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The Multi-dimensional Nature of Religiosity/Spirituality and its Association with Psychological Adjustment

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The Multi-dimensional Nature of Religiosity/Spirituality and its Association with Psychological Adjustment

A dissertation submitted in partial satisfaction of the requirements for the degree Doctor of Philosophy in Psychology

by

Jonathan Rocco Schettino

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ABSTRACT OF THE DISSERTATION

The Multi-dimensional Nature of Religiosity/Spirituality

and its Association with Psychological Adjustment

by

Jonathan Rocco Schettino

Doctor of Philosophy in Psychology

University of California, Los Angeles, 2012

Professor Hector F. Myers, Co-chair

Professor Christine Dunkel Schetter, Co-chair

The present study examined the dimensional structure of religiosity/spirituality (R/S) and its relationship with positive psychological adjustment (defined here as a latent variable indicated by lower levels of depression and perceived stress and higher levels of positive affect) within a Christian context. Two separate samples (total $N = 806$) were recruited online via Amazon MechTurk and consisted of Christian American adults (age ≥ 18). R/S was measured using the *MCRSI*, a 29-item inventory designed to measure multiple conceptual dimensions of R/S (e.g., intrinsic religiosity, forgiveness, health related beliefs, etc.) in a Christian population. An exploratory factor analysis revealed that Christian R/S, as measured using the *MCRSI*, is a construct with 2 empirically distinct, yet

correlated, dimensions which were conceptually defined as spiritual attitudes/beliefs and religious behaviors. SEM analyses revealed that Christian R/S was significantly associated with positive psychological adjustment after controlling for age and SES, explaining 7% of the variance in psychological adjustment. This relationship was fully mediated by positive relationships with others and purpose in life. Religious social support and religious coping did not significantly mediate the relationship. The relationship was not moderated by gender, ethnicity (Caucasian vs. African-American), peer group salience of Christian R/S, or chronic stress. The entire model (including proposed mediators) explained 59% of the variance in psychological adjustment. Of the two dimensions of R/S, spiritual attitudes/beliefs emerged as a stronger predictor of psychological adjustment than religious behaviors, but religious behaviors had a modest positive association with psychological adjustment through religious social support and a modest association with positive affect through religious coping, even after controlling for spiritual attitudes/beliefs. Implications of these results are discussed.

The dissertation of Jonathan Rocco Schettino is approved.

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TABLE OF CONTENTS

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The Multi-dimensional Nature of Religiosity/Spirituality and its Association with Psychological Adjustment

Religion has figured prominently in human affairs throughout recorded history. For millennia, our species has looked to religion to help us understand the natural world and our place within it. Although science has largely taken over this function in the modern era, religion continues to play an important role in the lives of billions of people, and as such, continues to have an influence on human behavior, culture and psychology. For example, according to a national survey conducted by the Pew Forum in 2007, 83% of Americans report having a religious affiliation, 71% believe in God and are "absolutely certain" of this belief, and 39% attend religious services weekly (Pew Forum, 2007). Additionally, in a Gallup poll conducted in May, 2007, 56% of Americans indicated that religion is a "very important" aspect of their lives (Gallup, 2007). In spite of the apparent socio-cultural and psychological significance of religion, the functional impact of religion on human health and well-being received very little empirical research attention until the 1980s. Since this time, however, there has been a marked proliferation of research in this area. Much of this work has examined the relationship between religion and spirituality and a broad array of social, psychological and physical health outcomes. The findings generated through this empirical research suggest that, for the most part, religiosity/spirituality[1] (R/S) is associated with positive outcomes in the lives of most individuals.

Traditional and meta-analytic reviews of the literature have shown that R/S, measured in various ways, is positively associated with several important psychosocial and health outcomes, including lower rates of crime and delinquency (Baier & Wright, 2001), less substance and

[1] Throughout this paper R/S is defined in accordance with the Smith, McCullough and Poll (2003) definition as any beliefs, behaviors or processes associated with the sacred or transcendent.

alcohol abuse (Moreira-Almeida, Neto & Koenig, 2006), lower rates of youth sexual behavior (Lucero, Kusner, Speace & O'Brien, 2008), higher grade point averages and standardized test scores (Jeynes, 2002), more satisfying, committed and longer marriages (Mahoney, Pargament, Tarakeshwar & Swank, 2001), and even increased longevity (Powell, Shahabi & Thoresen, 2003). Moreover, several of these associations have clinical significance. For example, the increase in life expectancy associated with regular attendance at religious services (2 – 3 years) is on par with the increase in life expectancy associated with regular physical exercise (3 – 5 years) (Hall, 2006).

Additionally, existing research indicates that R/S is associated with factors that are related to psychological adjustment. For example, studies have shown that religiously committed individuals have relatively hopeful and positive outcome expectancies compared to those who are less committed (Fehring, Miller, & Shaw, 1997; Sethi & Seligman, 1993). In addition, a systematic review of the literature conducted by Moreira-Almeida, Neto and Koenig (2006) found that the majority of studies reported a significant positive association between R/S and factors that are associated with psychological adjustment, including optimism and hope (12 out of 14 studies), self-esteem (16 out of 29 studies), and sense of meaning and purpose in life (15 out of 16 studies). Both a large meta-analytical review (54 studies) and a large traditional literature review (100 studies) found a moderate positive relationship between R/S and psychological well-being (Sawatzky, Ratner & Chiu, 2005; Koenig, McCullough & Larson, 2001). Finally, meta-analyses have revealed that R/S is associated with lower levels of depressive symptoms (Smith, McCullough & Poll, 2003) and better psychological adjustment to stress, which was defined as greater life satisfaction, more positive affect, increased hope and purpose in life (Ano & Vasconcelles, 2005).

Purpose of the Literature Review

Although the literature cited above appears to suggest that there is a positive association between R/S and psychological adjustment, there is still much to be learned about the R/S construct and how it affects psychological adjustment. For example, much of the extant research examining the relationship between R/S and psychological adjustment is cross-sectional; thus, issues of causality remain largely unresolved. In addition to this weakness, there are many other methodological and conceptual problems that have historically limited the quality of research in this area (e.g., failure to reach consensus on an operational definition for R/S, failure to control for potential confounds or to test for mediating and moderating factors, limited understanding of whether and how different dimensions of R/S might differentially affect psychological adjustment, etc.).

The objective of this review is to provide a summary and critique of the extant literature examining the relationship between R/S and psychological adjustment, defined in the present review as lower levels of depression, less perceived stress, and more positive affect. Since R/S is hypothesized to be a unified construct with multiple components (i.e., dimensions) in this paper, a major focus of this literature review is to highlight research that examines different relationships between dimensions of R/S and indicators of psychological adjustment. A secondary objective of this paper is to briefly review literature examining potential mediators of the relationship between R/S and psychological adjustment. Finally, this paper presents the major methodological and conceptual problems that are common in R/S research and discusses how these issues have adversely affected the quality of previous work in this area.

Defining Religiosity/Spirituality

As mentioned above, the R/S construct itself is still poorly defined and this conceptual problem makes interpretation of the literature difficult. Although R/S is defined in this review using the Smith, McCullough and Poll (2003) definition, many competing definitions exist as the field has yet to reach a consensus on an operational definition of R/S. For example, Pratt (1934) and James (1958) define R/S as "any cognition, affect, or behavior that arises from awareness of, or perceived interaction with, supernatural entities that are presumed to play an important role in human affairs". In addition, there is ongoing debate in the field as to whether religiosity and spirituality represent the same construct, two distinct dimensions within the same construct, or different constructs altogether (Hill & Pargament, 2003). Many researchers in this area have begun to conceptualize religiosity as the outward, institutional aspects of religion (e.g., religious practices, organized religious doctrines); whereas, spirituality has been conceptualized as the inward, personal aspects of religion (e.g., subjective spiritual experiences, personal spiritual beliefs, etc.). Although it is acknowledged that spirituality and religiosity can exist independently of each other, it is argued here that this distinction is of limited operational utility, because these "constructs" are often inextricably tied in nature and the R/S construct may be more accurately divided into practical conceptual dimensions which will be discussed in more detail later. For example, although church attendance is an outward religious practice, it is often imbued with personal spiritual meaning and church frequently serves as the site of intense spiritual experiences. In addition, many ostensibly personal spiritual beliefs are often derived through and/or informed by organized religious belief systems and doctrines and involve outward religious practices. Thus, because these two constructs are often empirically indistinguishable, religiosity/spirituality (R/S) is used throughout this paper to denote a superordinate construct that encompasses both religiosity and spirituality.

In addition, there is also vigorous debate regarding the typology of the R/S construct itself. Researchers generally agree that R/S is a multi-dimensional construct, but there is still no consensus on the number and types of the dimensions that make up this construct (Hall, Meador, & Koenig, 2008). Once again, the value of these dimensions is questioned, because of their limited operational utility and conceptual simplicity.

Definitions for Dimensions of R/S that have been Reported in the Literature

Throughout the literature review, several dimensions of R/S will be discussed while presenting previous research. To aid in understanding and to avoid confusion, the definitions of these dimensions are provided here as a reference: 1) *Intrinsic R/S* is defined as the degree to which one believes that their religiousness has value in and of itself (Allport & Ross, 1967), 2) *Extrinsic R/S* is defined as the degree to which one is involved in religion as a means to some self-seeking end (Allport & Ross, 1967), 3) *R/S struggle* is defined as an internal struggle with one's religious beliefs or a struggle with others because of one's religious beliefs (Hill & Pargament, 2003), 4) *Negative religious coping* is defined as using one's religion/spiritual beliefs to cope with stressors in ways that are maladaptive (e.g., passively pleading for a miracle, using religion to avoid confronting or thinking about stressors, or perceiving that a spiritual force is causing harm through abandonment, punishment or judgment) (Pargament, 1997), 5) *Positive religious coping* is defined as using one's religion/spiritual beliefs to cope with stressors in ways that are adaptive (e.g., working collaboratively with God to solve problems, seeking support from the religious community, religious positive reappraisal of negative life events) (Pargament, 1997), and 6) *Religious salience* is the self-reported relative importance of religion/spirituality in one's life.

