| W2 WB | 1.12 | (3,65) | .06 | .17 | -.14 | 3.52* | (3,645) | .10* | .05 | -.04 |

Note. †: $p < .10$; *: $p < .05$; **: $p < .01$; ***: $p < .001$; ****: $p < .0001$, Alc Use=Alcohol Use, Alc Prob=Alcohol Problems, WB= Global Well-Being, Sup=Support, Cop=Coping.

Table 7 displays the results of the regression analyses predicting change in criteria between W2 and W3 from change in predictors between W1 and W2. In African Americans, religious support had a marginally positive relationship with change in global well-being between W2 and W3 in the expected direction. In other words, increased religious support from W1 to W2 predicted increased global well-being from W2 to W3. Change in religious coping did not emerge as a significant predictor of outcomes in these analyses for African Americans.

In Whites, change in religious support between W1 and W2 did not have any statistically significant relationships with changes in adjustment. However, change in religious coping between W1 and W2 had significant inverse relationships with change in alcohol problems, alcohol use, and positive well-being between W2 and W3. As religious coping increased, alcohol use and problems was demonstrated to later decrease. Paradoxically, as religious coping increased from W1 to W2, positive well-being decreased from W2 to W3. These paradoxical findings will be discussed later in greater detail.

Similarly, Table 8 examined if the change in religious support and religious coping from W1 to W3 predicted change in adjustment criteria from W1 to W3. In African Americans, change in religious support had a positive relationship with change in alcohol problems between W1 and W3. As religious support increased between W1 and W3, alcohol problems also increased between W1 and W3. Also in African Americans, change in religious coping was a statistically significant predictor of the change in all well-being criteria (global well-being, positive well-being, and negative well-being) between W1 and W3. These relationships were in the expected direction.

Table 8

Predicting Change Between Wave 1 and Wave 3 Outcomes from Change in Level of Support and Coping from Wave 1 to Wave 3

| Criterion | Overall <i>F</i> | df | African Americans | | | Whites | | | | |
|-------------------------------|------------------|--------|---------------------|--------------------|--------------------|---------------------|--------------------|--------------------|---------|---------|
| | | | β For Support | β For Coping | β For Gender | β For Support | β For Coping | β For Gender | | |
| Δ in W1 to W3 Alc Use | 4.18** | (3,69) | .15 | -.07 | .41*** | 23.29**** | (3,751) | .04 | -.02 | .29**** |
| Δ in W1 to W3 Alc Prob | 2.88* | (3,69) | .27* | -.19 | .18* | 8.73**** | (3,751) | .04 | -.03 | .17**** |
| Δ in W1 to W3 WB | 2.66† | (3,69) | .08 | .29* | .01 | 5.82**** | (3,752) | .10** | .08* | -.05 |
| Δ in W1 to W3 Pos WB | 2.46† | (3,69) | .16 | .23† | .04 | 12.32**** | (3,752) | .10** | .14**** | -.10** |
| Δ in W1 to W3 Neg WB | 1.57 | (3,69) | .00 | -.25* | .01 | 1.7 | (3,752) | -.04 | -.06 | -.01 |

Note. †: $p < .10$; *: $p < .05$; **: $p < .01$; ***: $p < .001$; ****: $p < .0001$, Alc=Alcohol, Problems=Alcohol Problems, WB=Well-Being, Neg Att=Negative Affect, Pos=Positive.

In Whites, change in religious coping and religious support had positive relationships with changes in global well-being and positive well-being between W1 and W3. In other words, as religious support and religious coping increased between W1 and W3, global well-being and positive well-being also increased during this time period.

Hypotheses 3 & 4. To test the hypothesis that in African American students, religious support will be a stronger moderator of the effects of life stress on adjustment than religious coping in African American students, a series of hierarchical regressions as outlined by Baron and Kenny (1986) were conducted. Moderation was tested by examining statistically significant interactions between stress and the hypothesized moderators (religious support and religious coping). Subsequently, the impact that different levels of these moderators had on outcomes (i.e., alcohol use and problems) were tested by recentering the moderators for those 1 standard deviation (SD) above and below the mean (Aiken & West, 1991) and running 2 additional regression analyses. The following summarizes students' results for tests of religious support and religious coping's moderation or buffering effect on the relationship between life stress and adjustment.

The tables below presents the standardized β coefficient ratings for life stress, religious support, religious coping, and interactive effects of these variables on alcohol use, alcohol problems, and well-being. The variables listed under "Main Effects" indicate how strongly they individually predict an outcome variable at some time point, while controlling for the impact of the outcome variable at the previous time point. The rows listed under "Interactions" indicate the strength of the interaction between stress and

the hypothesized moderators, as well as the strength of the interaction between the hypothesized moderators.

The second portion of the table presents the strength of the relationship between stress and adjustment when the hypothesized moderator(s) that reached statistical significance in step 2 is 1 SD below the mean, at the mean, and 1 SD above the mean.

Wave 2 Alcohol Use

As seen below in Step 1 of Table 9a, Whites' W2 stress and religious support were significant predictors of W2 alcohol use in the expected direction ($\beta = .10$, $p < .0001$; $\beta = -.08$, $p < .05$, respectively), even while controlling for W1 alcohol use. Increases in stress and decreases in religious support independently predicted greater alcohol use. For African Americans, none of the predictors (stress, religious coping, and religious support) were able to independently predict W2 levels of alcohol use in Step 1, as seen in Table 9a.

However, in Step 2, the initial interaction term between stress and support was significant in both Whites and African Americans, $\beta = .08$, $p < .05$; $\beta = .30$, $p < .05$, respectively. In other words, religious support moderated the relationship between stress and alcohol use in both African Americans and Whites. After probing these interactions (Table 9b), higher levels of religious support resulted in a stronger positive relationship between stress and alcohol use in both Whites and African Americans (1 S.D. above the mean religious support), $\beta = .18$, $p < .0001$; $\beta = .31$, $p < .05$, respectively. Moreover, in African Americans, less religious support predicted less alcohol use in the face of higher stress (1 S.D. below the mean religious support) $\beta = -.24$, $p < .10$. So, while religious support in African Americans and Whites was a better moderator of the relationship

between stress and W2 alcohol use, the directionality of this relationship was completely unforeseen and undermines the support for hypothesis 3. Furthermore, in Whites, the failure of religious coping to moderate the relationship between life stress and adjustment, as did religious support, suggests a lack of comparability and does not support hypothesis 4.

Table 9a

Standardized β Coefficients for African Americans and Whites' Wave 2 Stress, Religious Coping, Religious Support, and Interaction in the Prediction of Wave 2 Alcohol Use.

| | $R^2 \Delta$ | $F \Delta$ | $df \Delta$ | b | $S.E$ | β |
|----------------------------|--------------|------------|-------------|------|-------|---------|
| <u>Whites</u> | | | | | | |
| <u>Step 1</u> Main Effects | .42 | 96.50**** | 5,656 | | | |
| Gender | | | | .27 | .06 | .14**** |
| W1 ETOH Use | | | | .65 | .04 | .57**** |
| W2 Stress | | | | .08 | .02 | .10*** |
| W2 Rel. Support | | | | -.07 | .03 | -.08* |
| W2 Rel. Coping | | | | -.02 | .04 | -.02 |
| <u>Step 2</u> Interactions | .01 | 1.87 | 3,653 | | | |
| Stress X Support | | | | .06 | .03 | .08* |
| Stress X Coping | | | | -.05 | .03 | -.05 |
| Support X Coping | | | | -.01 | .03 | -.01 |
| <u>African Americans</u> | | | | | | |
| <u>Step 1</u> Main Effects | .48 | 11.27**** | 5,62 | | | |
| Gender | | | | .06 | .19 | .03 |
| W1 ETOH Use | | | | .54 | .08 | .66**** |
| W2 Stress | | | | .02 | .07 | .03 |
| W2 Rel. Support | | | | -.05 | .09 | -.05 |
| W2 Rel. Coping | | | | -.02 | .14 | -.02 |
| <u>Step 2</u> Interactions | .06 | 2.55† | 3,59 | | | |
| Stress X Support | | | | .22 | .09 | .29* |
| Stress X Coping | | | | -.07 | .12 | -.08 |
| Support X Coping | | | | -.04 | .12 | -.04 |

Notes: †: $p < .10$; *: $p < .05$; **: $p < .01$; ***: $p < .001$; ****: $p < .0001$, Rel. Support = Religious Support, Rel. Coping = Religious Coping.

Table 9b

Results of Probes of Religious Support from Hierarchical Regression Predicting W2 Alcohol Use.

| | | <i>b for W2</i> | <i>S.E for W2</i> | <i>β for W2</i> |
|-------------------|--------------------|-----------------|-------------------|-----------------|
| | | <i>Stress</i> | <i>Stress</i> | <i>Stress</i> |
| Whites | Low on Support | .02 | .04 | .02 |
| | At Mean on Support | .08 | .02 | .10*** |
| | High on Support | .14 | .04 | .18**** |
| African Americans | Low on Support | -.19 | .11 | -.24† |
| | At Mean on Support | .03 | .07 | .03 |
| | High on Support | .24 | .12 | .31* |

Notes: †: $p < .10$; *: $p < .05$; **: $p < .01$; ***: $p < .001$; ****: $p < .0001$.

Wave 3 Alcohol Use

Table 10a below depicts the results of regression analyses to test hypotheses 3 and 4. In Whites, W3 stress and religious coping were significant predictors of W3 alcohol use in the expected direction ($\beta = .09$, $p < .01$; $\beta = -.09$, $p < .05$, respectively), even while controlling for W2 alcohol use. Greater stress predicted greater alcohol use, as did less religious coping. Religious support did not individually predict W3 alcohol use in Whites. In African Americans, none of the W3 predictors (stress, religious support, and religious coping) individually predicted W3 alcohol use. However, in African Americans, the initial interaction term between stress and support was significant $\beta = .25$, $p < .05$, suggesting religious support moderated the relationship between stress and alcohol use.

Similar to the results of W2 alcohol use reported earlier in Table 9b, Table 10b demonstrates that higher levels of religious support in African Americans resulted in a stronger positive relationship between stress and alcohol use (1 SD above the mean

religious support), $\beta = .17$, ns. Furthermore, in African Americans less religious support predicted less alcohol use in the face of higher stress (1 SD below the mean religious support) $\beta = -.36$, $p < .05$. Again, despite religious support moderating the relationship between W3 stress and W3 alcohol use as predicted, the paradoxical impact on this relationship was not expected and is not supportive of hypothesis 3.

The comparability of religious coping and religious support as moderators in Whites is questionable, even though both moderators failed to significantly buffer the relationship between W3 stress and W3 alcohol use. Therefore, the analyses provide limited support for hypothesis 4. More interesting was the significant support by coping interaction in Whites. As seen in Table 10b, as levels of religious support increased, the protective effect of religious coping on alcohol use got stronger. In other words, in individuals low in religious support, religious coping is unrelated to alcohol use. As religious support increases, the inverse relationship between religious coping and alcohol use gets stronger.

Wave 2 Alcohol Problems

As seen below in Table 11a, W2 stress and W2 religious coping in Whites independently predicted W2 alcohol problems ($\beta = .12$, $p < .0001$; $\beta = -.01$, $p < .01$, respectively), even while controlling for W1 alcohol problems. W2 religious support did not independently predict W2 alcohol problems in Whites. In African Americans, there was a marginally significant statistical relationship between W2 religious support and W2 alcohol problems, although the relationship was in the expected direction $\beta = -.18$,

Table 10a

Standardized β Coefficients for African Americans and Whites' Wave 3 Stress, Religious Coping, Religious Support, and Interaction in the Prediction of Wave 3 Alcohol Use.

| | $R^2 \Delta$ | $F \Delta$ | $df \Delta$ | B | $S.E$ | β |
|----------------------------|--------------|------------|-------------|------|-------|---------|
| Whites | | | | | | |
| <u>Step 1</u> Main Effects | .50 | 105.96**** | 5,529 | | | |
| Gender | | | | .21 | .06 | .11*** |
| W2 ETOH Use | | | | .65 | .03 | .64**** |
| W3 Stress | | | | .07 | .02 | .09** |
| W3 Rel. Support | | | | .01 | .03 | .01 |
| W3 Rel. Coping | | | | -.10 | .04 | -.09** |
| <u>Step 2</u> Interactions | .01 | 2.02† | 3,526 | | | |
| Stress X Support | | | | .01 | .03 | .02 |
| Stress X Coping | | | | 0 | .03 | 0 |
| Support X Coping | | | | -.08 | .03 | -.07* |
| African Americans | | | | | | |
| <u>Step 1</u> Main Effects | .57 | 12.98**** | 5,50 | | | |
| Gender | | | | .34 | .25 | .16 |
| W2 ETOH Use | | | | .85 | .13 | .65**** |
| W3 Stress | | | | -.03 | .08 | -.05 |
| W3 Rel. Support | | | | .07 | .11 | .07 |
| W3 Rel. Coping | | | | -.18 | .14 | -.15 |
| <u>Step 2</u> Interactions | .09 | 4.07** | 3,47 | | | |
| Stress X Support | | | | .21 | .10 | .25* |
| Stress X Coping | | | | .06 | .10 | .07 |
| Support X Coping | | | | .09 | .12 | .08 |

Notes: †: $p < .10$; *: $p < .05$; **: $p < .01$; ***: $p < .001$; ****: $p < .0001$, Rel. Support= Religious Support, Rel. Coping = Religious Coping.

$p < .10$). No other predictors independently predicted W2 alcohol problems in either African Americans or Whites.

In Whites, the initial interaction term between W2 stress and W2 religious support was significant $\beta = .08$, $p < .05$, suggesting a moderation effect (Table 11a). However, after performing a series of regression analyses to explore the direction of this

Table 10b

Results of Probes of Religious Support and Religious Coping from Hierarchical Regression Predicting W3 Alcohol Use.

| | | <i>b for W3 Coping</i> | <i>S.E for W3 Coping</i> | <i>β for W3 Coping</i> |
|-------------------|--------------------|----------------------------|------------------------------|----------------------------|
| Whites | Low on Support | -.02 | .05 | -.02 |
| | At Mean on Support | -.11 | .04 | -.10** |
| | High on Support | -.19 | .06 | -.17*** |
| | | <i>b for W3 Stress</i> | <i>S.E for W3 Stress</i> | <i>β for W3 Stress</i> |
| African Americans | Low on Support | -.28 | .13 | -.36* |
| | At Mean on Support | -.07 | .07 | -.09 |
| | High on Support | .13 | .11 | .17 |

Notes: †: $p < .10$; *: $p < .05$; **: $p < .01$; ***: $p < .001$; ****: $p < .0001$.

relationship, the results were again counter-intuitive (Table 11b). As religious support increased in Whites, the relationship between life stress and alcohol problems got stronger (See Table 11b). Furthermore, in contrast to hypothesis 4, the potential moderators do not appear to be comparable in this particular analysis since only religious support buffered the relationship between stress and alcohol problems.