R/S and Depression

There is a rich literature examining the relationship between R/S and depression, and although there is still much to be learned about the specifics of this relationship, the overwhelming evidence suggests that R/S is associated with lower levels of depression. Systematic reviews of the literature have found that R/S, measured in various ways, is reliably associated with less depression, at least in cross-sectional analysis (McCullough & Larson, 1999; Koenig, McCullough & Larson, 2001). Additionally, evidence has begun to emerge suggesting that R/S might protect against the development of clinical depression and increase the speed of recovery from this disorder. Although the empirical evidence generally appears to suggest that R/S is a protective factor against depression, the literature is not always straightforward and seemingly contrary findings are commonly reported both within and across studies.

For example, in a sample of 615 adolescent girls from urban areas, perceived religious social support (i.e., the belief that one's local religious congregation will provide support should a problem arise) was associated with lower levels of depression (Desrosiers & Miller, 2007). However, in this same sample, perceiving that people in one's congregation were too demanding or critical was associated with higher levels of depression. In a study of 125 women with heart disease, spiritual faith and meaning was strongly associated with fewer symptoms of depression (Larsen, Vickers, Sampson, Netzel & Hayes, 2006). In a large sample of older adults (N = 1,000), greater frequency of religious behaviors was associated with lower levels of depression even after controlling for functional status, SES, and social support (Roff et al., 2004). In contrast, Zunzunegui, Beland, Llacer & Keller (1999) found in a sample of caregivers (N = 157) that a higher frequency of religious behaviors was associated with higher levels of depression for

participants who were caring for a sick parent; however, the effect was in the opposite direction for participants who were caring for a sick spouse.

Although the above studies are just a small sample of the literature examining the link between R/S and depression, they serve to highlight the complexity of this relationship. In most studies, R/S appears to be positively associated with depression, but in other studies negative associations are obtained. Some of this complexity can be explained by the different relationships that exist between depression and different dimensions of R/S. For instance, dimensions of R/S such as negative religious coping, R/S struggle, and extrinsic religiosity have been consistently linked to higher levels of depression (Pargament, 1997; Hill & Pargament, 2003; Richards & Bergin, 1997). On the other hand, most other dimensions of R/S tend to be associated with lower levels of depression, with intrinsic religiosity and public religious practices (e.g., church attendance) demonstrating the strongest inverse relationships with depression (McCullough & Larson, 1999).

Although the relationship between R/S and depression appears to change as a function of the dimension of R/S that is being measured, this does not completely explain the mixed findings in the literature. For example, the literature clearly shows the average intensity of R/S differs as a function of ethnicity (African-Americans tend to be more religious than Caucasians), gender, age group (elderly tend to be more religious than young adults), and chronic stress level. Indeed, there is some research suggesting that the strength of the relationship between R/S and depression might change as a function of these socio-demographic factors (see Smith, McCullough, & Poll, 2003 for a review). If these potential moderators are unaccounted for, the influence of these factors could make findings appear contradictory at first glance.

In order to identify differential relationships and potential moderating factors, a large meta-analysis (174 studies, 174 effect sizes, N = 98,975) of the literature examining the relationship between R/S and depression was conducted (Smith, McCullough & Poll, 2003). R/S was conceptualized in this meta-analysis as any beliefs, behaviors or processes associated with the sacred or transcendent and depression was conceptualized as a cluster of symptoms congruent with depressive disorder as defined by the American Psychiatric Association. The meta-analysis revealed that overall R/S was modestly, but reliably associated with lower severity of depressive symptoms (cumulative effect = -.096). Although this is a modest effect, it is comparable to the magnitude of the relationship between female gender and depression, a factor that is known to have important implications for depression research and treatment (Nolen-Hoeksema, Larson & Grayson., 1999). The results of the meta-analysis also revealed that the relationship between R/S and depression was not significantly moderated by gender, ethnicity (Caucasian vs. African-Americans), or age. Chronic stress did moderate this relationship, such that the relationship between R/S and depression was significantly stronger under conditions of high chronic stress; however, the relationship remained significant across all chronic stress levels. The relationship also changed as a function of the dimension of R/S being measured. Negative religious coping and extrinsic religiosity exhibited a positive relationship with depression, but a negative relationship was obtained for all other dimensions. Intrinsic religiosity showed a significantly stronger negative relationship with depression than measures of religious attitudes and beliefs, but no other significant different relationships were obtained. Another large meta-analysis (24 studies, 24 effect sizes) examining the relationship between R/S and depression in adolescents (12 – 17 years old) and young adults (18 – 25 years old) found a similar effect size (cumulative effect = -.11) (Yonker, Schnabelrauch & DeHaan, L. G. (2012).

These meta-analyses made significant contributions in advancing understanding of the cross-sectional association between R/S and depression; however, little work has been conducted to help determine causality and identify potential mediators of this relationship.

A few longitudinal studies have examined the role that R/S plays in recovery from depression. In a sample of elderly individuals (N = 177), religious salience was positively associated with improvement of depression over a 1 year period for those who were clinically depressed at baseline (Braam, Beekman, Deeg, Smit & van Tilburg, 1997). In a 48-week longitudinal study with medically-ill, older patients (N = 94), intrinsic religiosity, but not public or private religious practices (e.g., church attendance, prayer), predicted more rapid remission of major depression (Koenig, George & Peterson, 1998). In their sample, every 10-point increase in intrinsic religiosity was associated with a 70% increase in speed of remission. These results were independent of quality of life, change in functional status during follow-up, family psychiatric history, number of medical diagnoses, social support, and treatment with antidepressant medication.

Based on the extant literature, it appears that R/S is modestly, but reliably, associated with lower levels of depression. Additionally, this relationship is stronger in populations contending with high chronic stress, suggesting that the relationship between R/S and depression is moderated by chronic stress. Intrinsic religiosity appears to be a particularly strong predictor of lower levels of depression with religious beliefs and attitudes being somewhat weaker predictors. All dimensions of R/S appear to be negatively associated with depression, with the exception of negative religious coping, extrinsic religiosity, and religious struggle, which exhibit reliable positive associations. Finally, there is emerging evidence suggesting that some aspects

of R/S are associated with faster recovery from clinical depression; however, the issue of causality remains unresolved.

R/S and Perceived Stress

There is a comparatively small body of literature examining the relationship between R/S and perceived stress and the findings from this literature are mixed. A few cross-sectional studies have found a negative relationship between some dimensions of R/S and perceived stress. One study with a sample of graduate students (N = 127) found that religious coping moderated the relationship between perceived school-related stress and depression, with higher levels of religious coping corresponding to a significant weakening of this relationship (Lee, 2007). Peltzer (2005) found in a large sample of high school and university students from South Africa (N = 624), that religious coping and religious salience were negatively associated with perceived stress.

However, several studies obtained the opposite result. A study of 145 college females found that spiritual well-being was related to higher levels of perceived stress cross-sectionally (Lustyk, Beam, Miller & Olsen, 2006). The authors argued that they found this counter-intuitive relationship, because being spiritually devout may introduce unique responsibilities and challenges (e.g., volunteering time and energy to help others, taking on a leadership role in the local congregation, etc.) that might increase overall stress level in the same way that secular responsibilities do. In another study with a college student sample, public and private religious practices, spiritual beliefs and attitudes, and existential spiritual meaning were all positively linked to higher perceived stress and anger (Winterowd, Harrist, Thomason, Worth & Carlozzi, 2005). The authors argued that strong religious beliefs might be associated with greater perceived stress in college, because many students who have strong religious beliefs might come

from local social contexts where people tend to share similar religious traditions; thus, these students might experience challenges to their beliefs for the first time in college and these challenges could potentially elicit feelings of stress, anger and confusion. The authors of both of the aforementioned studies argued that the positive cross-sectional association between R/S and perceived stress might be due to the fact that individuals turn to religious resources to aid in coping during times of emotional distress; however since both studies were cross-sectional, the causal nature of the relationship cannot be determined.

Still, other studies failed to find any significant link between R/S and perceived stress. In an experimental study with HIV positive patients (N = 252), enrollment in a 10-week spiritual growth group designed to encourage spiritual exploration and expression did not lead to significant reductions in HIV-related perceived stress compared to a control group (McCain et al. 2008). Additionally, a cross-sectional study with 195 college students found that religious service attendance and religious salience was not significantly associated with perceived stress (Schafer & King, 1990).

In summary, the evidence for a relationship between R/S and perceived stress is best characterized as inconclusive. As such, much more work needs to be done in this area. There is evidence for a negative, positive, and a non-significant relationship. The research in this area has relied heavily upon convenient college samples and it is possible that unique characteristics of this population might be driving the inconsistent findings. It could be that it has been difficult to obtain and replicate reliable associations between R/S and perceived stress, because religious/spiritual beliefs and behaviors are much more unstable and fluid in this population than in other age groups. More research is needed using non-college samples to assess whether there is a relationship between R/S and perceived stress.

R/S and Positive Affect.

The research examining the relationship between R/S and positive affect has been mixed, with some studies showing a positive relationship and other studies reporting no significant relationship (see Lewis & Cruise, 2006 for a review); however, it has historically been difficult to draw firm conclusions from this literature, because researchers have utilized a variety of different instruments to assess both R/S and happiness.