Hypothesis 3 was not supported by these results since there was no significant moderation effect for religious support in African Americans. However, there was a significant support by coping interaction such that as levels of religious support increases, religious coping is more strongly related to alcohol problems.

Table 11a

Standardized β Coefficients for African Americans and Whites' Wave 2 Stress, Religious Coping, Religious Support, and Interaction in the Prediction of Wave 2 Alcohol Problems.

| | $R^2 \Delta$ | $F \Delta$ | $df \Delta$ | b | $S.E$ | β |
|----------------------------|--------------|------------|-------------|------|-------|---------|
| <u>Whites</u> | | | | | | |
| <u>Step 1</u> Main Effects | .40 | 86.37**** | 5,660 | | | |
| Gender | | | | .10 | .05 | .06† |
| W1 ETOH Prob | | | | .86 | .05 | .60**** |
| W2 Stress | | | | .09 | .02 | .12**** |
| W2 Rel. Support | | | | -.02 | .03 | -.03 |
| W2 Rel. Coping | | | | -.01 | .04 | -.01** |
| <u>Step 2</u> Interactions | .01 | 1.87 | 3,657 | | | |
| Stress X Support | | | | .05 | .02 | .08* |
| Stress X Coping | | | | -.05 | .03 | -.06 |
| Support X Coping | | | | -.03 | .03 | -.03 |
| <u>African Americans</u> | | | | | | |
| <u>Step 1</u> Main Effects | .43 | 9.80**** | 5,64 | | | |
| Gender | | | | .03 | .15 | .02 |
| W1 ETOH Prob | | | | 1.03 | .16 | .65**** |
| W2 Stress | | | | -.01 | .06 | -.01 |
| W2 Rel. Support | | | | -.12 | .07 | -.18† |
| W2 Rel. Coping | | | | .09 | .10 | .09 |
| <u>Step 2</u> Interactions | .10 | 4.57** | 3,61 | | | |
| Stress X Support | | | | .08 | .06 | .14 |
| Stress X Coping | | | | .08 | .07 | .13 |
| Support X Coping | | | | .23 | .08 | .28** |

Notes: †: $p < .10$; *: $p < .05$; **: $p < .01$; ***: $p < .001$; ****: $p < .0001$, Rel. Support= Religious Support, Rel. Coping = Religious Coping, ETOH=Alcohol, Prob=Problems.

Table 11b

Results of Probes of Religious Support and Religious Coping from Hierarchical Regression Predicting W2 Alcohol Problems.

| | | <i>b for W2</i> | <i>S.E for W2</i> | β <i>for W2</i> |
|-------------------|--------------------|-----------------|-------------------|-----------------------|
| | | <i>Stress</i> | <i>Stress</i> | <i>Stress</i> |
| Whites | Low on Support | .03 | .03 | .05 |
| | At Mean on Support | .08 | .02 | .12 |
| | High on Support | .14 | .03 | .19**** |
| | | <i>b for W2</i> | <i>S.E for W2</i> | β <i>for W2</i> |
| | | <i>Coping</i> | <i>Coping</i> | <i>Coping</i> |
| African Americans | Low on Support | -.05 | .10 | -.05 |
| | At Mean on Support | .12 | .10 | .13 |
| | High on Support | .34 | .14 | .37* |

Notes: †: $p < .10$; *: $p < .05$; **: $p < .01$; ***: $p < .001$; ****: $p < .0001$.

Wave 3 Alcohol Problems

As seen below in Table 12a, W3 stress independently predicted W3 alcohol problems in Whites and African Americans ($\beta = .12$, $p < .0001$; $\beta = .18$, $p < .05$, respectively), even while controlling for W2 alcohol problems. Neither W3 religious support nor W3 religious coping individually predicted W3 alcohol problems in Whites or African Americans. Furthermore, the initial interaction terms between stress and the hypothesized moderators were not significant in either group. These results do not provide support for hypotheses 3 or 4. However, there was a significant support by coping interaction in Whites. As seen in Table 12b, religious coping is inversely related to alcohol problems only for individuals who are also high on religious support.

Table 12a

Standardized β Coefficients for African Americans and Whites' Wave 3 Stress, Religious Coping, Religious Support, and Interaction in the Prediction of Wave 3 Alcohol Problems.

| | $R^2 \Delta$ | $F \Delta$ | $df \Delta$ | b | $S.E$ | B |
|----------------------------|--------------|------------|-------------|------|-------|----------|
| <u>Whites</u> | | | | | | |
| <u>Step 1</u> Main Effects | .41 | 74.19**** | 5,529 | | | |
| Gender | | | | .13 | .06 | .08* |
| W2 ETOH Prob | | | | .59 | .03 | .59**** |
| W3 Stress | | | | .08 | .02 | .12**** |
| W3 Rel. Support | | | | -.01 | .03 | -.01 |
| W3 Rel. Coping | | | | -.04 | .04 | -.04 |
| <u>Step 2</u> Interactions | .02 | 5.30**** | 3,526 | | | |
| Stress X Support | | | | .02 | .02 | .03 |
| Stress X Coping | | | | -.03 | .03 | -.05 |
| Support X Coping | | | | -.12 | .03 | -.13**** |
| <u>African Americans</u> | | | | | | |
| <u>Step 1</u> Main Effects | .72 | 25.27**** | 5,50 | | | |
| Gender | | | | .15 | .14 | .09 |
| W2 ETOH Prob | | | | .95 | .09 | .78**** |
| W3 Stress | | | | .09 | .05 | .18* |
| W3 Rel. Support | | | | .03 | .07 | .04 |
| W3 Rel. Coping | | | | -.11 | .08 | .12 |
| <u>Step 2</u> Interactions | 0 | .10 | 3,47 | | | |
| Stress X Support | | | | .02 | .06 | .03 |
| Stress X Coping | | | | -.03 | .06 | -.05 |
| Support X Coping | | | | .04 | .08 | .04 |

Notes: †: $p < .10$; *: $p < .05$; **: $p < .01$; ***: $p < .001$; ****: $p < .0001$, Rel. Support= Religious Support, Rel. Coping = Religious Coping, ETOH=Alcohol, Prob=Problems.

Table 12b

Results of Probes of Religious Coping and Religious Support from Hierarchical Regression Predicting W3 Alcohol Problems.

| | | <i>b for W2 Coping</i> | <i>S.E for W2 Coping</i> | <i>β for W2 Coping</i> |
|--------|--------------------|----------------------------|------------------------------|----------------------------|
| Whites | Low on Support | .08 | .05 | .09† |
| | At Mean on Support | -.05 | .04 | -.05 |
| | High on Support | -.18 | .05 | -.19*** |

Notes: †: $p < .10$; *: $p < .05$; **: $p < .01$; ***: $p < .001$; ****: $p < .0001$.

Wave 3 Global Well-Being

The relationship between stress, global well-being, and the hypothesized moderators are depicted below (see Table 13a). In the following regression analyses, W3 stress was found to independently predict W3 global well-being in Whites ($\beta = -.32$, $p < .0001$), but not in African Americans, even while controlling for W2 global well-being. Religious coping was also found to individually predict W3 global well-being in both Whites and African Americans ($\beta = .12$, $p < .0001$; $\beta = .63$, $p < .01$, respectively). Neither of the initial interaction terms for religious support nor religious coping in African Americans and Whites was significant. Thus, religious support's predictive ability above that of religious coping was not supported in African Americans.

Similarly, support for hypothesis 4 is questionable although both religious coping and religious support did not significantly buffer the relationship between W3 stress and W3 global well-being. More interesting was the significant support by coping interaction in Whites. As seen in Table 13b, for individuals low on religious support, there is no significant relationship between religious coping and global well-being. However, as

levels of religious support increases the effect of religious coping on global well-being also increases.

Table 13a

Standardized β Coefficients for African Americans and Whites' Wave 3 Stress, Religious Coping, Religious Support, and Interaction in the Prediction of Wave 3 Global Well-Being.

| | $R^2 \Delta$ | $F \Delta$ | $df \Delta$ | b | $S.E$ | B |
|----------------------------|--------------|------------|-------------|------|-------|----------|
| <u>Whites</u> | | | | | | |
| <u>Step 1</u> Main Effects | .46 | 90.66**** | 5,531 | | | |
| Gender | | | | -.05 | .06 | -.03 |
| W2 Well-Being | | | | .45 | .04 | .44**** |
| W3 Stress | | | | -.21 | .02 | -.32**** |
| W3 Rel. Support | | | | .03 | .03 | .05 |
| W3 Rel. Coping | | | | .12 | .04 | .12** |
| <u>Step 2</u> Interactions | 0 | 1.41 | 3,528 | | | |
| Stress X Support | | | | .02 | .02 | .03 |
| Stress X Coping | | | | .02 | .03 | 0 |
| Support X Coping | | | | .06 | .03 | .06† |
| <u>African Americans</u> | | | | | | |
| <u>Step 1</u> Main Effects | .72 | 25.27**** | 5,50 | | | |
| Gender | | | | .15 | .14 | .09 |
| W2 Well-being | | | | .95 | .09 | .78**** |
| W3 Stress | | | | .09 | .05 | .18* |
| W3 Rel. Support | | | | .03 | .07 | .04 |
| W3 Rel. Coping | | | | -.11 | .08 | .12 |
| <u>Step 2</u> Interactions | 0 | .10 | 3,47 | | | |
| Stress X Support | | | | .02 | .06 | .03 |
| Stress X Coping | | | | -.03 | .06 | -.05 |
| Support X Coping | | | | .04 | .08 | .04 |

Notes: †: $p < .10$; *: $p < .05$; **: $p < .01$; ***: $p < .001$; ****: $p < .0001$, Well-Being=Global Well-Being, Rel. Support= Religious Support, Rel. Coping = Religious Coping, ETOH=Alcohol, Prob=Problems.

Table 13b

Results of Probes of Religious Support and Religious Coping from Hierarchical Regression Predicting W3 Global Well-Being.

| | | <i>b for W2 Coping</i> | <i>S.E. for W2 Coping</i> | <i>β for W2 Coping</i> |
|--------|--------------------|----------------------------|-------------------------------|----------------------------|
| Whites | Low on Support | .07 | .05 | .07 |
| | At Mean on Support | .13 | .04 | .13*** |
| | High on Support | .19 | .05 | .19**** |

Notes: †: $p < .10$; *: $p < .05$; **: $p < .01$; ***: $p < .001$; ****: $p < .0001$.

The tables below presents the standardized β coefficient ratings for life stress, religious support, religious coping, and interactive effects of these variables on alcohol use, alcohol problems, positive well-being, and negative affect. The “Main Effects” rows indicate how strongly these variables individually predicts an outcome variable at a later time point (W3), while controlling for the impact of the same outcome variable at the previous time point (W2). Testing the hypothesized moderators’ effects on the relationships between stress and outcomes over time provides an even more rigorous test of hypotheses 3 and 4 than the within-wave analyses described thus far.

Wave 2 Stress and Wave 3 Alcohol Use

Below are the results of several regression analyses investigating the relationship that W2 stress and the hypothesized moderators at W2 had on W3 alcohol use (See Table 14a). In Whites, only W2 religious coping independently predicted W3 alcohol use in the expected direction ($\beta = -.09$, $p < .05$), even while controlling for W2 alcohol use. W2 religious support was in the expected direction, but did not reach statistical significance. Support for hypothesis 4 in this set of analyses is questionable. The fact that both religious coping and religious support did not significantly buffer the relationship

between W3 stress and W3 global well-being is not strong evidence for their comparability.

Table 14a

Standardized β Coefficients for African Americans and Whites' Wave 2 Stress, Religious Coping, Religious Support, and Interaction in the Prediction of Wave 3 Alcohol Use.

| | $R^2 \Delta$ | $F \Delta$ | $df \Delta$ | b | $S.E$ | β |
|----------------------------|--------------|------------|-------------|------|-------|---------|
| <u>Whites</u> | | | | | | |
| <u>Step 1</u> Main Effects | .50 | 106.91**** | 5,530 | | | |
| Gender | | | | .20 | .06 | .10** |
| W2 ETOH Use | | | | .65 | .03 | .64**** |
| W2 Stress | | | | .01 | .03 | .02 |
| W2 Rel. Support | | | | -.03 | .03 | -.03 |
| W2 Rel. Coping | | | | -.10 | .04 | -.09* |
| <u>Step 2</u> Interactions | 0 | 1.26 | 3,527 | | | |
| Stress X Support | | | | -.04 | .03 | -.06 |
| Stress X Coping | | | | .04 | .03 | .05 |
| Support X Coping | | | | -.03 | .03 | -.02 |
| <u>African Americans</u> | | | | | | |
| <u>Step 1</u> Main Effects | .63 | 17.08**** | 5,50 | | | |
| Gender | | | | .52 | .21 | .24* |
| W2 ETOH Use | | | | .85 | .12 | .65**** |
| W2 Stress | | | | .26 | .08 | .27** |
| W2 Rel. Support | | | | -.06 | .10 | -.06 |
| W2 Rel. Coping | | | | -.08 | .14 | -.06 |
| <u>Step 2</u> Interactions | .08 | 4.48** | 3,47 | | | |
| Stress X Support | | | | -.24 | .09 | -.28** |
| Stress X Coping | | | | -.03 | .11 | -.02 |
| Support X Coping | | | | .17 | .12 | .14 |

Notes: †: $p < .10$; *: $p < .05$; **: $p < .01$; ***: $p < .001$; ****: $p < .0001$, Rel. Support= Religious Support, Rel. Coping = Religious Coping, ETOH=Alcohol, Prob=Problems.

As expected, in African Americans, W2 life stress independently predicted W3 alcohol use ($\beta = .27$, $p < .01$), even while controlling for W2 alcohol use. Furthermore, the initial interaction term between W2 life stress and W2 religious support was

significant $\beta = -.28, p < .01$. As seen below, the strength of this interaction effect is noteworthy and provides substantial support for hypothesis 3. When religious support was low, or recentered for 1 SD below the mean, the relationship between life stress at W2 and later alcohol use during W3 was very strong ($\beta = .48, p < .0001$). Likewise, in African Americans high in religious support (1 SD above the mean) at W2, the relationship between W2 life stress and W3 alcohol use was not significant ($\beta = -.02, n.s.$). In the same fashion, the mean level of religious support predicted a moderate relationship between W2 life stress and W3 alcohol use ($\beta = .23, p < .01$). In further support of hypothesis 3, W2 religious coping was not found to independently predict W3 alcohol use or significantly moderate the relationship between life stress and later alcohol use.

Table 14b

Results of Probes of Religious Support from Hierarchical Regression Predicting W3 Alcohol Use.

| | <i>b for W2 Stress</i> | <i>S.E for W2 Stress</i> | <i>β for W2 Stress</i> |
|----------------------------------|----------------------------|------------------------------|----------------------------|
| African Americans Low on Support | .45 | .11 | .48**** |
| At Mean on Support | .21 | .08 | .23** |
| High on Support | -.02 | .12 | -.02 |

Notes: †: $p < .10$; *: $p < .05$; **: $p < .01$; ***: $p < .001$; ****: $p < .0001$.

Wave 2 Stress and Wave 3 Alcohol Problems

As seen below in Table 15a, the results of regression analyses investigating alcohol problems as an outcome was consistent with those obtained above for alcohol use. In Whites, only W2 stress and W2 religious support independently predicted W3 alcohol problems in the expected direction ($\beta = .06, p < .10$; $\beta = -.08, p < .10$,

respectively), even while controlling for W2 alcohol problems. W2 religious coping was in the expected direction, but did not reach statistical significance. Again, there is limited support for hypothesis 4 even though both religious coping and religious support did not significantly

Table 15a

Standardized β Coefficients for African Americans and Whites' Wave 2 Stress, Religious Coping, Religious Support, and Interaction in the Prediction of Wave 3 Alcohol Problems.

| | $R^2 \Delta$ | $F \Delta$ | $df \Delta$ | b | $S.E$ | β |
|----------------------------|--------------|------------|-------------|------|-------|---------|
| <u>Whites</u> | | | | | | |
| <u>Step 1</u> Main Effects | .42 | 75.67**** | 5,530 | | | |
| Gender | | | | .12 | .06 | .07* |
| W2 ETOH Prob | | | | .60 | .03 | .60**** |
| W2 Stress | | | | .04 | .02 | .06† |
| W2 Rel. Support | | | | -.06 | .03 | -.08† |
| W2 Rel. Coping | | | | -.02 | .04 | -.02 |
| <u>Step 2</u> Interactions | .01 | 2.60† | 3,527 | | | |
| Stress X Support | | | | -.02 | .02 | -.02 |
| Stress X Coping | | | | -.06 | .03 | -.01 |
| Support X Coping | | | | -.08 | .03 | -.09** |
| <u>African Americans</u> | | | | | | |
| <u>Step 1</u> Main Effects | .71 | 24.93**** | 5,50 | | | |
| Gender | | | | .25 | .13 | .16† |
| W2 ETOH Prob | | | | .97 | .10 | .80**** |
| W2 Stress | | | | .13 | .05 | .19* |
| W2 Rel. Support | | | | .05 | .06 | .06 |
| W2 Rel. Coping | | | | .03 | .09 | .03 |
| <u>Step 2</u> Interactions | .01 | .55 | 3,47 | | | |
| Stress X Support | | | | -.08 | .06 | -.13 |
| Stress X Coping | | | | .05 | .08 | .06 |
| Support X Coping | | | | .04 | .09 | 0 |

Notes: †: $p < .10$; *: $p < .05$; **: $p < .01$; ***: $p < .001$; ****: $p < .0001$, Rel. Support= Religious Support, Rel. Coping = Religious Coping, ETOH=Alcohol, Prob=Problems.

buffer the relationship between W2 stress and W3 alcohol problems. More interesting was the significant support by coping interaction in Whites. As seen in Table 15b, for individuals high in religious support, religious coping takes on an inverse relationship with alcohol problems.

As expected in African Americans, W2 life stress independently predicted W3 alcohol use ($\beta = .19, p < .05$). Although the initial interaction term between life stress and religious support fell just short of statistical significance $\beta = -.13, n.s.$, follow-up analyses were conducted to identify if the same pattern seen using W2 stress to predict W3 alcohol use would emerge.

When religious support was low, or recentered for 1 SD below the mean, the relationship between life stress at W2 and alcohol problems at W3 was significant ($\beta = .30, p < .01$). As hypothesized, for African Americans high in religious support at W2 (1 SD above the mean), the relationship between W2 life stress and W3 problems was not

Table 15b

Results of Probes of Religious Support and Religious Coping from Hierarchical Regression Predicting W3 Alcohol Problems.

| | | <i>b for W2</i> | <i>S.E for W2</i> | β for W2 |
|-------------------|--------------------|-----------------|-------------------|----------------|
| | | <i>Coping</i> | <i>Coping</i> | <i>Coping</i> |
| Whites | Low on Support | .05 | .05 | .06 |
| | At Mean on Support | -.03 | .04 | -.03 |
| | High on Support | -.11 | .05 | -.12* |
| | | <i>b for W2</i> | <i>S.E for W2</i> | β for W2 |
| | | <i>Stress</i> | <i>Stress</i> | <i>Stress</i> |
| African Americans | Low on Support | -.20 | .08 | .30** |
| | At Mean on Support | .13 | .06 | .19* |
| | High on Support | .05 | .09 | .08 |

Notes: †: $p < .10$; *: $p < .05$; **: $p < .01$; ***: $p < .001$; ****: $p < .0001$.

significant ($\beta = .08$, n.s.). In turn, the mean level of the religious support predicted a moderate relationship between W2 life stress and W3 alcohol problems ($\beta = .19$, $p < .05$). Again, although the initial interaction term for life stress and religious support was not significant, the pattern of these findings is consistent with those found with alcohol use, which lends more credibility to these results. These findings provide strong support for hypothesis 3.

Wave 2 Stress and Wave 3 Negative Affect

As seen below in Table 16a, W2 religious support independently predicted W3 negative affect ($\beta = -.08$, $p < .10$) in the expected direction for Whites, even while controlling for W2 negative affect. However, the magnitude of this relationship was statistically weak. W2 stress and W2 coping did not independently predict W3 negative affect in Whites. In African Americans, none of the W2 predictors included in the analyses (inc., life stress, religious support, and religious coping) independently predicted W3 negative affect. Even W2 negative affect did not predict W3 negative affect in African Americans. Furthermore, there were no significant interactions in step 2 of these analyses for African Americans.

In Whites, the initial interaction term between stress and religious coping was significant $\beta = .10$, $p < .05$, suggesting a moderation effect. After performing a series of regression analyses to explore the direction of this relationship, the results were not in the direction expected. As W2 religious coping increased in Whites, the relationship between W2 life stress and W3 negative affect got stronger (See Table 16b). When religious coping was low, or recentered for 1 SD below the mean there was an inverse, although non-significant relationship obtained between W2 stress and W3 negative affect

Table 16a

Standardized β Coefficients for African Americans and Whites' Wave 2 Stress, Religious Coping, Religious Support, and Interaction in the Prediction of Wave 3 Negative Affect.

| | $R^2 \Delta$ | $F \Delta$ | $df \Delta$ | b | $S.E$ | β |
|----------------------------|--------------|------------|-------------|------|-------|---------|
| <u>Whites</u> | | | | | | |
| <u>Step 1</u> Main Effects | .22 | 29.66**** | 5,530 | | | |
| Gender | | | | -.07 | .06 | -.05 |
| W2 Neg Aff | | | | .44 | .04 | .42**** |
| W2 Stress | | | | .03 | .03 | .05 |
| W2 Rel. Support | | | | -.05 | .03 | -.08† |
| W2 Rel. Coping | | | | -.01 | .04 | -.01 |
| <u>Step 2</u> Interactions | .01 | 1.73 | 3,527 | | | |
| Stress X Support | | | | -.02 | .03 | -.04 |
| Stress X Coping | | | | .07 | .03 | .10* |
| Support X Coping | | | | -.03 | .03 | -.02 |
| <u>African Americans</u> | | | | | | |
| <u>Step 1</u> Main Effects | .08 | .90 | 5,49 | | | |
| Gender | | | | -.11 | .21 | -.08 |
| W2 Neg Aff | | | | .21 | .15 | .21 |
| W2 Stress | | | | .01 | .09 | .01 |
| W2 Rel. Support | | | | .05 | .10 | .08 |
| W2 Rel. Coping | | | | -.19 | .15 | -.21 |
| <u>Step 2</u> Interactions | .02 | .27 | 3,46 | | | |
| Stress X Support | | | | -.02 | .10 | .03 |
| Stress X Coping | | | | .09 | .14 | .13 |
| Support X Coping | | | | -.01 | .14 | -.02 |

Notes: †: $p < .10$; *: $p < .05$; **: $p < .01$; ***: $p < .001$; ****: $p < .0001$, Rel. Support= Religious Support, Rel. Coping = Religious Coping, ETOH=Alcohol, Prob=Problems, Neg=Negative.

($\beta = -.04$, n.s.). In other words, when religious coping was low, higher stress at W2 led to less negative affect at W3. When religious coping was high (1 SD above the mean), higher stress at W2 was significantly related to higher negative affect at W3 ($\beta = .14$, $p < .05$). Moderate levels of religious coping resulted in a relatively moderate relationship between W2 life stress and W3 negative affect.

This particular set of analyses does not support hypothesis 3 or 4. Religious support's predictive ability above that of religious coping was not identified in African Americans. Neither, were both religious support and religious coping found to moderate the relationship between stress and negative affect for Whites.

Table 16b

Results of Probes of Religious Coping from Hierarchical Regression Predicting W3 Negative Affect.

| | | <i>b for W2 Stress</i> | <i>S.E for W2 Stress</i> | <i>β for W2 Stress</i> |
|--------|-------------------|----------------------------|------------------------------|----------------------------|
| Whites | Low on Coping | -.02 | .04 | -.04 |
| | At Mean on Coping | .03 | .03 | .05 |
| | High on Coping | .08 | .04 | .14* |

Notes: †: $p < .10$; *: $p < .05$; **: $p < .01$; ***: $p < .001$; ****: $p < .0001$.

Wave 2 Stress and Wave 3 Positive Well-Being

As seen in Table 17a below, W2 life stress and W2 religious coping for Whites independently predicted W3 positive well-being in the expected directions ($\beta = -.09$, $p < .05$; $\beta = .11$, $p < .05$, respectively), even while controlling for W2 positive well-being. Neither initial interaction term for religious support or coping was statistically significant for Whites ($\beta = -.01$, n.s.; $\beta = -.04$, n.s., respectively).

In African Americans, there was a weak statistical relationship between W2 religious coping and W3 positive well-being ($\beta = .23$, $p < .10$). Similarly, the initial interaction term for religious coping marginally reached statistical significant ($\beta = .23$, $p < .10$). Although, this suggested some moderating effect for religious coping on the relationship between W2 life stress and W3 positive well-being, the results upon follow-up suggest these findings may be due to chance.

For one, greater religious coping was not associated with a consistent decrease in the strength of the relationship between W2 life stress and W3 positive well-being.

Table 17a

Standardized β Coefficients for African Americans and Whites' Wave 2 Stress, Religious Coping, Religious Support, and Interaction in the Prediction of Wave 3 Positive Well-Being.

| | $R^2 \Delta$ | $F \Delta$ | $df \Delta$ | b | $S.E$ | β |
|----------------------------|--------------|------------|-------------|------|-------|---------|
| <u>Whites</u> | | | | | | |
| <u>Step 1</u> Main Effects | .32 | 50.93**** | 5,531 | | | |
| Gender | | | | .10 | .07 | -.05 |
| W2 Pos WB | | | | .42 | .04 | .47**** |
| W2 Stress | | | | -.06 | .03 | -.09 |
| W2 Rel. Support | | | | .01 | .04 | .02 |
| W2 Rel. Coping | | | | .11 | .05 | .11* |
| <u>Step 2</u> Interactions | 0 | .94 | 3,528 | | | |
| Stress X Support | | | | 0 | .03 | -.01 |
| Stress X Coping | | | | -.03 | .04 | -.04 |
| Support X Coping | | | | .04 | .04 | .04 |
| <u>African Americans</u> | | | | | | |
| <u>Step 1</u> Main Effects | .45 | 8.24**** | 5,50 | | | |
| Gender | | | | .05 | .18 | .03 |
| W2 Pos WB | | | | .47 | .12 | .51**** |
| W2 Stress | | | | -.07 | .07 | -.11 |
| W2 Rel. Support | | | | .01 | .09 | .01 |
| W2 Rel. Coping | | | | .26 | .13 | .25† |
| <u>Step 2</u> Interactions | .05 | 1.44 | 3,47 | | | |
| Stress X Support | | | | -.10 | .09 | -.17 |
| Stress X Coping | | | | .19 | .11 | .25† |
| Support X Coping | | | | -.06 | .11 | -.07 |

Notes: †: $p < .10$; *: $p < .05$; **: $p < .01$; ***: $p < .001$; ****: $p < .0001$, Rel. Support= Religious Support, Rel. Coping = Religious Coping, ETOH=Alcohol, Prob=Problems, Neg=Negative, Pos WB=Positive Well-Being.

When religious coping was low, or recentered for 1 SD below the mean, the relationship between stress and later positive well-being was in the expected direction, but marginally significant $\beta = -.29$, $p < .10$. As expected, in the face of increased religious coping (moderate levels at the mean), the relationship between W2 stress and W3 positive well-being was even weaker ($\beta = -.09$, n.s.). However, when religious coping was high, or recentered for 1 SD above the mean, the relationship between W2 stress and W3 positive well-being was in the expected direction, but considerably stronger than the relationship at lower levels of the moderator $\beta = .11$, n.s. Consequently, the results as seen in Table 17b are somewhat inconsistent and lack strong statistical significance, and must be interpreted with caution.

Table 17b

Results of Probes of Religious Support and Religious Coping from Hierarchical Regression Predicting W3 Positive Well-Being.

| | | <i>B for W2</i> | <i>S.E. for W2</i> | <i>β for W2</i> |
|-------------------|-------------------|-----------------|--------------------|-----------------|
| | | <i>Stress</i> | <i>Stress</i> | <i>Stress</i> |
| African Americans | Low on Coping | -.20 | .11 | -.29† |
| | At Mean on Coping | -.06 | .08 | -.09 |
| | High on Coping | .07 | .07 | -.11 |

Notes: †: $p < .10$; *: $p < .05$; **: $p < .01$; ***: $p < .001$; ****: $p < .0001$.

DISCUSSION

The goal of the present investigation was to identify whether the buffering effects of religious moderators (i.e., religious coping and religious support) on the relationship between stress and adjustment differed between Whites and African Americans over time. Prior investigations on African Americans suggest there may be cultural differences in the function of religious moderators depending on how individualistic versus collectivistic the religious coping style.

Hypothesis #1

Hypothesis 1 was that in African American students, religious support would be a better predictor of adjustment than religious coping. At best, the results of the current study provide mixed support for this hypothesis. Several regression analyses were conducted to investigate the relative predictive strength of religious coping and religious support of adjustment in African Americans. Results can be organized by the wave of predictors used (i.e., W1 religious support, W2 religious support, or W3 religious support). Results can also be organized by the component of adjustment being predicted (alcohol-related criterion versus well-being-related criterion). Finally, they can be organized by whether adjustment was predicted by the level of a predictor during a particular wave, versus the change in a predictor between waves. Each of these ways of investigating hypothesis 1 provided varying levels of support and unique understandings

of the relationships that religious coping and religious support has with adjustment in African Americans.