In an attempt to establish some methodological consistency, recent research in this area has begun to employ standard measures of R/S and happiness. In this literature, R/S has been assessed using the Francis Scale of Attitudes towards Christianity (FSAC) (Francis & Stubbs, 1987), an inventory that measures intrinsic religiosity. Happiness has been assessed using the Oxford Happiness Questionnaire (OHQ) (Argyle, Martin & Crossland, 1989) or the Depression-Happiness Scale (DHS) (Joseph & Lewis, 1998). A review of this research revealed mixed findings, with significant positive associations and non-significant relationships being the most commonly reported results (Lewis & Cruise, 2006). The reviewers concluded that most of the studies using the OHQ to assess happiness found a positive relationship; whereas, studies using the DHS to assess happiness failed to obtain significant associations. Lewis and Cruise and others (Christopher, Maltby & Day, 2005) argue that the OHQ is not a true measure of happiness; rather, they assert that it is more accurately characterized as a measure of psychological well-being. Indeed, the OHQ contains several items that assess overall satisfaction and happiness with life rather than positive mood states (e.g., "I always have fun with other people", "I feel that I am in total control of all aspects of my life", "I am delighted with the way I am"). Although the literature using the OHQ provides evidence suggesting that there is a significant positive association between R/S, particularly intrinsic R/S, and

psychological well-being, it is argued here that it is inappropriate to use this literature as evidence that there is a significant association between R/S and positive affect. The results obtained from the majority of studies that used the DHS and other true measures of happiness found no significant relationship between R/S and happiness, although, contrary findings have been reported (see Table 2 in Lewis & Cruise, 2006). For example, French and Joseph (1999) found that intrinsic R/S was positively associated with positive affect in a sample of 101 undergraduates from the United Kingdom; however, this relationship was no longer significant after controlling for perceived purpose in life, suggesting that purpose in life might be a possible mediator of the relationship between R/S and positive affect, should such a relationship exist.

Although the literature suggests that the relationship between R/S and positive affect is weak or non-existent, it might only be observable under conditions of high chronic stress. In a study of 126 adults who had recently experienced major life stressors, an R/S composite index made up of items assessing frequency of religious practices and religious orientation (intrinsic vs. extrinsic) was found to be associated with greater positive affect (Loewenthal, MacLeod, Goldblatt, Lubitsh & Valentine, 2000). Perhaps the relationship between R/S and positive affect is strengthened under conditions of high chronic stress similarly to how it strengthens the relationship between R/S and other aspects of psychological adjustment (e.g., depression). However, much more research in this area must be conducted to definitively answer this question. Finally, much of the research examining the relationship between R/S and positive affect has relied on measures that assess intrinsic R/S. Much less is known about the associations between other dimensions of R/S and happiness.

Mediators of the Association between R/S and Psychological Adjustment

Although the large body of evidence reviewed above makes a strong case for a meaningful association between R/S and positive psychological adjustment, little is known about the mechanisms that might mediate this relationship. Potential mediators with the most empirical support include: personality traits, self-regulation and self-control, neural mechanisms, social support, health behaviors, physiological processes, religious coping, and possession of positive religious cognitive schemas. Evidence supporting these mechanisms as potential mediators of the relationship between R/S and psychological adjustment is presented below.

Personality traits. The association between R/S and psychological adjustment might be mediated by personality traits. Some research has examined whether R/S is linked to any of the Big 5 personality traits (i.e., openness, conscientiousness, extroversion, agreeableness and neuroticism). A meta-analysis found that religiosity was positively and reliably associated with agreeableness (cumulative effect; $r = .20$) and conscientiousness (cumulative effect; $r = .17$) (Saroglou, 2002). The pathways through which agreeableness and conscientiousness might affect psychological adjustment are not entirely clear. Perhaps, agreeableness might positively impact psychological adjustment because people who possess high levels of this trait are less likely to be engaged in interpersonal conflict and more likely to develop trusting and supportive interpersonal relationships. Conscientiousness might indirectly affect psychological adjustment, because individuals who are high on this trait might be more likely to engage in behaviors that promote physical and mental health (e.g., being compliant in therapy, taking medication as prescribed, and being less likely to engage in impulsive behaviors that might have negative emotional consequences).

Self-control and Self-regulation. Self-control and self-regulation might also mediate the association between R/S and psychological adjustment. McCullough and Willoughby (2009) defined self-control as the process by which people modify their response tendencies such that they are able to suppress one goal in order to pursue another one that is judged to have greater long-term utility. They defined self-regulation as the process by which people guide or adjust their behavior in pursuit of some desired goal; however, in contrast to self-control, this process is not necessarily deliberate and is often automatic. Research has linked these two constructs to pro-social behavior, health, and psychological well-being (see McCullough & Willoughby, 2009 for a review). McCullough and Willoughby conducted a review to determine whether R/S was associated with these two constructs. They found that intrinsic religiosity and overall R/S were positively associated with self-control, whereas, extrinsic religiosity was either negatively associated or uncorrelated with self-control. Thus, it appears that some aspects of R/S are associated with an enhanced ability to regulate behavior and this ability might promote positive psychological adjustment.

Neural Mechanisms. R/S might be associated with structural and/or functional neurological changes that in turn have a positive impact on psychological adjustment. Two quasi-experimental studies with college student samples examined whether religious conviction (N = 28) and belief in God (N = 22) are associated with lower levels of anxiety (Inzlicht, McGregor, Hirsh & Nash, 2009). They found that participants who had stronger religious conviction and greater belief in God exhibited significantly less reactivity in the anterior cingulate cortex (a cortical system that is important for self-regulation, particularly regulation of the experience of anxiety) when they made errors on a task. This association remained even after controlling for personality traits and cognitive ability. They argue that these findings

suggest that holding strong religious beliefs might lower anxiety associated with uncertainty and minimize anxiety associated with making errors. Although these findings have not yet been replicated, they open the door to an interesting line of scientific research that might help to explain the relationship between R/S and psychological adjustment at a biological level.

Social Support. Many theorists have advanced social support as a mechanism that may potentially mediate the relationship between R/S and psychological adjustment (Joiner, Perez & Walker, 2002). Social support is known to have a positive influence on psychological well-being (Cohen & Wills, 1985) and many individuals regularly access this resource through religion (George, Larsen, Koenig & McCullough, 2000). Most major world religions promote pro-social behavior and the development of supportive relationships with others (Roberts & Robins, 2000; Saroglou, Depierre & Dernelle, 2004). Perhaps encouragement of positive relationships with others helps to explain the relationship between R/S and improved perceived social support. In addition to religious doctrines that encourage harmonious interpersonal relationships, R/S might be directly linked to social support via the local religious congregation. For example, the local congregation often provides fellowship opportunities for members and might serve as a source of emotional and instrumental social support in times of hardship. In the case of the major organized religions, members are given access to a vast, sometimes global, network of individuals who share a world-view, have similar values, and could potentially provide support (see Hill & Pargament, 2003 for a review). Although social support appears to be a primary mediator of the relationship between R/S and psychological adjustment, some evidence suggests that R/S is still associated with psychological adjustment even after controlling for social support (Levin, Markides & Ray, 1996).

Health Behaviors. Many religions promote salutary behaviors (e.g., monogamy, healthy diets) and proscribe behaviors known to negatively affect health (e.g., alcohol and substance abuse, promiscuous sex). Research has demonstrated that highly religious individuals are less likely to abuse substances than individuals with marginal or low levels of religiousness (D'Onofrio et al., 1999; Kendler et al., 1997). In addition, religious involvement (e.g., attendance at religious services) has been associated with a variety of healthy behaviors, including increased preventive care use, more exercise, sound sleep quality, abstinence from smoking, moderate drinking, improved marital relationships, and healthier social relationships (Hill, Burdette, Ellison & Musick, 2006; Strawbridge et al., 2001). Although the relationship between R/S and healthy behaviors might be a stronger mediator for physical health outcomes, these factors may indirectly mediate the pathway between R/S and psychological adjustment as well.

It is important to note that religions do not always promote positive health behaviors; indeed, behaviors that negatively impact health may be encouraged in some religious contexts. For example, some religious traditions (e.g. Christian Scientists) prohibit their adherents from seeking evidence-based medical treatment. In addition, the consumption of unhealthy food is often promoted at religious functions in some religious contexts (e.g. the offering of high fat foods at African-American church events). Thus, the degree to which health behaviors mediate the relationship between R/S and psychological adjustment might change as a function of the specific religious context.

Physiological Processes. Some religious practices (e.g. prayer, meditation, singing hymns) might directly elicit physiological processes that aid in stress reduction. The relaxation response (an autonomic physiological process that is antagonistic to the stress response) can be

activated when an individual focuses on a repetitive word, sound, image, or repetitive action, such as breathing (Ai et al., 1998) and there is some evidence that prayer-like repetition of sacred phrases might be effective at producing this response (Benson, 1996). Studies have shown that repeated elicitation of the relaxation response results in several physiological changes associated with reduced stress (e.g., reduction in muscle tension, reduction in activity of the sympathetic autonomic nervous system and the hypothalamic-pituitary-adrenal axis, a lowering of blood pressure and heart rate, and changes in brain wave activity and wave function) (Delmonte, 1985). Thus, the relationship between R/S and positive psychological adjustment might be partially mediated by improved autonomic nervous system functioning; however, this mediating pathway might only be viable in religious contexts that regularly encourage religious behaviors that elicit salutary physiological processes.

Religious Coping. Religious coping is defined as "the use of religious beliefs or behaviors to facilitate problem-solving or to prevent or alleviate the negative emotional consequences of stressful life circumstances" (Koenig, Pargament, & Nielsen, 1998). Although religious coping is sometimes conceptualized as a dimension of R/S, it is conceptualized here as a mediator because there is evidence that the use of religious coping predicts outcomes independently of global religious dispositions (see Pargament, 1997 for a review). Pargament et al. (1990) identified six types of religious coping: 1) spiritually based coping (e.g., positive reappraisals, benefit finding), 2) good deeds (e.g., becoming more religiously observant), 3) discontent (e.g., expressing doubt in one's faith), 4) interpersonal religious support (e.g., turning to the congregation for material support), 5) plead (e.g., praying for a miracle), and 6) religious avoidance (e.g., reading the Bible to divert attention away from a stressor) (see Pargament et al. 1990 for a more in depth description of each type of coping). In the literature, the

aforementioned types of coping have often been classified into either positive (e.g., positive reappraisals, seeking support, etc.) or negative religious coping (e.g., demonic reappraisals, religious avoidance, discontent) (Pargament, Smith, Koenig & Perez, 1998). A meta-analysis of the literature (49 studies, 105 effect sizes, N = 13,512) found that positive religious coping has a moderate association with positive psychological adjustment (cumulative effect; r = .33), defined in this analysis as increased hope, positive affect, life satisfaction, and purpose in life (Ano & Vasconcelles, 2005). However, negative religious coping, was significantly associated with negative psychological adjustment (cumulative effect; r = .22), defined as depression, perceived stress and negative affect. James and Wells (2003) reviewed evidence suggesting that the strength of the relationship between religious coping and psychological adjustment is moderated by the salience of the underlying religious cognitive schema and the level of certainty with which attributions can be accepted (i.e., religious conviction). Religious coping is a likely pathway through which R/S positively affects psychological adjustment; however, the use of religious coping methods can also be a double-edged sword if the methods used are negative and/or avoidant.

Religious Cognitive Schemas. Religious individuals might possess religiously-oriented cognitive schemas that influence the way they perceive the world, interpret life events, and interact with others. It is likely that these schemas play a large role in cognitive aspects of religious coping (e.g., positive reappraisal of stressors, benefit finding, etc.); however, religious cognitive schemas may also promote positive psychological adjustment independent of specific stressors. For example, religious individuals might possess core beliefs that life has meaning and purpose or core beliefs that promote harmonious relationships with others (e.g., a belief in the importance of forgiveness). In two studies with a sample of college students, Steger and Frazier

(2005) found that having a meaning and purpose in life significantly mediated the relationship between religiosity and optimism, self-esteem and life satisfaction. Enright et al. (1992) found that forgiveness was associated with lower levels of depression and anxiety. Although more work needs to be done in this area, the evidence suggests that religious core beliefs about life (e.g., meaning and purpose) and relationships with others (e.g., forgiveness) might mediate the relationship between R/S and psychological adjustment.

Conceptual and Methodological Problems in R/S and Health Research

Although research examining the relationship between R/S and health has become considerably more sophisticated since it began gaining significant scientific attention in the 1980's, work in this area is still limited by numerous methodological and conceptual problems, some of which stem from the complexity of the R/S construct itself. These difficulties include a lack of agreement on the operational definition for R/S, a related failure to develop a gold-standard instrument to assess R/S, use of research designs that do not control for known confounding variables and presentation biases, failure to include potential moderating factors in research models, lack of consensus on the number and definitions of dimensions of R/S that are relevant to psychological well-being, over reliance on cross-sectional research designs, and the failure to match R/S measures with the appropriate religious context.

Lack of a consensus on operational definition of R/S. Research linking R/S to psychological adjustment is fundamentally limited by a failure of the field to agree on a standard operational definition for religiosity and spirituality. Because of this lack of a consensus, the operational definitions for R/S differ across disciplines and between researchers (Slater, Hall & Edwards, 2001). Although agreement is far from unanimous (Zinnbauer, Pargament & Scott, 1999), religiosity has commonly been defined as the outward practices associated with organized

religion; whereas, spirituality has been defined as the personal and subjective aspects of religion that are independent of organized religion (Hill & Pargament, 2003). As stated earlier, R/S is defined here as a superordinate construct that encompasses the constructs of religiosity and spirituality as commonly defined in the literature, but even this approach would not receive universal acceptance in the field. The failure to reach a consensus on the operational definition of R/S has resulted in difficulty interpreting study findings and summarizing literature in this area.

Lack of a gold-standard R/S inventory. Because the field has been unable to reach a consensus on an operational definition for R/S, it has been difficult to develop a gold-standard instrument for the measurement of R/S. Since there is no accepted standard instrument to measure R/S, a plethora of R/S inventories have been created to aid in assessment of this construct. Over 100 psychometric instruments are currently available to assess various dimensions of R/S (Hall, Meador & Koenig, 2008). Sloan, Bagiella and Powell (1999) argue that the diversity of approaches used to measure R/S makes research in this area considerably more difficult to interpret and might contribute to inconsistent and contrary findings. Well aware of this problem, Gorsuch (1984) argued that future research should only use existing R/S measures, because the instruments available at that time were sufficient to fully assess all relevant dimensions of R/S. Many years later, Hill and Pargament (2003) also acknowledged that existing measures assessed most dimensions of R/S; however, they assert that some important dimensions of R/S are still not adequately covered by available instruments (e.g., perceptions of religious/spiritual growth and decline, illness specific religious beliefs and coping).

Although myriad measures have been created and utilized to assess R/S, some measurement schemes have enjoyed much wider support and use in the literature. Hall, Meador and Koenig (2008) note that the most popular R/S measures fall into one of seven categories: 1) public religious practices, 2) private religious practices, 3) global self-assessments of religiosity, 4) religious orientation/motivation (i.e., intrinsic/extrinsic religious orientation), 5) spiritual well-being, 6) religious coping, and 7) multi-dimensional measures.

Measures of public religious practices (e.g., church attendance) have been strongly linked to a number of mental and physical health outcomes. Often, even 1-item scales of public religious practices have yielded stronger relationships with health outcomes than more sophisticated measures of R/S (McCullough, Hoyt, Larson, Koenig & Thoresen, 2000).

Global self-assessment of religiosity and measures of private religious practices have largely yielded weak and inconsistent associations with health and well-being (Krause, Ellison, Shaw, Marcum & Boardman, 2001). Researchers have argued that measures that assess these dimensions of R/S might have weaker associations with health, because they do not assess practices that tap into social support networks like measures of public religious practices do (George, Ellison & Larson, 2002).

Intrinsic religious orientation measures have demonstrated good reliability and this dimension has yielded strong relationships with numerous positive mental and physical health outcomes (Koenig, Pargament & Nielsen, Watson et al., 2002). Extrinsic religiosity measures tend to be much less psychometrically sound (e.g., poor reliability), but have nevertheless, been linked to negative health outcomes (Hall, Meador & Koenig, 2008). The intrinsic/extrinsic religious conceptualization has been criticized, because it creates a false dichotomy (i.e., people can be religious for both intrinsic and extrinsic reasons) (Hall, Meador & Koenig, 2008). Also,

this conceptualization places a value judgment on both constructs, with intrinsic orientation being perceived as good and extrinsic orientation being viewed as bad. In spite of these weaknesses, studies employing intrinsic/extrinsic inventories have found strong relationships between R/S and a variety of outcomes (Hall, Meador & Koenig, 2008). Plante & Boccaccini (1997) argue that their strength of faith dimension is a much more psychometrically and conceptually sound way of assessing religious orientation and motivation without the problems associated with the intrinsic/extrinsic dichotomy.

Spiritual well-being measures have been linked to a number of positive health outcomes, but Hall, Meador, and Koenig (2008) contend that many of these measures are worded in such a way that it is not entirely clear whether they assess something that is distinctly religious or general constructs that may have roots in positive psychology (e.g., meaning, inner peace, purpose in life). Additionally, many of these instruments (e.g., the SWB; Paloutzian & Ellison, 1982) tend to be strongly contaminated by measures of mental health and well-being, and thus, any reported associations between spiritual well-being measures and these constructs might be artificially inflated (Moreira-Almeida, Neto & Koenig, 2006).

Religious coping measures assess whether and how individuals use their religion to cope with specific stressors. In this paper, religious coping has been conceptualized as a mediator of the relationship between R/S and psychological adjustment, but measures of religious coping are described here, because these measures have commonly been used in the R/S and health literature to assess R/S in general. The Brief R-COPE (Pargament et al., 1998) is probably the most widely used measure of religious coping and this instrument has been linked to a variety of positive and negative health outcomes (Hall, Meador & Koenig, 2008).

In recent years, multi-dimensional measures of R/S have emerged that have combined various theoretically and empirically derived R/S dimensions to create comprehensive instruments. These measures are strong, because they allow researchers to identify the relative contributions to health and well-being of different dimensions of R/S. Additionally, R/S is now generally considered in the field to be a multi-dimensional construct from both empirical and theoretical perspectives (Hall, Meador & Koenig, 2008); thus, multi-dimensional measures are thought to better reflect the underlying nature of the construct that they purport to assess. Perhaps the most well-validated and widely used multi-dimensional instrument is the *NIA/Fetzer Multi-dimensional Measurement of Religiousness/Spirituality* (Idler et al. 2003). This is a psychometrically sound, multi-dimensional instrument that was developed via expert consensus and validated on a large representative population-based survey. It contains 12 dimensions (beliefs, values, religious affiliation, organizational religiousness, private religious practices, commitment, meaning, coping, history, forgiveness, daily spiritual experiences, and support). Although this measure could potentially emerge as the gold standard in assessing R/S, it is somewhat limited, because it cannot be summed to obtain a comprehensive score of overall R/S, many of its dimensions have low discriminate validity, and it does not include some important dimensions of R/S that theoretically could have implications for health (e.g., health-related beliefs). Finally, because this instrument was designed to assess universal R/S, it might not be the best measure of features of R/S that are important in specific religious contexts.

In spite of considerable advances in the measurement of R/S, particularly with the advent of multi-dimensional measures, R/S is still commonly assessed in practice using poorly validated and rudimentary measures. These poor methodological practices stem from the common treatment of R/S as a covariate or an add-on variable in empirical research whose primary aims

were only tangentially related to R/S (Hill & Pargament, 2003). Others have criticized many R/S instruments, because they are commonly biased towards Judeo-Christian, particularly Protestant, religious contexts (Hall, Meador & Koenig, 2008). Although this is a valid criticism of instruments which are purported to measure "universal" R/S, it is argued here that all purportedly universal inventories are inherently limited because they fail to measure potentially important aspects of R/S that are unique to specific religious contexts. Finally, many measures of R/S are criticized, because there is a lack of data about their temporal stability, convergent validity, potential ceiling effects, and social desirability bias (Plante & Sherman, 2001).