In African Americans, the relationship between predictors and criteria dramatically changes from W1 to W3. W1 religious support was a statistically significant predictor of every W1 and W2 alcohol-related and well-being outcome included in these analyses. It even predicted W3 alcohol use. On the contrary, W1 religious coping in African Americans was only a significant predictor of W1 and W3 positive well-being. However, when W2 predictors were used, W2 religious support only had a marginally significant relationship with W3 alcohol use. W2 religious coping performed much better by significantly predicting every well-being related variable included in W2 and W3 analyses. Similarly, W3 religious coping in African Americans predicted every W3 well-being related variable and had a marginally significant relationship with W3 alcohol problems. W3 religious support in African Americans was not a statistically significant predictor of any W3 variables included in these analyses.

To summarize, religious support in African American students, just prior to the start of their freshman year, appeared to be a stronger predictor than religious coping of adjustment up to a year later. However, by the completion of their first year in college, religious support in African American students was unable to consistently predict any components of adjustment, whereas religious coping developed into a robust predictor of all well-being variables up to the end of their second year. These discrepant results hinge on the wave of predictors used in the analyses and provide only mixed support for hypothesis 1 since the predicted pattern of results only emerged using W1 predictors.

In order to get an overall sense of whether religious support was a stronger predictor of adjustment in African Americans than religious coping, the mean betas for all of the relationships between the predictors and each adjustment variables were calculated. In African Americans, religious support had larger mean beta values than religious coping when predicting alcohol use and problems. However, religious coping had much larger mean beta values than religious support when predicting well-being variables. Thus, there again appears to only be mixed support for hypothesis 1 since the predicted pattern of results only emerged for alcohol-related components of adjustment.

Analyses investigating the relationships that changes in the level of predictors over time had with changes in adjustment were largely unresponsive of hypothesis 1. Actually, most results were counterintuitive regarding the relationship religious support had with adjustment, with the exception of the meaningful relationship between change in well-being and religious support over the course of African American students' second year. Increased religious support over the course of African American's first year predicted increased alcohol problems just prior to starting the second year. Similarly, increased religious support between leaving for college and beginning the third year predicted increased alcohol problems over this period. In contrast, religious coping performed much better, and predicted increased global well-being, positive well-being, and decreased negative well-being from W1 to W3 in the expected direction.

Hypothesis #2

Hypothesis 2 was that in White students, religious coping and religious support would be comparable predictors of adjustment. Again, there was mixed support for this hypothesis. Several regression analyses were conducted to investigate the relative

predictive strength of religious coping and religious support of adjustment in Whites.

Depending on how the results of these analyses are organized, a different story unfolds about the relationships the predictors have with adjustment in Whites. As was presented in African Americans, results will be discussed by the wave of predictors used (i.e., W1 religious support, W2 religious support, or W3 religious support), the component of adjustment being predicted (alcohol-related criterion versus well-being-related criterion), and analyses using either a single value versus a change in value of the predictors over time.

In Whites, the relationship between predictors and criteria remained stable over time. W1 religious support was a statistically significant predictor of every adjustment variable included in every analysis at each wave. W1 religious coping in Whites was a statistically significant predictor of global well-being, positive well-being, and alcohol use (with the exception of W3) at each wave these adjustment variables were included in the analyses. W1 religious coping did not predict alcohol problems and negative well-being at each wave these variables were included in the regression. Similarly, W2 religious support was meaningfully related to all W2 and W3 adjustment variables included in the regression analyses, and W2 religious coping was meaningfully related to the same W2 and W3 adjustment variables as W1 religious coping. In fact, the same pattern of results was produced using W3 religious support and religious coping as predictors.

To summarize, religious support and religious coping in White students remained stable predictors of specific components of adjustment from the summer just prior to the start of their freshman year (W1) to the completion of their third year (W3). Initially, it

appeared that religious support was a stronger predictor of adjustment than religious coping since it was meaningfully related to each adjustment criterion, across all waves of data, while religious coping was not. However, to get an overall sense of whether these predictors are comparable as was predicted, mean betas for all of the relationships between the predictors and adjustment variables were calculated.

In Whites, religious support had larger mean beta values than religious coping when predicting alcohol use, alcohol problems, global well-being, and positive well-being. However, religious coping had much larger mean beta values than religious support when predicting negative well-being. Furthermore, mean beta values for religious coping and religious support when predicting global well-being and positive well-being were much less disparate in Whites than in African Americans. In other words, it is fair to say in support of hypothesis 2, that the average strength of the predictors are more comparable with respect to global well-being and positive well-being than in African Americans. However, looking just at Whites, the relationships between predictors and other adjustment variables was more characteristic of what was hypothesized in African Americans. Thus, there again appears to be only mixed support for hypothesis 2 since it hinges on the components of adjustment being predicted.

Analyses investigating the relationship that changes in predictors over time had with changes in adjustment were also only somewhat supportive of hypothesis 2. Increased religious support over the course of White students' first year predicted increased global well-being just prior to starting the second year. Changes in religious coping during this time (from W1 to W2) did not have any statistically significant relationships with alcohol use, alcohol problems, or well-being by the start of their

second year. When predicting change in adjustment between the start of the second year (W2) and end of the second year (W3), increased religious coping from W1 to W2 significantly predicted decreased alcohol use, decreased alcohol problems, and oddly, decreased global well-being. Although similar or comparable patterns in religious support and coping were not supported in the preceding analysis as predicted by hypothesis 2, they did emerge when predicting change between W1 and W3 global well-being and positive well-being from the change in level of support and coping from W1 to W3.

Hypothesis #3

Hypothesis 3 was that in African American students, relative to religious coping, religious support would be a stronger moderator of the effects of life stress on adjustment. Several regression analyses were conducted to investigate the relative strength of these moderators on the relationship between life stress and adjustment. There are two different ways to present the findings concerning hypothesis 3. Support for hypothesis 3 can be evaluated by within-wave analyses with W2 stress and W2 moderators predicting W2 adjustment variables. Alternatively, support can also be evaluated prospectively with W2 stress and W2 moderators predicting W3 adjustment variables. The latter is a more methodologically rigorous approach to appraising the statistical support for hypothesis 3, and was largely supportive. Within-wave analyses were by and large unresponsive of hypothesis 3. Together, these approaches provided mixed support, and individually contributed to a more nuanced understanding of the impact that religious coping and religious support has on the relationship between stress and adjustment in African American college students. The following is a summary of the

within-wave analyses, followed by a summary of the prospective analyses dealing with hypothesis 3.

In African American students, there was a statistically significant interaction between W2 religious support and W2 stress, and W3 religious support and W3 stress, which on both occasions significantly moderated the relationship between stress and alcohol use at these time points. After probing these relationships at W2 and W3 to identify the direction of the interactions, results supported that in African Americans with higher levels of religious support, greater stress predicted greater alcohol use. These findings were quite paradoxical, clearly unexpected, and undermines the fact that religious support, as opposed to religious coping, significantly moderated the relationships between stress and adjustment as hypothesized, on both of these occasions. Furthermore, W3 moderators did not significantly interact with W3 stress to impact the relationship between stress and W3 global well-being or W3 alcohol problems.

No specific predictions were made concerning religious support by religious coping interactions. However, these analyses were also explored to gain a better understanding of the paradoxical relationships that change in predictors has with change in criterions discussed previously. There was a significant interaction between W2 religious coping and W2 religious support, which moderated the relationship between W2 stress and W2 alcohol problems. Follow up analyses suggested that as W2 religious support increased in African Americans, the relationship between W2 religious coping and W2 alcohol problems got stronger. Potential explanations for these findings will be explored later in greater detail.

Again, prospective analysis of hypothesis 3 in African Americans is more methodologically rigorous than the within-wave analyses discussed thus far. These prospective analyses were strongly supportive of hypothesis 3. The following summarizes the results of the regression analysis using W2 predictors of W3 alcohol use.

Specifically, in step one of the regression, there was an overall significant ($p < .0001$) main effect for W2 stress ($\beta = .27^{**}$) predicting W3 alcohol use while controlling for W2 levels of alcohol use. In step two, there was a significant interaction between W2 religious support and W2 stress ($p < .01$). Subsequent analyses demonstrated that W2 stress was strongly predictive of W3 alcohol use in those low in W2 religious support, moderately related to W3 alcohol use in those with average W2 religious support, and unrelated to W3 alcohol use in those high in W2 religious support. In further support of this finding, the same pattern of results was replicated for W3 alcohol problems in African Americans after probing the W2 religious support by W2 stress interaction despite the fact it did not reach statistical significance. It was reasonable to believe that a significant effect may have been masked considering the size of the beta for stress.

Furthermore, no significant religious coping by stress interactions surfaced to impact the relationships between W2 stress and W3 alcohol use or problems as predicted by hypothesis 3. There was a marginally significant interaction between W2 religious coping and W2 stress ($p < .10$) predicted W3 global well-being. However, subsequent analyses strongly suggest this finding is not interpretable.

Hypothesis #4

Hypothesis 4 was that in White students, both religious coping and religious support would moderate the effects of life stress on adjustment. Regression analyses

were conducted to investigate the impact of these moderators on the relationship between life stress and adjustment. Again, support for hypothesis 4 can be presented by within-wave analyses with W2 stress and W2 moderators predicting W2 adjustment variables. Alternatively, support can also be presented prospectively with W2 stress and W2 moderators predicting W3 adjustment variables, which is a more methodologically rigorous approach. Neither method provided clear support for hypothesis 4. The following is a summary of the within wave analyses, followed by a summary of the prospective analyses dealing with hypothesis 4.

In White students, none of the within-wave regression analyses directly produced the pattern of results predicted in hypothesis 4. W2 within-wave analyses produced the same counterintuitive findings discussed earlier in African Americans. W2 religious support and W2 stress significantly moderated the relationship between stress and alcohol use, and stress and alcohol problems. After probing both of these relationships at W2 to identify the direction of the interactions, results supported that in Whites with higher levels of religious support, the relationships W2 stress has with W2 alcohol use and W2 alcohol problems gets stronger.

More unexpected results were produced by regression analyses that included W3 predictors (stress, religious support, and religious coping), and W3 adjustment variables (alcohol use, alcohol problems, and well-being). In each case, W3 religious coping and religious support significantly interacted with each other to moderate the relationship between W3 stress and W3 adjustment variables. Follow up regression analyses supported that for White students low in W3 religious support, W3 religious coping is only weakly associated with W3 alcohol use and W3 global well-being. Actually, only in

Whites student with average or high W3 religious support was W3 religious coping inversely related to W3 alcohol problems, and strongly associated with W3 alcohol use, and W3 global well-being. It is debatable whether or not the interdependence of these moderators in Whites supports them being comparable, as was predicted in hypothesis 4. However, it is fair to say that at best this provides only limited support for hypothesis 4 since the interaction of religious support and religious coping was clearly not the type of evidence anticipated for hypothesis 4.

Again, prospective analysis of hypothesis 4 in White students is a more methodologically rigorous approach than the within-wave analyses discussed thus far. In these analyses, religious support and religious coping significantly moderated the relationships between stress and only 2 out of the 4 adjustment criteria (negative well-being and alcohol problems) included in these analyses.

Specifically, in step two of the regression, there was a significant interaction between W2 religious support and W2 religious coping ($p < .01$). Subsequent analyses demonstrated that W2 religious coping was only inversely related to W3 alcohol problems in individuals high in W2 religious support. This followed the same pattern of results reported for the within-wave analyses discussed above, and strongly suggests that these moderators in White students work in tandem. There was also a significant interaction between W2 religious coping and W2 stress ($p < .05$), suggesting W2 religious coping moderated the relationship between W2 stress and W3 negative well-being. However, subsequent analyses supported that increased levels of religious coping was associated with a stronger relationship between W2 stress and W3 negative well-being. Together, these prospective analyses provided limited support for hypothesis 4.

Alternative Explanations

Clearly, the number of adjustment variables, several waves of information, and various methods of analyzing the data made it difficult to obtain complete support for the hypotheses. However, this comprehensive approach provided the breadth of data required to detect patterns in the associations between religious predictors and adjustment over time, which fosters a richer and more nuanced understanding of how these constructs interact. The following are some alternative hypotheses to explain some unexpected findings, and unsupported predictions in the current study.

Loss of Religious Support Hypothesis. Religious support in African Americans was a statistically significant predictor of every W1 and W2 measure of adjustment used in these analyses. In fact, W1 religious support in African Americans even had a statistically significant relationship with W3 alcohol use. Taking this into consideration, why did W2 and W3 religious support barely predict any W2 or W3 adjustment variables? Why did increased religious support between W1 and W2 and between W1 and W3 predict more drinking problems across these time intervals?

Finally, why does the mean drinking behavior of African Americans increase at a rate much faster than White students, despite the well-established research findings that suggest the opposite? Previous findings support that Whites score higher on alcohol-related measures were supported. However, the significance of differences between African Americans and Whites typical drink quantity, alcohol problems, and peak drinking decreased from the summer before leaving for college to the beginning of their junior year. By W3 differences between Whites and African Americans in drinking frequency and binge drinking were no longer significant. The pattern of results in the

current study provides some support that a loss of religious support in African Americans after relocating to college may provide some explanation for all of the above.

Terre Haute, Indiana is approximately 86% White, and its neighboring cities such as West Terre Haute are even less diverse (97% White and .04% African American). The vast majority of African American students residing on campus have permanent residence in cities such as Indianapolis or Gary, Indiana, which are not in close proximity to the school. These students are confronted with different social and cultural norms after relocating to college, and would intuitively experience a loss of religious support after moving from their home church.

Perhaps a loss of religious support in the face of being confronted with culturally different drinking norms explains African Americans' sharp increases on mean alcohol-related measures, and decreases on mean well-being related measures from W1 to W3. After all, older studies have supported that social-cultural norms have a greater influence on the drinking behavior of African Americans than Whites (Herd, 1996). The current study's results may further substantiate the impact of decreased religious support on African Americans' adjustment, and provide some explanation for the unexpected findings and mixed support acquired for hypothesis 1 in the current study. The following summarizes the results that support this loss of religious support hypothesis, followed by some results that are not so consistent with this hypothesis.