Failure to control for potential confounds. Research linking R/S to health and well-being has also been limited by a widespread failure to control for potential confounding variables. Sloan, Bagiella & Powell (1999) argue that much of the research linking R/S to health-related outcomes has failed to control for variables that co-vary with R/S and might play a key role in the association between R/S and health (e.g., age, gender, education, ethnicity, socioeconomic status, and health status). In particular, some have argued that the positive association between health and public religious practices is confounded, because only healthier people can engage in such activities (Levin & Vanderpool, 1987). Although some research has demonstrated that this relationship persists even after controlling for baseline health status (Idler & Kasl, 1997a; Idler & Kasl, 1997b), the widespread failure to control for this and other potential confounds justifiably causes some to question the scientific rigor of work in this area. Finally, social desirability (Trimble, 1997) and defensiveness (e.g., denial of distress) (Steffen & Fearing, 2007) has been associated with R/S. Although this association has the potential to bias R/S research, there is some evidence suggesting that these factors do not explain the observed association between R/S and psychological adjustment (Trimble, 1997; Steffen & Fearing, 2007). It should also be noted

that some researchers argue against controlling for these biases, because items on many measures of social desirability tap into the same factors that are indicative of living a religiously committed lifestyle; thus, factoring out this variance might also inadvertently factor out important aspects of R/S that may have implications for health and well-being (Trimble, 1997). In accordance with this work, it is argued that self-presentation biases should only be controlled for in R/S research if researchers take care in selecting social desirability inventories that do not contain items that might be indicative of religious commitment.

Failure to consider potential moderators. The relationship between R/S and psychological adjustment might be moderated by a number of important factors. A failure to understand these moderators and test for them in empirical research appears to be partially responsible for the allegedly inconsistent and contradictory findings commonly reported in this literature. Chronic stress is likely an important moderator of the relationship between R/S and psychological adjustment. Some researchers argue that the relationship between R/S and psychological adjustment might only be strong under conditions of high chronic stress (i.e., the stress buffering hypothesis) (Cohen & Wills, 1985). Others argue that R/S is positively associated with positive psychological adjustment, regardless of chronic stress level (i.e., the main effect hypothesis) (Smith, McCullough & Poll, 2003). Strong evidence for both of these hypotheses has been presented in the literature (Kendler, Gardner & Prescott, 1999; Smith, McCullough & Poll, 2003). It is likely that the relationship between R/S and positive psychological adjustment is present regardless of chronic stress level, but is strengthened as chronic stress increases.

In addition to chronic stress, there are several demographic factors that might moderate the relationship between R/S and psychological adjustment. It is well-attested in the literature

that women, the elderly, and African-Americans tend to be more religiously active than men, the young, and Caucasians, respectively (Stark, 2002; Ellison, 1995). Indeed, some research suggests that the relationship between R/S and psychological adjustment might be stronger in women, older individuals, and African-Americans (Blaine & Crocker, 1995; Musick, Koenig, Hays & Cohen, 1998); however, a large meta-analysis of the literature linking R/S to depression failed to find significant moderation of this relationship by ethnicity, gender, or age (Smith, McCullough & Poll, 2003).

Some research suggests that the relationship between R/S and psychological adjustment is moderated by the importance of religion in one's social network (i.e., peer group salience of R/S), such that the relationship strengthens as religion becomes more salient (Snoep, 2003, Loewenthal et al., 2000; Winterowd et al., 2005). In other words, R/S might be more likely to be positively associated with psychological adjustment for individuals who live in contexts in which other people share similar religious/spiritual beliefs. If contextual salience of R/S emerges as a stable moderator, it could explain why negative associations between R/S and psychological well-being are often reported in studies that use college student samples, because this population might exhibit lower peer group salience of R/S.

Finally, researchers in the field also must begin to consider the possibility that the relationship between R/S and psychological adjustment is moderated by multiple factors which interact with each other (i.e., moderated-moderated relationships) or the mediators of this relationship change as a function of some moderator (i.e., moderated-mediated relationships). For example, perceived social support and positive relationships with others may mediate the relationship between R/S and depression for women, but not for men.

Different relationships between different dimensions of R/S and psychological adjustment. Different dimensions of R/S might have different relationships with psychological adjustment. These different relationships might also help to explain some of the inconsistent and contradictory findings in the literature. In a meta-analysis of studies examining the relationship between R/S and mental health, the operationalization of R/S was found to significantly moderate this relationship (Hackney & Sanders, 2003). It is possible here that the valence and direction of the relationship between R/S and mental health varied as a function of the dimension(s) of R/S assessed. Consistent with these findings, McCullough, Smith and Poll (2003) found that some dimensions of R/S had different relationships with depression (e.g., intrinsic religiosity demonstrated a strong negative relationship and extrinsic religiosity demonstrated a strong positive relationship with depression). Thus, the potential for different relationships between different dimensions of R/S and psychological adjustment makes it considerably more difficult to interpret and review the findings of research in this area. Moreover, the complexity of this issue is increased, because leading theorists in the field have not come to a consensus on the number or definitions of dimensions of R/S (Koenig, McCullough & Larson, 2001). In fact, each major theory features a unique typology for the R/S construct (see Hall, Meador & Koenig, 2008; Table 1). Although complete consensus on the typology of R/S continues to elude the field, 4 broad dimensions of R/S are common across all of the major structural theories (public religiosity, private religiosity, beliefs/values, and strength of commitment to religion) (King & Hunt, 1972; Hill & Hood, 1999; Koenig, McCullough & Larson, 2001, Larson et al., 1997; Idler et al., 2003). Evidence is beginning to emerge suggesting that these common dimensions have different relationships with health, but much more research in this area is still needed.

Over reliance on cross-sectional research designs. Much of the research linking R/S to health and well-being has relied upon cross-sectional research designs (Hill & Pargament, 2003). These designs allow researchers to examine associations, but do not address issues of causality and provide no data about how R/S changes over time, especially in response to changes in psychological and environmental conditions. In the literature, positive, negative and non-significant relationships have been reported between R/S and psychological adjustment. Although many of the inconsistent findings can be attributed to one of the conceptual and methodological problems that have been discussed above, some of these results can be attributed to the inherent weaknesses of the cross-sectional design. For example, cross-sectional studies that report a positive association between R/S and psychological distress could obtain this result because exhibiting a high level of R/S leads to greater distress or, because greater distress leads people to become more religious. Idler et al. (1995) used quantitative and qualitative data from their cross-sectional study to argue the latter point; whereas, Winterowd et al. (2005) argued the former point using data from their cross-sectional analysis. Indeed, since many people use R/S as a coping resource, it is likely that there is a bi-directional relationship between R/S and psychological adjustment. Of course, it is possible that the association between R/S and psychological adjustment is not causal at all and there is some unknown third variable that is driving the relationship. Unfortunately, cross-sectional designs do not allow researchers to answer questions of causality and bi-directionality empirically. Thus, although cross-sectional designs have provided a wealth of valuable information about the relationship between R/S and psychological adjustment and can still be used to test hypotheses about the mechanisms that drive this relationship, an over-reliance on these designs has left many questions unanswered.

Failure to match R/S measures with the appropriate religious context. Another conceptual issue that complicates research in this field is the controversy over whether R/S is best measured using context-specific (i.e., R/S measures that are designed to assess R/S in a particular religious context) or "universal" inventories. The field as a whole has begun gravitating towards the use and development of R/S measures that are purported to be universal (Hall, Meador & Koenig, 2008). The use of universal R/S inventories can be advantageous, because these instruments can be used to assess R/S in multiple different religious populations; however, there are some disadvantages to this approach. Moberg (2002) argued that universal R/S measures manifest a reductionism that limits their ability to assess R/S dimensions and phenomena that may be important in specific religious traditions. In other words, universal inventories can be used to adequately measure R/S in all populations, but because they are so general, they might fail to measure this construct well in any population. Hall, Meador and Koenig (2008) assert that although different faiths may share many common features (e.g., prayer, the Golden Rule, belief in God), spirituality is always expressed through context-specific religious beliefs and behaviors and oriented towards some context-specific end (e.g., Christian R/S is organized towards the belief in Jesus Christ as the son of God). For this reason, they argue that context-specific measures of R/S are better able to provide comprehensive measurement of R/S, because they capture the unique features of specific traditions that universal measures might not. Although the value of universal approaches to the measurement of R/S is acknowledged here, it is argued that research in this area will be considerably enhanced if context-specific measures are matched to the appropriate broad religious context (e.g., Christian R/S inventories used with Christian samples, Muslim R/S inventories used with Muslim samples, etc.). For example, according to some estimates, over one quarter of the world's population

(Hinnells, 2005) and 78% of Americans (Pew Forum, 2007) identify as Christian. Considering the size of this population, it is unfortunate that R/S in this group is not routinely being studied using measures that are explicitly targeted towards it. Specialized measures of a variety of different psychological constructs have been developed and are in common use for much smaller populations. Of course, if context-specific instruments were designed for every context, it would lead to an explosion of new instruments in a field that already has far too many and would make it difficult or impossible to compare R/S across contexts. Hall, Meador and Koenig (2008) argue that both of these potential problems could be addressed by developing measures that are designed in such a way that context-specific language and items could be easily plugged in throughout the inventory to tailor the same inventory for use in different religious contexts. Although the argument for the use of context-specific measures of R/S makes intuitive sense, the question of whether R/S is best measured using context-specific or universal measures is ultimately an empirical one. More research must be conducted to determine whether the use of context-specific measures provides any incremental gain (e.g., increased reliability, predictive validity) in the assessment of R/S and whether this gain is significant enough to justify a proliferation of new context-specific measures.