In African Americans, the amount of reported religious support experienced at their permanent residence prior to relocating to college was a robust predictor of all well-being and drinking-related variables at W1, W2, and some at W3. However, following a decrease in mean religious support from W1 to W2, the amount of reported religious

support experienced following their first year of college (W2) was not meaningfully related to any well-being or alcohol-related variables at this time or at one year follow-up. Although African Americans experienced a slight increase in mean religious support between this time (W2) and the completion of their second year (W3), it still did not equal their reported religious support before relocating to college. Although the change in religious support between these times significantly predicted global well-being (change from W2 to W3), the level of W3 religious support was still not meaningfully related to any alcohol or well-being variables at this time. In summary, religious support was a less and less robust predictor of adjustment with each year African Americans were away from their source of religious support, presumably at their permanent residence.

The following are some explanations for results that were not consistent with this hypothesis. For example, if religious support in African Americans prior to leaving for college was such a robust predictor, then why was it unable to predict adjustment at W3 like it did in Whites? Potentially, this finding could be the result of the lower power in the African American sample compared to the White sample. Another inconsistency is that religious support in African Americans increased between W2 and W3 despite them being away from home. However, this may be explained by African American students working to mobilize potential sources of religious support.

Mobilization effect. This mobilization effect may also explain why increased religious support from W1 to W2, and W1 to W3 predicted increased alcohol problems in the analyses conducted for hypothesis 1. Furthermore, it may also explain why W2 and W3 stress interacted with W2 and W3 religious support to predict increased W2 and W3 alcohol use in the within-wave moderation analyses conducted for hypothesis 3. All of

these analyses provide only a snapshot of the relationships between these variables. It could be that increased stress, alcohol problems, and alcohol use in all of these instances were predicting increased efforts by African American students to obtain or mobilize their sources of religious support. In other words, since directionality could have impacted all of these within-wave analyses, it is possible that stress, alcohol use, and alcohol problems were predicting increased religious support, instead of the other way around. Increased religious support reported by African Americans between W2 and W3 provides some support for this mobilization effect. The next section further explores the possibility of a directionality effect.

Directionality Hypothesis. Again, a plausible explanation for the number of paradoxical relationships that religious support and religious coping had with adjustment criterions may be explained by the directionality of these relationships. For instance, it may be that highly religious students, as indicated by reported religious support, are experiencing more life stress as a result of increased alcohol use, alcohol problems, and decreased well-being. On the contrary, those low in religiousness, as indicated by low reported religious support, are not experiencing life stress as a result of increased alcohol use and problems because it is less incompatible with their belief system. Jang and Johnson's (2003) investigation produced a similar pattern of results.

The results of Jang and Johnson (2003), which used an adult sample, suggested that African Americans high in religiosity were more likely to react to strain with depressed and anxious feelings, but not alcohol use, compared to those low in religiousness. Is it possible that depressed and anxious feelings predicted strain in the highly religious in Jang and Johnson (2003), and increased alcohol use (resulting from

change in drinking norms) predicted stress in the highly religious (as indicated by high religious support) in the current study? In short, the answer to both of these possibilities is yes.

In the current study, if it is true that the highly religious, as indicated by religious support, are experiencing life stress as a result of their increased alcohol use and its incompatibility with their beliefs, then the paradoxical findings, which were only found in the within-wave analyses when testing hypothesis 3, may have been confounded by the directionality of the relationship between stress and alcohol use. Therefore, a more methodologically rigorous test would be to examine these relationships prospectively. In other words, W2 stress and W2 religious support could be used to predict W3 alcohol-related variables to account for this directionality hypothesis. When this was done, results were strongly supportive of hypothesis 3. This further substantiates that directionality may explain the paradoxical relationships found in the current study, which potentially stem from African Americans mobilizing their religious support in the face of increased alcohol use and problems, and/or stress being the upshot of religious support (used as a proxy for religiosity) coexisting with religiously incompatible drinking behaviors.

Compensation Hypothesis. Another inconsistency with the decreased religious support hypothesis in African Americans is that Whites also steadily decreased in mean religious support from W1 to W3. However, religious support continued to be a robust predictor of adjustment in this group even at W2 and W3. Also, why did religious coping in African Americans become an overall more robust predictor of adjustment as religious support became a weaker predictor over time? Furthermore, why in African Americans,

as W2 religious support increased, W2 religious coping became a better predictor of alcohol problems? A potential answer to these questions is that African American students used religious coping to compensate for decreased religious support in the face of increased alcohol use and problems, and decreased well-being.

In African American students, following their first year away from their permanent residence, religious coping had risen from significantly predicting 18% of adjustment variables at W1 to 50% of adjustment variables at W2, and 80% of adjustment variables at W3. Religious support had declined from significantly predicting 73% of adjustment variables at W1, to 13% of adjustment variables at W2, and no adjustment variables at W3. Furthermore, the change in African Americans' reported religious coping from W1 to W3 significantly predicted change in well-being outcomes from W1 to W3. W3 religious coping was also a very strong predictor of W3 well-being, even while controlling for previous levels of well-being. Similarly, W2 religious coping marginally predicted W3 positive well-being, even while controlling for previous levels of the criterion. Unfortunately, follow-up analyses were unclear and did not support any stress buffering effect for religious coping. Nevertheless, the pattern of results overtime clearly demonstrates an increasing effect for religious coping and decreasing effect for religious support.

In Whites, mean religious coping and religious support also decreased despite the alternative "loss of religious support hypothesis" offered to explain African Americans decreased religious support as a consequence of relocating to school. However, this does not completely refute this hypothesis, since religious support may have in fact remained more accessible to Whites than African Americans, but less frequently used.

Furthermore, African Americans experienced greater decreases in mean religious support over time than Whites. With respect to this “compensation hypothesis,” White students’ mean religious coping did not steadily increase over time with decreased religious support as it did in African American students. Furthermore, despite the decreased religious support in Whites, it still predicted 100% of all adjustment variables used in the regression analyses for hypothesis 2, whereas religious coping did not rise to predict greater percentages of adjustment variables used in these regression analyses over time as seen in African Americans.

To summarize the support for this compensatory effect, in African Americans we obtained a clear pattern of increased mean religious coping with decreased mean religious support that was not seen in White students. Furthermore in African Americans, we obtained a clear pattern of increasing percentages of adjustment variables included in analyses being predicted by religious coping, and a decreasing percentage of adjustment variables being predicted by religious support over time. Although White students also experienced a decrease in religious support, we did not obtain this compensatory pattern seen in African Americans, which potentially suggests Whites maintained adequate levels of religious support over time, and African Americans did not.

One finding that appears to disparage this “compensation hypothesis” is the religious support by religious coping interaction found for W2 alcohol problems in African Americans. As W2 religious support increased, the relationship between W2 religious coping and W2 alcohol problems got stronger. Intuitively, a compensatory effect would look the opposite, such that the relationship between religious coping and alcohol problems would get stronger with decreased religious support. However, there is

no theoretical reason to suggest that one religious predictor (religious support) in the presence of another (religious coping) may have a deleterious effect on the other's relationship with adjustment. This would be more consistent with a replacement effect. In other words, in the absence of one predictor (religious support), another incompatible predictor emerges to take its place (religious coping). Religious support and religious coping are not incompatible, and actually are highly correlated.

The results of this study provides some evidence that religious support, which decreased from W1 to W2, facilitated the effect of religious coping on adjustment, since religious support may have been too low to directly impact adjustment at this time. This is consistent with a compensatory hypothesis. There is no clear explanation for why religious coping and religious support interacted more in White students than African American students. The data suggests that religious support at later waves had predictive value in Whites, but not in African Americans. Perhaps these significant support by coping interactions in Whites, despite the predictive value of religious support alone suggests these variables work in tandem. On the contrary, African Americans may primarily rely on religious support, and if need be religious coping, but not use both if religious support is present. However, there is limited data to support this idea, which may be pursued in future research.

Another possibility is that the overlap in the constructs themselves is behind the support by coping interactions. Increasing religious support may appear to facilitate religious coping's buffering effects merely because religious support increases to a degree as religious coping increases due to conceptual overlap. Perhaps in Whites, religious coping and religious support are more conceptually similar constructs than in

African Americans, which may explain why more support by coping interactions emerged in Whites.

General Strain Theory (Internal and External Domains of Coping and Response).

Another limitation of the proposed compensatory effect reviewed in the previous section is that religious coping in African Americans rose to predict significantly more well-being adjustment variables, but not alcohol-related variables. If African Americans use religious coping to compensate for a loss of religious support, then why is it not significantly associated with alcohol use and problems? Furthermore, why across race do the mean betas of the regression analyses strongly suggest that religious support is more predictive of alcohol use and problems, but religious coping is more predictive of well-being? Finally, why did the current study's results fail to support hypotheses 3 and 4 that in Whites, religious support and religious coping would be comparable predictors and moderators of adjustment?

In support of General Strain Theory (GST), Jang and Johnson (2003) found that self-directed negative affect had larger effects on self-directed deviant responses to strain (i.e., drug use) than outer-directed deviant responses to strain (fighting/arguing). In other words, the domain of strain (internal or external) predicted the domain of deviant coping response (internal or external) in African Americans. Similarly, the results of the current study support a similar pattern of relationships in African Americans and Whites. Religious support, being an external means of coping involving others, was on average more meaningfully associated with alcohol use and problems, which were potentially acting as external sources of strain depending on the directionality of these relationships. Furthermore, religious coping, being an internal means of coping, was on average more

meaningfully associated with well-being, which may have been acting as an internal source of strain in the highly religious.

To summarize, regardless of these directionality issues, there is a strong indication of a relationship between the external and internal domains of the predictors and adjustment variables in the current study, which replicated Jang and Johnson's (2003) results concerning GST. The lack of support for the comparability of religious support and religious coping in Whites (hypotheses 2 and 4) may be largely the result of the different domains of predictors and adjustment criteria used. This also skews the support for hypotheses 1 and 3 since there were more well-being adjustment criteria available across waves than alcohol-related variables.

Furthermore, the measure of stress in the current study may not have adequately assessed strain considering Whites reported more stress at W2 and W3 than African Americans. The measure used in the current study appears to have content (see Appendix D) representative of Agnew's (1992) three categories of strain (failure to achieve positively valued goals, the actual or anticipated removal of something positively valued, and the actual or anticipated experience of something negative). However, maybe a measure of strain that would have followed Agnew's (1992) categories more closely, such as the measure used by Jang and Johnson (2003), would have better assessed the level of strain experienced by African Americans. It would also include goals, positively valued objects, and negative experiences typically encountered by African Americans residing in rural and predominantly White communities.

Another explanation for the differences in stress reported by African Americans and Whites may be partially attributable to attrition in the African American sample.

Perhaps African Americans highest in stress did not finish their first year and were not represented in W2 measures of stress. On the other hand, it is possible these differences in reported stress are attributable to African Americans coping abilities; namely, religious support and religious coping.

Consistent with GST, stress reliably predicted adjustment in the current study. At the same time according to GST, the relationship between stress and adjustment is a function of coping. Results in the current study partially supported that the relationship between stress and adjustment was moderated by coping efforts in African Americans in prospective analyses that controlled for directionality, as discussed earlier. Taken together with results that supported the connection between internal and external predictors and coping style, the current study appears to add further support for GST.

Limitations

The current study made use of archival data to explore a variety of cultural specific issues related to the application of religion and spirituality to managing life stress over time. Obtaining a comparable sample size for both African Americans and Whites complicates this type of research, particularly when analyzing longitudinal data. The first wave of data in the current study had a reasonable sample of African Americans and Whites for our analyses. However, analyses of later waves had substantially less power, which is a clear limitation of the current study.

It has historically been the norm to use non-minority comparative groups in cultural-specific investigations. However, there is some division in the scientific community about the appropriateness of comparing African Americans to Whites in this type of research. Some have argued that underlying this methodology is the assumption

that findings in African American research only have meaning relative to the presence or absence of that finding in Whites. Consequently, White is assumed to be normal, and anything else is a deviation from the norm, making it non-White. On multiple levels, this may have been a limitation of the present study.

Another limitation of our methodology may have been our reliance on quantitative data. Qualitative interviews may have tapped aspects of religious coping mechanisms among African Americans that were not captured by the current study's measures, which have been developed and normed on largely White samples. There may be as many different styles of interpreting and carrying out religious coping and support as there are cultures, and surely belief systems.

The current study did not take into account the stage of racial identity development of respondents. This raises another philosophical question about what is, and who is African American. Unfortunately, only approximately 15% of African Americans earn undergraduate degrees, which bring into question the college-student sample's representativeness of the African American population. Neither educational achievement, socio-economic status, or group identification were controlled for in the current study, which limit the generalizability of the current study's findings.

Furthermore, the differences in the domains between the well-being and alcohol-related adjustment variables makes it difficult to get an overall impression of how religious support and religious coping impact adjustment. The data and previous studies suggest that internal coping styles are more closely associated with internal stressors, and external coping styles with external stressors. This complicated comparing the predictive power of religious support (external) and religious coping (internal) for adjustment,

which was comprised of external (alcohol) and internal (well-being) adjustment variables.

Future Directions

Although the current study made some meaningful findings, future research should include larger samples of African Americans. This would likely produce a clearer pattern of results, and aid in determining whether the current study's hypotheses were impacted by low power at later waves or a true loss of religious support when African American students relocate for college.

Although the limitations of comparing African Americans and Whites in research are debatable, it is important to keep in mind that it has been well-established that there is more within-group, than between-group heterogeneity across cultures. Therefore, future research should move in the direction of investigating religious support and religious coping in African American samples across different parts of the country. Investigating urban versus rural, and deep south versus northeast samples may produce some interesting results.

All together, more research using community samples should be conducted in light of the representativeness of the college-student sample who are clearly not representative of the average African American with respect to formal educational achievement. Alternatively, future research should include measures of racial identity development to better control for this variable, or investigate racial identity as a potential moderator.

Similarly, there is a great deal of diversity in the religious experience of African Americans across various denominations. Future research on the function of religious

coping and support in African Americans who attend Pentecostal, Baptist, Apostolic, Non-denominational, Catholic, and other churches would add considerable depth to the work done thus far in this area. Additionally, research on non-Christian samples of African Americans (i.e., the Nation of Islam, Five Percent Nation, etc.) would be a unique addition to the current body of literature on religiousness and spirituality.

In the future, when comparing religious coping and religious support, the dependent variables should be equally distributed across external and internal domains. This may circumvent the predictive bias that may have been demonstrated in this study. Also, future research could benefit from additional waves of data to get a better sense of whether a mobilizing effect exists when there is a loss of a preferred means of coping. If wave 4 data was available, a consistent increase in religious support would have further substantiated this hypothesis.

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APPENDIXES

APPENDIX A

Demographic Questions

1) Sex _____ a) Female _____ b) Male

2) Age:

a = 17 or less b = 18 c = 19 d = 20 e = 21 f = 22 g = 23
or more

3) What is your ethnic background? (Select one only)

- _____ a) Hispanic or Latino
_____ b) Not Hispanic or Latino

4) What is your race? (Select one only)

- _____ a) African American
_____ b) African
_____ c) Asian-American
_____ d) Asian
_____ e) Caucasian (White, Non-Hispanic)
_____ f) Native American or Alaska Native
_____ g) Native Hawaiian or Pacific Islander
_____ h) Mixed Race
_____ i) Other

5) Marital Status

- _____ a) single/never married
_____ b) living as married
_____ c) married
_____ d) divorced
_____ e) other (widowed, separated, etc.)