Conclusions Based on the Extant Research

Although much of the research examining the relationship between R/S and psychological adjustment is limited by one or more of the aforementioned methodological and conceptual shortcomings, the literature is rich enough to allow for some conclusions. Overall, the empirical evidence suggests that there is a positive relationship between overall R/S and psychological adjustment; however, this relationship varies considerably as a function of the aspect of psychological adjustment being studied. For example, the literature clearly

demonstrates that R/S has a modest, but reliable, association with lower levels of depression. In contrast, there appears to be at best a weak and inconsistent positive association, between R/S and positive affect. The literature examining the relationship between R/S and perceived stress is equivocal, with researchers finding no relationship, positive relationships, and negative associations between R/S and this construct. Much more research in this area is needed before firm conclusions can be drawn. Specifically, more studies are needed that do not rely on convenience samples of college students.

There is strong evidence that the relationship between R/S and psychological adjustment also differs as a function of the dimension of R/S being assessed. Research shows that the strongest positive associations between R/S and psychological adjustment are found when measures of intrinsic religiosity or public religious practices are used. Weaker positive associations are found between psychological adjustment and most other dimensions of R/S (e.g., beliefs, attitudes, private religious behaviors, etc.). In contrast, measures of extrinsic religiosity and religious struggle reliably exhibit negative associations with psychological adjustment. Finally, the use of negative religious coping strategies has been negatively associated with psychological adjustment.

In addition, the empirical evidence suggests that the association between R/S and psychological adjustment is moderated by a number of important factors. Chronic stress appears to be the most reliable moderating factor, with considerable evidence showing that the relationship between R/S and psychological adjustment is stronger under conditions of high chronic stress. Other potential moderators that have mixed empirical support include gender, ethnicity, and age. The results of some studies suggest that the association between R/S and positive psychological adjustment is stronger for women, African-Americans, and the elderly

than for men, Caucasians, and young adults, respectively; however other studies looking at these variables as moderators failed to support these findings. In addition, there is emerging evidence suggesting that the relationship between R/S and psychological adjustment might be stronger in contexts in which R/S is more salient.

Finally, the relationship between R/S and psychological adjustment is likely mediated by a variety of different factors. The factors that have gained the most empirical support include social support and the use of religious beliefs and/or behaviors to cope with stress (i.e., religious coping).

Statement of the Problem

Although the literature suggests that there is a relationship between R/S and aspects of psychological adjustment, there are still many important questions that remain unanswered and several methodological and conceptual challenges that can be addressed. Broadly, the purpose of the present study is to address some of the limitations of the previous literature and advance understanding of the dimensional nature of the R/S construct and its association with psychological adjustment. Consistent with the argument posited by Hall, Meador and Koenig (2008), it is believed that R/S is best measured using context specific measures targeted to the appropriate religious context. In the present study, R/S will be assessed in a Christian population using an R/S measure that is designed specifically for use in this population. Although many of the dimensions of R/S being assessed in the present study are likely relevant in other religious contexts, results obtained through the present study might not generalize beyond Christian R/S contexts.

Specifically, the present study will investigate the following 5 questions: 1) What is the dimensional structure of Christian R/S, 2) Is there a significant association between overall Christian R/S and psychological adjustment? 3) Is the association between Christian R/S and psychological adjustment at least partially mediated by religious coping, positive relationships with others, religious social support, and purpose in life? 4) Is the association between Christian R/S and psychological adjustment moderated by psychosocial factors chronic stress and peer group salience of R/S? 5) If overall Christian R/S has more than one empirically distinct component, are there different relationships between different components of Christian R/S and psychological adjustment?

The research to date that examines the association between R/S and psychological adjustment has historically been limited by a number of methodological and conceptual shortcomings. These weaknesses include a failure to control for potential confounds, an over-reliance on convenience samples of college students, the use of global measures of R/S that assess a limited number of dimensions, a failure to match context-specific R/S inventories with appropriate religious populations, the failure to assess whether different components of R/S have different relationships with psychological adjustment, and little consideration of potential moderating factors.

The present study will address these limitations by 1) controlling for potential confounds (e.g., SES, age, etc.), 2) testing potential moderators and mediators, 3) using a diverse community sample, 4) and using a more comprehensive, multi-dimensional measure of R/S that is context-specific and matched to the appropriate population (i.e. using a Christian R/S measure to assess R/S in a sample that self-identifies as Christian).

Hypotheses

As shown in the conceptual model guiding this study (See *Figure 1*), it is hypothesized that:

Hypothesis 1. Overall Christian R/S will be a unified construct that has multiple empirically distinct components.

Hypothesis 2. R/S will predict better psychological adjustment (lower levels of depression, lower levels of perceived stress, and higher levels of positive affect), even after controlling for potential confounds (age and SES).

Hypothesis 3. The relationship between R/S and psychological adjustment will be mediated by purpose in life. That is, greater levels of R/S will predict a greater sense of purpose in life, and a greater sense of purpose in life will predict better psychological adjustment.

Hypothesis 4. The relationship between R/S and psychological adjustment will be mediated by positive relations with others. That is, greater levels of R/S will predict higher levels of perceived positive relations with others, and higher perceived positive relations with others will predict better psychological adjustment.

Hypothesis 5. The relationship between R/S and psychological adjustment will be mediated by religious coping. That is, higher levels of R/S will predict higher levels of religious coping, and higher levels of religious coping will predict better psychological adjustment.

Hypothesis 6. The relationship between R/S and psychological adjustment will be mediated by religious social support. That is, higher levels of R/S will predict greater religious social support, and higher levels of religious social support will predict better psychological adjustment.

Hypothesis 7. The relationship between R/S and psychological adjustment will be moderated by R/S salience in peer group, such that the relationship will be significantly stronger when R/S is very salient in one's peer group.

Hypothesis 8. The relationship between R/S and psychological adjustment will be moderated by chronic stress, such that the relationship will be significantly stronger under conditions of high chronic stress.

Exploratory Analyses. Additional analyses will be performed to determine whether the relationship between R/S and psychological adjustment differ by gender or ethnicity (African-American vs. Caucasian). Finally, analyses will be conducted to explore whether different components of R/S have different relationships with the proposed mediators and psychological adjustment?

Method

Participants

A sample of 505 adult (age ≥ 18) United States residents who self-identify as Christian was recruited for the study. Although the goal of this study was to assess R/S from a Christian perspective, participation was open to all individuals regardless of religious orientation in order to further characterize the demographics of the population from which the sample was recruited. The total sample size was 955. Eight hundred ninety-two (892) individuals completed the survey, including 389 non-Christians and/or individuals who did not identify a religious affiliation and therefore were not included in the primary analyses. Participants were recruited through the internet using Amazon MechTurk. Amazon MechTurk is a global online community of individuals who have voluntarily signed up to work on human intelligence tasks (HITs) designed by employers in exchange for monetary compensation. A HIT announcement containing a link to the survey was uploaded to Amazon MechTurk and participants accessed the study by agreeing to complete the HIT.

Sample Recruitment Procedures. The reliance on internet-based sampling methodology raises several methodological issues. The two most common problems are low response rates, which might adversely affect generalizability of study findings, and lack of representativeness of the population at large on key demographic variables (Couper, 2000). Specifically, internet users are typically younger, more likely to be Caucasian, more affluent, and more educated than the general population (Pew Internet and American Life Project, 2007). Because of these potential methodological weaknesses, great care was taken in the proposed study to collect demographic information in order to carefully characterize the sample.

Despite these limitations, an internet-based sample methodology was chosen because it was one means with which to efficiently recruit a large sample that was diverse in terms of Christian denominational beliefs. Representativeness on this variable was most important considering the aims of the present study (i.e., to identify broad dimensions of R/S in a Christian sample). Telephone and mail-based surveys were rejected because of prohibitive cost. Face-to-face surveys conducted at area churches were rejected because they would not provide adequate denominational diversity and would miss a significant portion of the Christian population (i.e., those who identify as Christian but rarely or never attend church). Finally, a college student sample was rejected because these samples tend to be even less representative than internet-based samples in terms of traditional demographic variables (e.g., age, years of education) (Birnbaum, 2004).

Inclusion/Exclusion Criteria. Potential participants were included in the study if they were 18 years of age or older, English-speaking, and lived in the United States. For the primary analyses, participants were included only if they self-identified as Christian.

Procedures

Participants were recruited via HIT announcements on Amazon MechTurk that were targeted at MechTurk users who endorsed that they were 18 years of age or older and lived in the United States. The HIT announcement featured the following message:

> Take an anonymous survey about spirituality for a chance to win $200! If you live in the US and are 18 years of age or older, you are invited to participate in a 15 minute survey about spirituality.

More detailed information about the purpose and procedures of the study were provided on the study's webpage. Upon clicking on the HIT, potential participants were forwarded to the study's webpage on Qualtrics.com (the hosting site for the survey). Qualtrics.com is a website that

allows users to create online surveys, collect data online, and transmit data to databases where they can be analyzed. Qualtrics.com provided services for this project in exchange for promotion and demoing to other members of the psychology department at UCLA. Informed consent was obtained online. Participants clicked a box indicating that they understood the purpose, risks, and benefits of the study and agreed to participate.

Participants who consented were directed to begin the survey. Compensation for participation in the study included $1 for study completion and the opportunity to enter a drawing to win one of five $200 Visa gift cards. Participants were asked to indicate whether they wished to opt out of compensation for the study by checking a box. This option was provided because participants needed to submit their contact information (e.g., email address, name, and postal address) in order to receive the prize and it was thought that some participants might not wish to provide such information over the internet. Thirty-six percent of participants opted out of participation in the drawing.

The online survey contained measures assessing Christian R/S and the other study variables. Since the goal of the study was to examine Christian R/S and its relationship with psychological adjustment, only participants who self-identified as Christian were directed to complete the entire study protocol, including the R/S measures. All other participants completed a short protocol that did not include the R/S measures. Christian self-identification was determined with a screening item embedded early in the survey. The entire study protocol took approximately 10 to 15 minutes to complete with the short protocol taking about 5 to 10 minutes. After completing the study, participants were thanked for their participation and given the contact information for the principal investigator. Those participants who opted to enter the drawing were asked to provide contact information. Multiple submissions by the same

participant were prevented by restraining participation to unique Amazon MechTurk users; therefore, the same user could not complete the study protocol more than once. In addition, IP Addresses were collected and screened as another way to check for multiple submissions. Only 2 duplicate submissions were detected. Participant confidentiality was ensured online via a password, and an automatic de-identification process in which identifying information (if collected) was stored separately from participants' responses. An ID number was assigned to each participant based on the order in which they completed the study. This code was not linked to any identifying information. In addition, secure sockets layer (SSL) encryption was used to ensure safe transmission of data from participants' computers to the Qualtrics.com server that hosted the survey and from the Qualtrics.com server to password protected databases. Identifying information was only used for purposes of compensating participants and was destroyed after the drawing was conducted. Finally, all data obtained through this study are reported in aggregate and do not identify any individual respondent.

Pilot Study

Preliminary data for the present study were collected through piloting of portions of the study protocol on Amazon MechTurk. Data obtained through the pilot study was used to answer the following 2 questions: 1) Can the *MCRSI* be shortened to a length that is less burdensome on potential participants without sacrificing quality of measurement? and 2) Does the *MCRSI* have acceptable psychometric properties (e.g., internal consistency, convergent validity)?

In addition, data from the pilot study were used to test *Hypothesis 1* (Christian R/S is made up of multiple empirically distinct components).

The procedures for the main study described above were followed in the pilot study with the following exceptions: 1) only individuals who self-identified as Christian were included in

the study, 2) the pilot study had a target *N* of 300, and 3) the study protocol was shortened to contain only the following instruments: the *MCRSI,* a brief demographic questionnaire (age, gender, ethnicity, years of education), and the *CES-D.*

Measures

Copies of all of the measures used in this study can be found in Appendix A through L.

Demographics and Covariates:

Demographic Information. This information was collected using 19-items that was created for use in this study, and included questions on gender, ethnicity, age, geographic location, years of education, approximate annual income, subjective global assessment of health, functional status, and religious/spiritual demographic information.

Predictor:

Christian Religiosity/Spirituality. Christian R/S was assessed using the 37-item *Multi-dimensional Christian Religiosity and Spirituality Inventory (MCRSI)* (Schettino & Dunkel Schetter, 2010 unpublished). This inventory was created based on pretesting in a college sample of over 200 to assess R/S as a multi-dimensional construct in Christian religious contexts. Most items are scored on a 6-point Likert-type scale from "strongly disagree" to "strongly agree". Items that assess frequency of religious practices are scored on a 6-point Likert-type scale from "never" to "once a day or more". The inventory assesses 12 conceptually distinct dimensions that are thought, based on the scientific literature and the premises of Christian beliefs, to be important in Christian religious contexts. The following conceptual dimensions are assessed: 1) Identification, 2) Internalization, 3) Intrinsic Religiosity, 4) Forgiveness, 5) Responsibilities, 6) God Locus of Control, 7) Personification of God, 8) Meaning/Purpose, 9) Health Beliefs, 10) Afterlife Beliefs, 11) Public Religious Behaviors, and 12) Private Religious Behaviors. Please

see *Table 1* for a full description of these dimensions and representative items and *Table 2* for a complete list of the items. Although the *MCRSI* was designed for use in Christian religious contexts, many of the conceptual R/S dimensions included in this measure are likely to be important in non-Christian religious traditions; however, a determination of whether these dimensions are relevant outside of Christian religious contexts was not the goal of this study.

In addition to these dimensions, the inventory also has items that assesses 2 other study variables: religious social support (3 items) and peer group salience of R/S (3 items). These items were embedded in the inventory, but not included in the factor analyses that were used to determine the dimensional structure of R/S. A more detailed description of the content and scoring of these items is provided later in this section. Scoring for the *MCRSI* was determined based on the results of an exploratory factor analysis and internal consistency analyses of the obtained factors.

The forgiveness items and the religious social support items included in the *MCRSI* were adapted from the *NIA/Fetzer Multi-dimensional Measurement of Religiousness/Spirituality* (Idler et al. 2003) for use with an exclusively Christian population. Items assessing intrinsic religiosity were derived from concepts proposed by Allport & Ross (1967).

Scoring for the *MCRSI* was based on the result of an exploratory factor analysis (EFA) using the pilot sample data. The EFA revealed that the *MCRSI* had 2 factors (Religious Behaviors and Spiritual Attitudes/Beliefs). A total score was calculated for each factor. A total score for the *Religious Behaviors* subscale (range; 0 – 25) was obtained by summing scores on the 5 items assessing this component of R/S, with higher scores corresponding with greater self-reported frequency of religious behaviors. The range of the variable in this sample was 0 – 25 (M = 6.5, SD = 5.80). A strong internal consistency estimate (α = .88) was obtained. A total

score for the *Spiritual Attitudes/Beliefs* subscale (range; 0 – 130) was obtained by summing scores on the 26 items assessing this component of R/S, with higher scores corresponding with greater self-reported intensity and conviction of spiritual attitudes/beliefs. The range of the variable in this sample was 0 – 120 (M = 83.0, SD = 25.90). This subscale also had strong internal consistency (α = .96).

Hypothesized Moderators:

Peer Group Salience of R/S. This variable was assessed using 3 items embedded in the *MCRSI* which asks participants to report on the percentage of their close friends, family, and people they interact with most regularly who are Christian. All items are scored on a 5-point Likert-type scale from "none or a few" to "all or most". A total *Peer Group Salience of R/S* (*PSRS*) score (range; 0 – 12) was obtained by summing scores on the 3 items, with higher scores corresponding with greater salience of Christian R/S in one's peer group. The range of the variable in this sample was 0 – 12 (M = 8.8, SD = 2.94). Internal consistency of the inventory reported in this sample was good (α = .79).

Chronic Stress. The cumulative burden of life stresses experienced during the last month was assessed using a shortened version of the *Chronic Burden Scale (CBS)* (Gurung, Taylor, Kemeny, & Myers, 2004). Eight items (Items 1, 2, 6, 8, 9, 10, 15 and 16) from the original 21-item measure were selected for inclusion in the present study. These items were selected, because they included two items from 4 different domains of chronic stress (financial, occupational, interpersonal, and health). The inventory assesses the degree of difficulty caused by life stressors in these 4 domains over the past month. Items are answered on a 4-point scale from "not a problem for me in the last month" to "a major problem for me in the last month". A total score (range; 0 – 24) was obtained by summing scores on all items, with higher scores

corresponding with greater perceived chronic stress. The range of the variable in this sample was 0 – 24 (*M* = 5.3, *SD* = 4.49). The modified inventory had adequate internal consistency in this sample (α = .76).

Hypothesized Mediators:

Religious Coping. This domain was assessed using 3-items from the 21-item *Brief RCOPE* (Pargament et al., 1998). The items selected for use in this study were included in the General Social Survey as part of validation study for the *NIA/Fetzer Multi-dimensional Measurement of Religiousness/Spirituality* (Idler et al., 2003), resulting in validation of these items in a large nationally representative community resident sample. The *Brief RCOPE* is one of the best measures available for assessing both positive and negative religious coping (Pargament, 1997) and it has been used in many studies examining R/S and health (Hall, Meador & Koenig, 2008). The 3-items used in this study assessed the degree to which participants rely on positive religious coping strategies (e.g., collaborating with God, looking to God for strength) when dealing with stress. The items are scored using a 4-point Likert-type scale ranging from "not at all" to "a great deal". A total score (range; 0 – 9) can be obtained by summing scores on all items with higher scores corresponding with greater use of positive religious coping. The range of the variable in this sample was 0 – 9 (*M* = 5, *SD* = 2.56). Idler et al. reports good internal consistency in their sample for the 3-items used in the present study (α = .81), which was similar to that obtained in this sample (α = .82)

Religious Social Support. This domain was assessed using 3 items embedded in the *MCRSI*. These items assessed perceived social support coming from one's church or religious fellowship group. All items are scored on a 4-point Likert-type scale from "strongly disagree" to "strongly agree". A total *Religious Social Support* (*RSS*) score (range; 0 – 9) was obtained by

summing scores on all items with higher scores corresponding with greater use of positive religious coping. The range of the variable in this sample was 0 – 15 (*M* = 11.1, *SD* = 3.58). These items exhibited good internal consistency (α = .86) in this sample.

Purpose in Life. This construct was assessed using the 7-item *Purpose in Life* scale from *Ryff's Psychological Well-being Scale* (*RPWB*) (Ryff, 1989). This version of the Purpose in Life Scale (*RPWB-PIL*) was used and validated in the Wisconsin Longitudinal Study and has been used to measure purpose in life in several published reports using these data (Marks, 1996; Carr, 1997). The scale contains 7-items assessing the degree to which one perceives having a purpose in life. Some items include, "I enjoy making plans for the future and working to make them a reality", "I am an active person in carrying out the plans I set for myself", and "I don't have a good sense of what it is I'm trying to accomplish in life". Items are scored on a 6-point Likert-type scale ranging from "disagree strongly" to "agree strongly". A total score (range; 0 – 35) was obtained by reverse scoring negatively worded items and adding them to positively worded items. High scores indicate greater perceived sense of purpose in life. The range of the variable in this sample was 5 – 35 (*M* = 24.6, *SD* = 6.41). Internal consistency of this measure as reported in the Wisconsin Longitudinal Study is good (α = .79), which is similar to that obtained in this sample (α = .83).

Positive Relations with Others. This construct was assessed using the 7-item Positive Relations with Others scale from *Ryff's Psychological Well-being Scale* (*RPWB*) (Ryff, 1989). This version of the Positive Relations with Others scale (*RPWB-SS*) was used and validated in the Wisconsin Longitudinal Study and has been used to measure positive social relationships in published reports based on these data (Marks, 1996). The scale contains 7-items assessing the degree to which one perceives having positive and mutually supportive relationships with others.