6) Religious Denomination - Select the one item that best describes your current religious identification:

- 1) African Methodist Episcopal
- 2) Agnostic
- 3) Anglican
- 4) Assembly of God
- 5) Atheist
- 6) Baptist
- 7) American Baptist
- 8) Southern Baptist Convention
- 9) Buddhist / Buddhism
- 10) Church of the Brethren
- 11) Church of Christ
- 12) United Church of Christ
- 13) Church of Christ, Scientist (Christian Science)
- 14) Church of God
- 15) Church of Jesus Christ of Latter Day Saints (LDS /Mormon)
- 16) Church of the Nazarene
- 17) Congregational Churches
- 18) Episcopal
- 19) Evangelical Free Church
- 20) Hindu / Hinduism
- 21) Jewish / Judaism
- 22) Lutheran Church - ELCA
- 23) Lutheran Church - Missouri Synod
- 24) Lutheran Church - WELS
- 25) Mennonite
- 26) Methodist
- 27) United Methodist
- 28) Muslim/Islam
- 29) Eastern Orthodox Churches
- 30) Pagan / Wiccan
- 31) Pentecostal
- 32) Presbyterian Church
- 33) Roman Catholic
- 34) Seventh Day Adventist
- 35) Society of Friends (Quaker)
- 36) Taoist
- 37) Unitarian-Universalist
- 38) Wesleyan Church
- 39) Other

APPENDIX B

Positive & Negative Religious Coping

Think about how you try to understand and deal with major problems in your life. To what extent is each of the following involved in the way you cope? Circle the number corresponding to your answer.

| | | | | |
|--|-----------------|---------------|------------------|-------------------|
| 242. When I am facing a major problem in my life I think about how my life is part of a larger spiritual force. | Not at all 1 | Somewhat 2 | Quite a bit 3 | A great deal 4 |
| 243. When I am facing a major problem in my life I feel that stressful situations are God's way of punishing me for my sins or lack of spirituality. | Not at all 1 | Somewhat 2 | Quite a bit 3 | A great deal 4 |
| 244. When I am facing a major problem in my life I work together with God as partners to get through hard times. | Not at all 1 | Somewhat 2 | Quite a bit 3 | A great deal 4 |
| 245. When I am facing a major problem in my life I wonder whether God has abandoned me. | Not at all 1 | Somewhat 2 | Quite a bit 3 | A great deal 4 |
| 246. When I am facing a major problem in my life I look to God for strength, support, and guidance in crises. | Not at all 1 | Somewhat 2 | Quite a bit 3 | A great deal 4 |
| 247. When I am facing a major problem in my life I try to make sense of the situation and decide what to do without relying on God. | Not at all 1 | Somewhat 2 | Quite a bit 3 | A great deal 4 |
| 248. When I am facing a major problem in my life I try to find the lesson from God in crises. | Not at all 1 | Somewhat 2 | Quite a bit 3 | A great deal 4 |
| 249. When I am facing a major problem in my life I question whether God really exists. | Not at all 1 | Somewhat 2 | Quite a bit 3 | A great deal 4 |
| 250. When I am facing a major problem in my life I confess my sins and ask for God's forgiveness. | Not at all 1 | Somewhat 2 | Quite a bit 3 | A great deal 4 |
| 251. When I am facing a major problem in my life I express anger at God for letting terrible things happen. | Not at all 1 | Somewhat 2 | Quite a bit 3 | A great deal 4 |
| 252. When I am facing a major problem in my life I do my best and then turn the situation over to God. | Not at all 1 | Somewhat 2 | Quite a bit 3 | A great deal 4 |
| 253. When I am facing a major problem in my life I wonder what I did for God to punish me. | Not at all 1 | Somewhat 2 | Quite a bit 3 | A great deal 4 |
| 256. When I am facing a major problem in my life I do what I can and put the rest in God's hands. | Not at all 1 | Somewhat 2 | Quite a bit 3 | A great deal 4 |

| | | | | |
|--|-----------------|---------------|------------------|-------------------|
| 257. When I am facing a major problem in my life I decide that God is punishing me for my sins. | Not at all 1 | Somewhat 2 | Quite a bit 3 | A great deal 4 |
| 260. When I am facing a major problem in my life I take control over what I can, and give the rest to God. | Not at all 1 | Somewhat 2 | Quite a bit 3 | A great deal 4 |
| 261. When I am facing a major problem in my life I feel punished by God for my lack of devotion. | Not at all 1 | Somewhat 2 | Quite a bit 3 | A great deal 4 |

APPENDIX C

Positive & Negative Religious Support

The following questions deal with the relationships you've had with the people in your church, congregation, or religious group. (If these items do not seem to apply to you or if you do not attend a church or belong to a congregation, circle "Never" for the next three items)

| | | | | |
|--|------------|---------------------|-------------------|-----------------|
| 264. How often do the people in your congregation make you feel loved and cared for? | Never 1 | Once in awhile 2 | Fairly often 3 | Very often 4 |
| 265. How often do the people in your congregation listen to you talk about your private problems and concerns? | Never 1 | Once in awhile 2 | Fairly often 3 | Very often 4 |
| 266. How often do the people in your congregation express interest and concern for your well-being? | Never 1 | Once in awhile 2 | Fairly often 3 | Very often 4 |

These next questions are designed to find out how much help the people in your congregation would provide if you need it in the future. (If these items do not seem to apply to you or if you do not attend a church or belong to a congregation, mark "None" for the next three items). Circle the number corresponding to your answer.

| | | | | |
|---|-----------|---------------|-----------|-------------------|
| 267. If you were ill, how much would the people in your congregation help you out? | None 1 | A little 2 | Some 3 | A great deal 4 |
| 268. If you had a problem or were faced with a difficult situation, how much comfort would the people in your congregation be willing to give you? | None 1 | A little 2 | Some 3 | A great deal 4 |
| 269. If you needed to know where to go to get help with a problem you were having, how much would the people in your congregation be willing to help out? | None 1 | A little 2 | Some 3 | A great deal 4 |

Sometimes the contact we have with others is not always pleasant. (If these items do not seem to apply to you or if you do not attend a church or belong to a congregation, mark "Never" for the next three items). Circle the number corresponding to your answer.

| | | | | |
|---|------------|---------------------|-------------------|-----------------|
| 270. How often do the people in your congregation make too many demands on you? | Never 1 | Once in awhile 2 | Fairly often 3 | Very often 4 |
| 271. How often are the people in your congregation critical of you and the things you do? | Never 1 | Once in awhile 2 | Fairly often 3 | Very often 4 |
| 272. How often do people in your congregation take advantage of you? | Never 1 | Once in awhile 2 | Fairly often 3 | Very often 4 |

APPENDIX D

Life Events Questionnaire

Using the following scale, rate how much each of the following statements reflects your experiences here at ISU:

- 1 = strongly disagree
- 2 = disagree
- 3 = disagree somewhat
- 4 = not sure or neither agree nor disagree
- 5 = agree somewhat
- 6 = agree
- 7 = strongly agree

- 256) Since school started in August, I have had conflicts with my parents, boyfriend/girlfriend, roommate, or with another person close to me.
- 257) Since school started in August, I have had difficulty with my classes.
- 258) Since school started in August, I have had problems with my job.
- 259) I have been under financial strain since starting college.
- 260) Since August, I have had health problems or been sick a lot.
- 261) Since starting college, a person close to me has been ill or died.
- 262) During this school year, a lot of stressful things have happened to me.
- 263) I have been under a great deal of pressure this school year.
- 264) I have been through a lot of changes since starting college.
- 265) A lot of bad things have happened to me since starting college.
- 266) This school year I have had a lot of trouble reaching important goals in my life.

APPENDIX E

Alcohol Consumption

For questions 38, 39, 40 and 41 (the next four questions) please choose the answer that comes closest to describing your drinking during the current school year, -- that is, since classes started in August.

38) How often did you consume alcoholic beverages during the current school year?

- 1) Never
- 2) Less than once a month
- 3) About once a month
- 4) Two times a month
- 5) Three times a months
- 6) About once a week
- 7) Two days per week
- 8) Three days per week
- 9) Four days per week
- 10) Five days per week
- 11) Six or seven days per week

In this questionnaire, one "drink" is equal to 1 beer or wine cooler (12 ounces), 1 glass of wine (4 ounces), or 1 shot of liquor (1 1/4 ounces).

39) What is your usual quantity of alcoholic beverages consumed at any one drinking occasion during the current school year?

- A) I did not drink at all during this school year
- B) 1 bottle (or can) of beer, 1 wine cooler, 1 glass of wine, or 1 mixed drink
- C) 2 bottles, wine coolers, wine glasses, mixed drinks
- D) 3 bottles, wine coolers, wine glasses, mixed drinks
- E) 4 bottles, wine coolers, wine glasses, mixed drinks
- F) 5 bottles, wine coolers, wine glasses, mixed drinks
- G) 6 bottles, wine coolers, wine glasses, mixed drinks
- H) 7 or 8 bottles, wine coolers, etc.
- I) 9 or 10 bottles, wine coolers, etc.
- J) 11 or 12 bottles, wine coolers, etc.
- K) 13 or more bottles, wine coolers, etc.

40) Think of the occasion you drank the most during this school year. How much did you drink?

- | | |
|---|---|
| <input type="checkbox"/> A) I did not drink at all during this school year. | <input type="checkbox"/> G) 1-12 drinks |
| <input type="checkbox"/> B) 1-2 drinks | <input type="checkbox"/> H) 13-14 drinks |
| <input type="checkbox"/> C) 3-4 drinks | <input type="checkbox"/> I) 15-16 drinks |
| <input type="checkbox"/> D) 5-6 drinks | <input type="checkbox"/> J) 17-18 drinks |
| <input type="checkbox"/> E) 7-8 drinks | <input type="checkbox"/> K) 19 or more drinks |
| <input type="checkbox"/> F) 9-10 drinks | |

How many times in this current school year did you drink five or more bottles or cans of beer, or wine coolers, glasses of wine, or mixed drinks on a single occasion?

- | | |
|---------------------------------|-------------------------------------|
| _____ a) Never | _____ g) Two days per week |
| _____ b) Less than once a month | _____ h) Three days per week |
| _____ c) About once a month | _____ i) Four days per week |
| _____ d) Two times a month | _____ j) Five days per week |
| _____ e) Three times a months | _____ k) Six or seven days per week |
| _____ f) About once a week | |

APPENDIX F

Alcohol Problems

The next set of questions describes a number of things that can happen as a result of drinking alcohol. For each consequence of drinking, select the option that best describes your experiences.

101) Have you driven a car when you knew you had too much to drink to drive safely?

- | | |
|--|--|
| <input type="checkbox"/> A) No, never | <input type="checkbox"/> F) Yes, 4-6 times in the past year |
| <input type="checkbox"/> B) Yes, but <u>not</u> in the past year | <input type="checkbox"/> G) Yes, 7-11 times in the past year |
| <input type="checkbox"/> C) Yes, 1 time in the past year | <input type="checkbox"/> H) Yes, 12-20 times in the past year |
| <input type="checkbox"/> D) Yes, 2 times in the past year | <input type="checkbox"/> I) Yes, 21-39 times in the past year |
| <input type="checkbox"/> E) Yes, 3 times in the past year | <input type="checkbox"/> J) Yes, 40 or more times in the past year |

102) Have you had a headache (hangover) the morning after you had been drinking?

- | | |
|--|--|
| <input type="checkbox"/> A) No, never | <input type="checkbox"/> F) Yes, 4-6 times in the past year |
| <input type="checkbox"/> B) Yes, but <u>not</u> in the past year | <input type="checkbox"/> G) Yes, 7-11 times in the past year |
| <input type="checkbox"/> C) Yes, 1 time in the past year | <input type="checkbox"/> H) Yes, 12-20 times in the past year |
| <input type="checkbox"/> D) Yes, 2 times in the past year | <input type="checkbox"/> I) Yes, 21-39 times in the past year |
| <input type="checkbox"/> E) Yes, 3 times in the past year | <input type="checkbox"/> J) Yes, 40 or more times in the past year |

103) Have you felt very sick to your stomach or thrown up after drinking?

- | | |
|--|--|
| <input type="checkbox"/> A) No, never | <input type="checkbox"/> F) Yes, 4-6 times in the past year |
| <input type="checkbox"/> B) Yes, but <u>not</u> in the past year | <input type="checkbox"/> G) Yes, 7-11 times in the past year |
| <input type="checkbox"/> C) Yes, 1 time in the past year | <input type="checkbox"/> H) Yes, 12-20 times in the past year |
| <input type="checkbox"/> D) Yes, 2 times in the past year | <input type="checkbox"/> I) Yes, 21-39 times in the past year |
| <input type="checkbox"/> E) Yes, 3 times in the past year | <input type="checkbox"/> J) Yes, 40 or more times in the past year |

104) Have you showed up late for work or school because of drinking, a hangover, or an illness caused by drinking?

- | | |
|--|--|
| <input type="checkbox"/> A) No, never | <input type="checkbox"/> F) Yes, 4-6 times in the past year |
| <input type="checkbox"/> B) Yes, but <u>not</u> in the past year | <input type="checkbox"/> G) Yes, 7-11 times in the past year |
| <input type="checkbox"/> C) Yes, 1 time in the past year | <input type="checkbox"/> H) Yes, 12-20 times in the past year |
| <input type="checkbox"/> D) Yes, 2 times in the past year | <input type="checkbox"/> I) Yes, 21-39 times in the past year |
| <input type="checkbox"/> E) Yes, 3 times in the past year | <input type="checkbox"/> J) Yes, 40 or more times in the past year |

105) Have you not gone to work or missed classes at school because of drinking, a hangover, or an illness caused by drinking?

- | | |
|--|--|
| <input type="checkbox"/> A) No, never | <input type="checkbox"/> F) Yes, 4-6 times in the past year |
| <input type="checkbox"/> B) Yes, but <u>not</u> in the past year | <input type="checkbox"/> G) Yes, 7-11 times in the past year |
| <input type="checkbox"/> C) Yes, 1 time in the past year | <input type="checkbox"/> H) Yes, 12-20 times in the past year |
| <input type="checkbox"/> D) Yes, 2 times in the past year | <input type="checkbox"/> I) Yes, 21-39 times in the past year |
| <input type="checkbox"/> E) Yes, 3 times in the past year | <input type="checkbox"/> J) Yes, 40 or more times in the past year |

120) Have you ever felt like you needed a drink just after you'd gotten up (that is, before breakfast)?

- A) No, never. D) Yes, 2 times in the past year.
 B) Yes, but not in the past year. E) Yes, 3 or more times in the past year
 C) Yes, 1 time in the past year.

121) Have you ever found you needed larger amounts of alcohol to feel any effect, or that you could no longer get high or drunk on the amount that used to get you high or drunk?

- A) No, never.
 B) Yes, but not in the past year.
 C) Yes, 1 or more times in the past year.

123) Have you ever felt guilty about your drinking?

- A) No, never.
 B) Yes, but not in the past year.
 C) Yes, 1 or more times in the past year.

APPENDIX G

Spiritual Well-Being (FACIT-Sp)

Please indicate how true each statement has been for you during the past 7 days.

| | | | | | |
|--|-----------------|-------------------|---------------|------------------|----------------|
| 278. I feel peaceful | Not at all 1 | A little bit 2 | Somewhat 3 | Quite a bit 4 | Very much 5 |
| 279. I have a reason for living | Not at all 1 | A little bit 2 | Somewhat 3 | Quite a bit 4 | Very much 5 |
| 280. My life has been productive | Not at all 1 | A little bit 2 | Somewhat 3 | Quite a bit 4 | Very much 5 |
| 281. I have trouble feeling peace of mind | Not at all 1 | A little bit 2 | Somewhat 3 | Quite a bit 4 | Very much 5 |
| 282. I feel a sense of purpose in my life | Not at all 1 | A little bit 2 | Somewhat 3 | Quite a bit 4 | Very much 5 |
| 283. I am able to reach down deep into myself for comfort | Not at all 1 | A little bit 2 | Somewhat 3 | Quite a bit 4 | Very much 5 |
| 284. I feel a sense of harmony within myself | Not at all 1 | A little bit 2 | Somewhat 3 | Quite a bit 4 | Very much 5 |
| 285. My life lacks meaning or purpose | Not at all 1 | A little bit 2 | Somewhat 3 | Quite a bit 4 | Very much 5 |
| 286. I find comfort in my faith or spiritual beliefs | Not at all 1 | A little bit 2 | Somewhat 3 | Quite a bit 4 | Very much 5 |
| 287. Difficult times have strengthened my faith or spiritual beliefs | Not at all 1 | A little bit 2 | Somewhat 3 | Quite a bit 4 | Very much 5 |
| 288. Even during difficult times, I know that things will be okay | Not at all 1 | A little bit 2 | Somewhat 3 | Quite a bit 4 | Very much 5 |
| 289. I feel connected to a higher power (or God) | Not at all 1 | A little bit 2 | Somewhat 3 | Quite a bit 4 | Very much 5 |
| 290. I feel loved | Not at all 1 | A little bit 2 | Somewhat 3 | Quite a bit 4 | Very much 5 |
| 291. I feel love for others | Not at all 1 | A little bit 2 | Somewhat 3 | Quite a bit 4 | Very much 5 |
| 292. I am able to forgive others for any harm they have ever caused me | Not at all 1 | A little bit 2 | Somewhat 3 | Quite a bit 4 | Very much 5 |
| 293. I feel forgiven for any harm I may have ever caused | Not at all 1 | A little bit 2 | Somewhat 3 | Quite a bit 4 | Very much 5 |

| | | | | | |
|---|-----------------|-------------------|---------------|------------------|----------------|
| 294. Throughout the course of my day, I feel a sense of thankfulness for my life | Not at all 1 | A little bit 2 | Somewhat 3 | Quite a bit 4 | Very much 5 |
| 295. Throughout the course of my day, I feel a sense of thankfulness for what others bring to my life | Not at all 1 | A little bit 2 | Somewhat 3 | Quite a bit 4 | Very much 5 |
| 296. I feel hopeful | Not at all 1 | A little bit 2 | Somewhat 3 | Quite a bit 4 | Very much 5 |
| 297. I feel a sense of appreciation for the beauty of nature | Not at all 1 | A little bit 2 | Somewhat 3 | Quite a bit 4 | Very much 5 |
| 298. I feel compassion for others in the difficulties they are facing | Not at all 1 | A little bit 2 | Somewhat 3 | Quite a bit 4 | Very much 5 |

APPENDIX H

Satisfaction With Life Scale

Using the following scale, rate how much each of the following statements reflects your experiences here at ISU:

- 1 = strongly disagree
- 2 = disagree
- 3 = disagree somewhat
- 4 = not sure or neither agree nor disagree
- 5 = agree somewhat
- 6 = agree
- 7 = strongly agree

- 267) In most ways, my life is close to my ideal.
- 268) The conditions of my life are excellent.
- 269) I am satisfied with my life.
- 270) So far, I have gotten the important things I want in life.
- 271) If I could live my life over, I would change almost nothing.

APPENDIX I

Psychological Distress

In the past 30 days how often did you feel:

| | | | | | |
|--|-----------------------|-----------------------|--------------------------|-----------------------|----------------------|
| 176) So sad nothing could cheer you up? | None of the time 1 | Some of the time 2 | About half the time 3 | Most of the time 4 | All of the time 5 |
| 177) Nervous | None of the time 1 | Some of the time 2 | About half the time 3 | Most of the time 4 | All of the time 5 |
| 178) Restless or fidgety | None of the time 1 | Some of the time 2 | About half the time 3 | Most of the time 4 | All of the time 5 |
| 179) Hopeless | None of the time 1 | Some of the time 2 | About half the time 3 | Most of the time 4 | All of the time 5 |
| 180) That everything was an effort | None of the time 1 | Some of the time 2 | About half the time 3 | Most of the time 4 | All of the time 5 |
| 181) Irritable or angry | None of the time 1 | Some of the time 2 | About half the time 3 | Most of the time 4 | All of the time 5 |
| 182) That nothing was any fun. | None of the time 1 | Some of the time 2 | About half the time 3 | Most of the time 4 | All of the time 5 |
| 183) Guilty about things you have done or not done | None of the time 1 | Some of the time 2 | About half the time 3 | Most of the time 4 | All of the time 5 |
| 184) That you were a failure | None of the time 1 | Some of the time 2 | About half the time 3 | Most of the time 4 | All of the time 5 |
| 185) Fearful of things that might happen | None of the time 1 | Some of the time 2 | About half the time 3 | Most of the time 4 | All of the time 5 |

APPENDIX J

Existential Vacuum

| | | | | | | | |
|---|------------------------|---------------|------------------------|---------------|---------------------|------------|---------------------|
| 183) I feel that some element which I can't quite define is missing from my life. | Strongly Disagree 1 | Disagree 2 | Disagree Somewhat 3 | Not Sure 4 | Agree Somewhat 5 | Agree 6 | Strongly Agree 7 |
| 184) A period of personal hardship and suffering can help give a person a better understanding of the real meaning of life. | Strongly Disagree 1 | Disagree 2 | Disagree Somewhat 3 | Not Sure 4 | Agree Somewhat 5 | Agree 6 | Strongly Agree 7 |
| 185) I daydream of finding a new place for my life and a new identity. | Strongly Disagree 1 | Disagree 2 | Disagree Somewhat 3 | Not Sure 4 | Agree Somewhat 5 | Agree 6 | Strongly Agree 7 |
| 186) I think about the ultimate meaning of life. | Strongly Disagree 1 | Disagree 2 | Disagree Somewhat 3 | Not Sure 4 | Agree Somewhat 5 | Agree 6 | Strongly Agree 7 |
| 187) I feel the lack of and a need to find a real meaning and purpose in my life. | Strongly Disagree 1 | Disagree 2 | Disagree Somewhat 3 | Not Sure 4 | Agree Somewhat 5 | Agree 6 | Strongly Agree 7 |
| 188) I seem to change my <i>main</i> objectives in life | Strongly Disagree 1 | Disagree 2 | Disagree Somewhat 3 | Not Sure 4 | Agree Somewhat 5 | Agree 6 | Strongly Agree 7 |
| 189) Over my lifetime I have felt a strong urge to find myself | Strongly Disagree 1 | Disagree 2 | Disagree Somewhat 3 | Not Sure 4 | Agree Somewhat 5 | Agree 6 | Strongly Agree 7 |
| 190) I've been aware of an all powerful and consuming purpose towards which my life has been directed. | Strongly Disagree 1 | Disagree 2 | Disagree Somewhat 3 | Not Sure 4 | Agree Somewhat 5 | Agree 6 | Strongly Agree 7 |

APPENDIX K

Correlations of Support and Coping from Each Wave

| Subscale | 1. | 2. | 3. | 4. | 5. | 6. |
|-----------------------------------|-------|-------|-------|-------|-------|-------|
| Wave 1 Positive Religious Support | -- | .58** | .68** | .47** | .61** | .45** |
| Wave 1 Positive Religious Coping | .58** | -- | .51** | .67** | .47** | .64** |
| Wave 2 Positive Religious Support | .68** | .51** | -- | .58** | .65** | .46** |
| Wave 2 Positive Religious Coping | .47** | .67** | .58** | -- | .49** | .70** |
| Wave 3 Positive Religious Support | .61** | .47** | .65** | .49** | -- | .56** |
| Wave 3 Positive Religious Coping | .45** | .64** | .46** | .70** | .56** | -- |

Note. *: $p < .05$; **: $p < .01$; N= 624 to 903.

APPENDIX L

Correlations of Alcohol Variables from Each Wave

| Subscale | 1. | 2. | 3. | 4. | 5. | 6. | 7. | 8. | 9. | 10. | 11. | 12. | 13. | 14. |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| W1 Quant | -- | .86** | .61** | .64** | .45** | .45** | .59** | .59** | .49** | .39** | .41** | .54** | .53** | .49** |
| W1 Peak | .86** | -- | .63** | .67** | .47** | .46** | .60** | .57** | .51** | .37** | .35** | .48** | .51** | .44** |
| W1 Freq | .61** | .63** | -- | .66** | .46** | .44** | .41** | .44** | .51** | .38** | .40** | .37** | .33** | .47** |
| W1 Prob | .64** | .67** | .66** | -- | .50** | .42** | .47** | .48** | .61** | .33** | .34** | .37** | .38** | .50** |
| W2 Freq | .45** | .47** | .46** | .45** | -- | .76** | .66** | .64** | .73** | .57** | .49** | .56** | .56** | .59** |
| W2 Binge | .45** | .46** | .44** | .42** | .76** | -- | .61** | .60** | .70** | .46** | .49** | .49** | .46** | .54** |
| W2 Peak | .59** | .60** | .41** | .47** | .66** | .61** | -- | .86** | .67** | .47** | .44** | .64** | .69** | .56** |
| W2 Quant | .59** | .57** | .44** | .48** | .64** | .60** | .86** | -- | .65** | .49** | .47** | .66** | .65** | .53** |
| W2 Prob | .49** | .51** | .51** | .61** | .73** | .70** | .67** | .65** | -- | .44** | .43** | .48** | .48** | .65** |
| W3 Freq | .39** | .37** | .38** | .33** | .57** | .46** | .47** | .49** | .44** | -- | .80** | .64** | .64** | .67** |
| W3 Binge | .41** | .35** | .40** | .34** | .49** | .49** | .44** | .47** | .43** | .81** | -- | .66** | .61** | .67** |
| W3 Quant | .54** | .48** | .37** | .37** | .56** | .49** | .64** | .66** | .48** | .64** | .66** | -- | .82** | .65** |
| W3 Peak | .53** | .51** | .33** | .38** | .56** | .46** | .69** | .65** | .48** | .64** | .61** | .82** | -- | .64** |
| W3 Prob | .49** | .44** | .47** | .50** | .59** | .54** | .56** | .53** | .65** | .67** | .67** | .65** | .64** | -- |

Note. *: $p < .05$; **: $p < .01$; Quant= Typical Drink Quantity, Freq= Typical Frequency, Peak= Peak Drinking, Binge= Binge Drink Frequency, Probs= Drinking Problems; N= 1495 to 767

APPENDIX M

Correlations of Well-Being Variables from Each Wave

| Subscale | 1. | 2. | 3. | 4. | 5. | 6. | 7. | 8. | 9. | 10. | 11. | 12. | 13. | 14. |
|----------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| W1 Meaning and Peace | -- | .50 | .39 | .75 | .44 | .34 | .31 | .27 | -.38 | -.28 | -.20 | -.28 | -.21 | -.20 |
| W2 Meaning and Peace | .50 | -- | .51 | .45 | .83 | .46 | .50 | .36 | -.27 | -.51 | -.32 | -.24 | -.38 | -.29 |
| W3 Meaning and Peace | .39 | .51 | -- | .35 | .45 | .76 | .40 | .55 | -.22 | -.33 | -.51 | -.15 | -.26 | -.43 |
| W1 Connect | .75 | .45 | .35 | -- | .50 | .44 | .27 | .24 | -.26 | -.25 | -.18 | -.19 | -.18 | -.16 |
| W2 Connect | .44 | .83 | .45 | .50 | -- | .56 | .44 | .35 | -.24 | -.42 | -.25 | -.18 | -.30 | -.23 |
| W3 Connect | .34 | .46 | .76 | .44 | .56 | -- | .35 | .45 | -.18 | -.24 | -.40 | -.13 | -.21 | -.32 |
| W2 Sat w/ Life | .31 | .50 | .40 | .27 | .44 | .35 | -- | .45 | -.19 | -.39 | -.31 | -.19 | -.32 | -.29 |
| W3 Sat w/ Life | .27 | .36 | .55 | .24 | .35 | .45 | .45 | -- | -.23 | -.31 | -.44 | -.21 | -.23 | -.40 |
| W1 Neg Aff | -.38 | -.27 | -.22 | -.26 | -.24 | -.18 | -.19 | -.23 | -- | .40 | .33 | .47 | .30 | .27 |
| W2 Neg Aff | -.28 | -.51 | -.33 | -.25 | -.42 | -.24 | -.39 | -.31 | .40 | -- | .43 | .29 | .54 | .31 |
| W3 Neg Aff | -.20 | -.32 | -.51 | -.18 | -.25 | -.40 | -.31 | -.44 | .33 | .43 | -- | .26 | .30 | .47 |
| W1 Exist Vac | -.28 | -.24 | -.15 | -.19 | -.18 | -.13 | -.19 | -.21 | .47 | .29 | .26 | -- | .39 | .37 |
| W2 Exist Vac | -.21 | -.38 | -.26 | -.18 | -.30 | -.21 | -.32 | -.23 | .30 | .54 | .30 | .39 | -- | .40 |
| W3 Exist Vac | -.20 | -.29 | -.43 | -.16 | -.23 | -.32 | -.29 | -.40 | .27 | .31 | .47 | .37 | .40 | -- |

Note. All correlations significant ($p < .001$); Connect=Connectedness; Sat w/ Life=Satisfaction With Life; Neg Aff=Negative Affect; Exist Vac=Existential Vacuum; N= 1477 to 1444.

APPENDIX N

Correlations of Alcohol, Well-Being, Religious, and Stress Variables from Each Wave

| | W1 Pos Coping | W1 Pos Support | W2 Pos Coping | W2 Pos Support | W2 Str | W3 Pos Coping | W3 Pos Support | W3 Str |
|-----------------|------------------|-------------------|------------------|-------------------|--------|------------------|-------------------|--------|
| W1 Alc Use | -.23** | -.24** | -.18** | -.18** | .04 | -.16** | -.19** | .09** |
| W1 Alc Problems | -.14** | -.20** | -.10** | -.14** | .07 | -.11** | -.15** | .09** |
| W1 Pos WB | .36** | .33** | .34** | .28** | -.15** | .30** | .23** | -.08* |
| W1 Neg WB | -.02 | -.12** | .01 | -.15** | .25** | -.06 | -.11** | .23** |
| W2 Alc Use | -.25** | -.28** | -.21** | -.23** | .10** | -.23** | -.26** | .08* |
| W2 Alc Problems | -.14** | -.18** | -.11** | -.14** | .13** | -.16** | -.16** | .10* |
| W2 WB | .24** | .23** | .32** | .33** | -.37** | .29** | .32** | -.26** |
| W3 Alc Use | -.19** | -.21** | -.24** | -.24** | .09** | -.20** | -.16** | .10** |
| W3 Alc Problems | -.08* | -.15** | -.13** | -.18** | .14** | -.11** | -.09** | .20** |
| W3 WB | .20** | .23** | .27** | .25 | -.30** | .31** | .28** | -.41** |
| W3 Pos Wb | .29** | .25** | .35** | .28 | -.20** | .44** | .34** | -.27** |
| W3 Neg Wb | -.09** | -.16** | -.15** | -.18 | .32** | -.15** | -.19** | .44** |

Note. *: p<.05; **: p<.01; Pos=Positive; Str=Stress, Alc= Alcohol, WB= Well-Being, Neg= Negative; N= 612 to 898.

APPENDIX O

Correlations of Alcohol, Religious, and Stress Variables from Each Wave by Race

| | W1 Pos Coping | W1 Pos Support | W2 Pos Coping | W2 Pos Support | W2 Str | W3 Pos Coping | W3 Pos Support | W3 Str |
|---------------------|----------------------|----------------------|---------------------|---------------------|--------------------|---------------------|---------------------|--------------------|
| W1 Alc Use | | | | | | | | |
| Afr. American | -.16† (N=122) | -.12 (N=122) | -.21† (N=68) | -.22† (N=68) | -.08 (N=68) | -.18 (N=72) | -.05 (N=72) | -.11 (N=72) |
| White | -.14**** (N=1283) | -.16**** (N=1274) | -.06 (N=668) | -.06 (N=668) | .00 (N=669) | -.11*** (N=781) | -.13**** (N=779) | .09* (N=775) |
| W1 Alc Probs | | | | | | | | |
| Afr. American | -.17† (N=122) | -.23** (N=123) | -.21† (N=70) | -.02 (N=70) | .00 (N=70) | -.19† (N=73) | -.04 (N=73) | -.02 (N=73) |
| White | -.12**** (n=1289) | -.19**** (N=1280) | -.07† (N=672) | -.14**** (N=672) | .05 (N=673) | -.11** (N=785) | -.15**** (N=783) | .09** (N=779) |
| W2 Alc Use | | | | | | | | |
| Afr. American | -.19 (N=69) | -.26* (N=69) | -.16 (N=70) | -.08 (N=70) | .00 (N=70) | -.17 (N=56) | -.04 (N=56) | -.01 (N=56) |
| White | -.19**** (N=658) | -.18**** (N=655) | -.11** (N=674) | -.13*** (N=674) | .08* (N=675) | -.19**** (N=543) | -.21**** (N=541) | .04 (N=538) |
| W2 Alc Probs | | | | | | | | |
| Afr. American | -.12 (N=69) | -.35** (N=69) | -.13 (N=70) | -.16 (N=70) | .00 (N=70) | -.09 (N=56) | -.01 (N=56) | .02 (N=56) |
| White | -.14**** (N=658) | -.16**** (N=655) | -.08* (N=674) | -.13*** (N=674) | .15**** (N=675) | -.16**** (N=543) | -.18**** (N=541) | .10* (N=538) |
| W3 Alc Use | | | | | | | | |
| Afr. American | -.26* (N=73) | -.16 (N=73) | -.27* (N=56) | -.12 (N=56) | .12 (N=56) | -.32** (N74) | -.23* (N=74) | -.16 (N=74) |
| White | -.15**** (N=766) | -.16**** (N=758) | -.18**** (N=541) | -.16**** (N=540) | .05 (N=541) | -.15**** (N=788) | -.12*** (N=786) | .06† (N=782) |
| W3 Alc Probs | | | | | | | | |
| Afr. American | -.10 (N=73) | -.13 (N=73) | -.03 (N=56) | -.34** (N=56) | .18 (N=56) | -.22† (N=74) | .03 (N=74) | .14 (N=74) |
| White | -.09* (N=767) | -.15**** (N=759) | -.14*** (N=542) | -.20**** (N=541) | .15*** (N=542) | -.11** (N=788) | -.11** (N=786) | .20**** (N=782) |

Note. *: $p < .05$; **: $p < .01$; Pos=Positive; Str=Stress, Alc= Alcohol, Probs = Problems, Neg= Negative.

APPENDIX P

Correlations of Well-Being, Religious, and Stress Variables from Each Wave by Race

| | W1 Pos Coping | W1 Pos Support | W2 Pos Coping | W2 Pos Support | W2 Str | W3 Pos Coping | W3 Pos Support | W3 Str |
|------------------|---------------------|----------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| W1 Pos WB | | | | | | | | |
| Afr. American | .45**** (N=120) | .38**** (N=120) | .56**** (N=67) | .29* (N=67) | -.07 (N=67) | .29** (N=71) | .20† (N=71) | .13 (N=71) |
| White | .36**** (N=1276) | .34**** (N=1271) | .34**** (N=652) | .29**** (N=652) | -.16**** (N=653) | .31**** (N=763) | .24**** (N=761) | -.10** (N=757) |
| W1 Neg WB | | | | | | | | |
| Afr. American | -.01 (N=120) | -.22* (N=120) | .05 (N=67) | .00 (N=67) | .32** (N=67) | .07 (N=58) | -.05 (N=71) | .30 (N=71) |
| White | -.02 (N=1264) | -.11**** (N=1257) | .00 (N=647) | -.17**** (N=647) | .24**** (N=648) | -.08* (N=754) | -.12*** (N=752) | .23**** (N=748) |
| W2 WB | | | | | | | | |
| Afr. American | .18 (N=69) | .25* (N=69) | .36** (N=70) | .30** (N=70) | -.24* (N=70) | .20 (N=56) | .06 (N=56) | .01 (N=56) |
| White | .26**** (N=659) | .24**** (N=656) | .32**** (N=675) | .33**** (N=675) | -.39**** (N=676) | .31**** (N=544) | .35**** (N=542) | -.29**** (N=539) |
| W3 WB | | | | | | | | |
| Afr. American | .14 (N=73) | -.03 (N=73) | .38** (N=56) | .20 (N=56) | -.20 (N=56) | .44**** (N=74) | .12 (N=74) | -.10 (N=74) |
| White | .21**** (N=767) | .25**** (N=759) | .27**** (N=542) | .26**** (N=541) | -.31**** (N=542) | .30**** (N=789) | .30**** (N=787) | -.43**** (N=783) |
| W3 Pos Wb | | | | | | | | |
| Afr. American | .25* (N=73) | .10 (N=73) | .45*** (N=56) | .36** (N=56) | -.16 (N=56) | .52**** (N=74) | .28** (N=74) | -.13 (N=74) |
| White | .30**** (N=766) | .26**** (N=758) | .35**** (N=542) | .27**** (N=541) | -.21**** (N=542) | .44**** (N=789) | .34**** (N=787) | -.29**** (N=782) |
| W3 Neg Wb | | | | | | | | |
| Afr. American | -.01 (N=73) | .13 (N=73) | -.24† (N=56) | -.04 (N=56) | .18 (N=56) | -.25* (N=74) | .04 (N=74) | .05 (N=74) |
| White | -.10** (N=767) | -.19**** (N=759) | -.15**** (N=542) | -.20**** (N=541) | .34**** (N=542) | -.15**** (N=789) | -.21**** (N=787) | .48**** (N=783) |

Note. *: $p < .05$; **: $p < .01$; Pos=Positive; Str=Stress, Alc= Alcohol, Probs = Problems, WB= Well-Being, Neg= Negative.

APPENDIX Q

Correlations of Religious and Stress Variables from Each Wave by Race

| | W1 Pos Coping | W1 Pos Support | W2 Pos Coping | W2 Pos Support | W2 Str | W3 Pos Coping | W3 Pos Support | W3 Str |
|-------------------|---------------------|--------------------|--------------------|--------------------|--------------------|--------------------|-------------------|----------------|
| W1 Pos Coping | | .37**** (N=124) | .70**** (N=69) | .58**** (N=69) | -.04 (N=69) | .61**** (N=73) | .24* (N=73) | .04 (N=73) |
| W1 Pos Support | .59**** (N=1278) | | .35** (N=69) | .58**** (N=69) | -.14 (N=69) | .26* (N=73) | .34** (N=73) | -.02 (N=73) |
| W2 Pos Coping | .66**** (N=656) | .47**** (N=653) | | .47**** (N=70) | .06 (N=70) | .66**** (N=56) | .19 (N=56) | .22† (N=56) |
| W2 Pos Support | .51**** (N=656) | .69**** (N=653) | .57**** (N=672) | | -.05 (N=70) | .37** (N=56) | .48**** (N=56) | .10 (N=56) |
| W2 Stress | -.08* (N=657) | -.05 (N=654) | -.06† (N=673) | -.12** (N=673) | | -.07 (N=56) | .00 (n=56) | .33* (N=56) |
| W3 Pos Coping | .63**** (N=766) | .46**** (N=758) | .69**** (N=542) | .46**** (N=541) | -.07 (N=542) | | .49**** (N=74) | .11 (N=74) |
| W3 Pos Support | .48**** (N=765) | .64**** (N=757) | .50**** (N=540) | .66**** (N=539) | -.11** (N=540) | .55**** (N=787) | | .25* (N=74) |
| W3 Stress | .03 (N=760) | -.05 (N=752) | -.07† (N=537) | -.08† (N=536) | .45**** (N=537) | .00 (N=782) | -.07† (N=780) | |

Note. Values above the diagonal are for African Americans; Values below the diagonal are for whites; *: $p < .05$; **: $p < .01$; Pos=Positive; Str=Stress, Alc= Alcohol, Probs = Problems, WB= Well-Being, Neg= Negative.

APPENDIX R

Predicting Outcomes from Wave 1 Levels of Support and Coping

| Criterion | Overall F | df | <u>African Americans</u> | | | <u>Whites</u> | | | | |
|-------------|-----------|---------|--------------------------|--------------|--------------|---------------|--------------|--------------|--------|--------|
| | | | β For Support | β For Coping | β For Gender | β For Support | β For Coping | β For Gender | | |
| W1 Alc Use | 6.87*** | (3,118) | -.18† | -.01 | .35*** | 58.68*** | (3,1271) | -.15*** | -.07* | .25*** |
| W1 Prob | 6.02*** | (3,119) | -.23** | -.02 | .28** | 25.71*** | (3,1274) | -.17*** | .01 | .15*** |
| W1 Pos WB | 13.29*** | (3,116) | .24** | .34*** | -.07 | 78.01*** | (3,1265) | .19*** | .25*** | -.04† |
| W1 Neg WB | 2.24† | (3,116) | -.26** | .09 | .03 | 9.21*** | (3,1252) | -.16*** | .05 | -.08** |
| W2 Alc Use | 5.08** | (3,65) | -.30* | .00 | .29* | 33.89*** | (3,650) | -.19*** | -.09* | .24*** |
| W2 Prob | 5.11** | (3,65) | -.38** | .11 | .27* | 9.36*** | (3,650) | -.11* | -.06 | .12** |
| W2 WB | 1.81 | (3,65) | .22† | .07 | -.09 | 17.27*** | (3,651) | .13** | .17*** | 0 |
| W3 Alc Use | 5.09** | (3,69) | -.19† | -.07 | .35** | 32.56*** | (3,754) | -.15*** | -.05 | .26*** |
| W3 Problems | 1.33 | (3,69) | -.15 | .02 | .20 | 12.72*** | (3,754) | -.15*** | .03 | .16*** |
| W3 WB | .58 | (3,69) | -.08 | .17 | .02 | 17.73*** | (3,754) | .18*** | .10* | .06 |
| W3 Pos WB | 1.66 | (3,69) | .02 | .27* | .07 | 28.61*** | (3,753) | .13** | .22*** | -.04 |
| W3 Neg WB | .46 | (3,69) | .14 | -.05 | .01 | 9.03*** | (3,754) | -.19*** | .01 | -.03 |

Note. †.10; *: p<.05; **: p<.01; ***: p<.001; ****: p<.0001, Alc=Alcohol, Prob=Alcohol Problems, Pos WB=Positive Well-Being, Neg WB=Negative Well-Being, WB=Well-Being

APPENDIX S

Predicting Outcomes from Wave 3 Levels of Support and Coping

| Criterion | <u>African Americans</u> | | | <u>Whites</u> | | | | | | |
|-------------|--------------------------|--------|---------------------|--------------------|--------------------|------------------|---------|---------------------|--------------------|--------------------|
| | Overall <i>F</i> | df | β For Support | β For Coping | β For Gender | Overall <i>F</i> | df | β For Support | β For Coping | β For Gender |
| W3 Alc Use | 4.52** | (3,70) | .02 | -.19 | .29* | 31.01**** | (3,782) | -.09* | -.10* | .26**** |
| W3 Problems | 2.19† | (3,70) | .19 | -.26† | .12 | 10.39**** | (3,782) | -.07† | -.04 | .16**** |
| W3 WB | 7.27**** | (3,70) | -.11 | .59**** | .21† | 34.55**** | (3,783) | .18**** | .21**** | .01 |
| W3 Pos WB | 11.63**** | (3,70) | .06 | .62**** | .29* | 67.57**** | (3,783) | .15**** | .35**** | -.03 |
| W3 Neg WB | 2.81* | (3,70) | .21 | -.40** | -.10 | 12.67**** | (3,783) | -.18**** | -.06 | -.04 |

Note. †: $p < .10$; *: $p < .05$; **: $p < .01$; ***: $p < .001$; ****: $p < .0001$. Alc=Alcohol, Prob=Alcohol Problems, Pos WB=Positive Well-Being, Neg WB=Negative Well-Being