Some items include, “I know I can trust my friends and they know they can trust me”, “I enjoy personal and mutual conversations with family members and friends”, and “I often feel lonely because I have few close friends with whom to share my concerns”. Items are scored on a 6-point Likert-type scale ranging from “disagree strongly” to “agree strongly”. A total score (range; 0 – 35) was obtained by reverse scoring negatively worded items and adding them to positively worded items. High scores indicate greater perceived positive relationships with others. The range of the variable in this sample was 10 – 35 (M = 24.1, SD = 5.84). Internal consistency of this measure as reported in the Wisconsin Longitudinal Study is good (α = .78). A comparable internal consistency estimate was obtained in this sample (α = .77).

Outcome:

Psychological adjustment is the primary outcome in the present study. It is being operationalized as a latent factor made up of the following measured: depressive symptoms, perceived stress and positive affect.

Depressive symptoms. This construct was assessed using the 10-item version of the *Centers for Epidemiological Studies Depression Scale* (*CES-D*) (Andresen, Malmgren, Carter & Patrick, 1994). The *CES-D* is a widely used screening tool for depression in epidemiologic studies; however, it is not a valid diagnostic tool for clinical depression. Items ask respondents to report how much time over the past week they experienced a variety of depressive symptoms (e.g. “felt depressed”, “felt like everything I did was an effort”, “felt like my sleep was restless). Items are scored on a 4-point Likert-type scale from “rarely or none of the time; less than 1 day” to “all of the time; 5 to 7 days). A total score (range; 0 – 30) can be obtained by summing scores on all items, with higher scores corresponding with greater severity of depression symptoms. The range of the measure in this sample was 0 – 30 (M = 9.6, SD = 5.77). A recent large study found

that a score of 13 or greater is the optimal cut-off score for depressive symptoms that warrant further evaluation for clinical depression (Cheng & Chan, 2005). The measure has good internal consistency (α = .84) and predictive validity when compared to the full 20-item version (kappa = .97, $p < .001$) (Andresen et al. 1994). Comparable internal consistency was reported in this sample (α = .86).

Perceived Stress. This domain was assessed using the 10-item version of the *Perceived Stress Scale (PSS)* (Cohen & Williamson, 1988). The *PSS* is the most commonly used instrument for measuring perceived stress. Items on this scale were designed to assess how unpredictable, uncontrollable, and overloaded participants felt that their lives have been over the past month. For all items, participants are asked to rate how often they thought or felt a certain way on a 5-point Likert-type scale with answer choices ranging from "never" to "very often". A total score (range; 0 – 40) was obtained by reverse scoring the four positively stated items (items 4, 5, 7, & 8) and then summing across all scale items, with higher scores corresponding to greater perceived stress. The range of the variable in this sample was 4 – 36 (M = 17.7, SD = 6.29). The 10-item version of the *PSS* has been reported to correlate strongly with the full 14-item version (Cohen & Williamson, 1988) and has good internal consistency (α = .89) (Roberti, Harrington & Storch, 2007). The internal consistency of the measure reported in this sample was fair (α = .82).

Positive Affect. This domain was assessed using the Positive Affect subscale of the *Positive and Negative Affect Scale (PANAS)* (Watson, Clark & Tellegen, 1988). The *PANAS* is one of the most widely used measures of positive affect. The positive affect scale of the *PANAS* contains 10 items that assess how often "in general, that is, on average" participants feel different types of positive emotions (e.g., interested, proud, enthusiastic, strong). Each item is scored on a

5-point scale from “slightly or not at all” to “very much”. The *PANAS* has high test-retest reliability when using the “in general, that is, on average” instructions and can be treated as a trait-like measure of positive affect (Watson, Clark & Tellegen, 1988). A total score (range; 0 – 40) can be obtained by summing scores on all items, with a higher score corresponding with greater frequency of positive affect. The range of the variable in this sample was 0 – 40 (*M* = 23.8, *SD* = 8.21). The authors report that the positive affect scale of the *PANAS* has good convergent validity with other measures of positive mood and good internal consistency (α = .88). Comparable internal consistency was reported in this sample (α = .91).

Data Analysis Plan

Pilot Study Data Analysis

Preparation of data for analysis. Data will be analyzed in *SPSS version 20,* a statistical computing software package for the social sciences, or *EQS version 6.1,* a statistics package that was designed to conduct multivariate statistical analyses, including path analysis, structural equation modeling (SEM), and confirmatory factor analysis (CFA). Descriptive statistics will be computed on all data in order to better characterize the sample. The data will then be assessed for violations of both univariate and multivariate normality. Finally, the data will be evaluated for multivariate outliers and missingness. Univariate normality will be tested in *SPSS* using Shapiro-Wilk tests. A significant Shapiro-Wilk test is indicative of significant deviations from normality (Shapiro & Wilk, 1965). Multivariate normality will be tested in *EQS* using Mardia's (1970) normalized coefficient. According to convention, a Mardia's normalized coefficient greater than 3.3 is indicative of a significant departure from multivariate normality (Ullman, 2006). Mahalanobis Distances will be calculated to screen for multivariate outliers. Cases with Mahalanobis Distances that exceed the critical Chi-square value at $p = .001$ (df = number of predictors) level will be reviewed and deleted, if appropriate. Finally, the pattern of missingness will be evaluated using *SPSS* Missing Value Analysis. A t-test matrix will be computed in order to determine whether data is missing at random (MAR) or missing completely at random (MCAR). If only a few t-tests are significant ($p = .001$), then data will be assumed to be MAR; however, if no t-tests are significant and Little's MCAR Test is non-significant ($p > .05$), then data will be inferred to be MCAR (Tabachnick & Fidell, 2007). If data are MAR or MCAR, missing values will be imputed using the Expectation Maximization option in *EQS*.

Testing for Hypothesis 1 (Christian R/S has multiple empirically distinct components). An exploratory factor analysis (EFA) will be conducted on the piloted *MCRSI* items. The EFA will be conducted using *SPSS.* If the data are normal, a maximum likelihood extraction method will be utilized. However, if the data deviate significantly from normality, a principal axis factor extraction method will be utilized, because this extraction method is robust to non-normality (Costello & Osborne, 2005). A direct oblimin rotation will be used, as the emergent factors are expected to be non-orthogonal.

The results of the EFA will be analyzed to determine the quantity and quality of the factors in the *MCRSI* and to determine items that can be dropped from the inventory without adversely affecting psychometric properties. In order to determine the number of viable factors in the *MCRSI*, eigenvalues will be calculated. Only factors with eigenvalues above 1 will be considered viable. In addition, a Scree plot will be plotted and only those factors to the left of the "elbow" will be considered viable. After empirically viable factors have been identified, factor loadings will be examined within the pattern matrix in order to define the factors conceptually. Next, items with both low communalities (<.05) and moderately low factor loadings (<.03) will be removed from the *MCRSI* in order to increase the efficiency of measurement in the main study. Internal consistency of each refined subscale that emerges from the EFA will be estimated using Cronbach's alpha. In addition, the refined *MCRSI* will be tested for convergent validity (i.e., comparing scores to global measures of R/S), predictive validity (i.e., testing whether *MCRSI* predicts depression, an indicator of psychological adjustment that R/S is known to predict in the literature (Smith, McCullough & Poll, 2003)), and criterion validity (i.e., testing whether *MCRSI* scores are predictive of indicators that are known to be indicative of a religiously active lifestyle). The refined *MCRSI* will be included in the main

study protocol and the emergent subscale scores will be operationalized as measured indicators of Overall Christian R/S, a latent factor in the main study.

Main Study Data Analysis

Preparation of Data for Analysis. Descriptive statistics will be calculated on all variables in order to better characterize the data. A correlation matrix will be calculated in order to characterize bivariate relationships among variables. Next, the data will be assessed for violations of univariate and multivariate normality, screened for multivariate outliers, and evaluated for patterns of missingness. Procedures for addressing these concerns will be similar to those used in the pilot study.

Analyzing the Relationship between Christian R/S and Psychological Adjustment. All remaining hypotheses will be tested using *EQS.* A series of models will be specified based upon the hypotheses and the results of the EFA conducted in the pilot study.

First a small measurement model will be specified. The primary purpose of testing this model will be to determine whether the measured indicators load satisfactorily on the proposed latent factors. In other words, this model will help to determine whether the constructs being studied are better operationalized as latent factors or observed variables. Model fit will be evaluated using the following generally accepted criteria (Hu & Bentler, 1999; Browne & Cudeck, 1993): 1) a root mean square error of approximation (*RMSEA*) value less than or equal to .10 (ideally < .06), 2) a comparative fit index (*CFI*) value greater than or equal to .95, 3) standardized root mean residual (*SRMR*) value less than .08, 4) low residuals, and 5) residuals centered around a value of 0. In addition, the Chi-square will also be reported, but since this statistic tends to be conservative in large samples (Bentler, 1995), it will not be used to make determinations regarding model fit. If model fit is observed to be good in this model, then the

constructs will continue to be operationalized as latent variables and SEM will be used to test remaining hypotheses. If the model fit is not good, attempts will be made to modify the model in order to improve model fit. Lagrange Multiplier (LM) Tests will be used to determine whether adding a path to the model will improve model fit. Only proposed paths with significant Chi-squares ($p < .01$) will be considered for inclusion. A more conservative probability will be used for model modification, because this process is exploratory in nature. If good model fit is not established using LM tests, Wald Tests will then be performed to identify paths that can be dropped from the model. Parameters will only be dropped if the Chi-square associated with the Wald test is insignificant ($p > .05$). The model will only be modified in ways that are theoretically valid.

Once a good fitting basic model has been established, the model will be expanded to include all of the proposed mediators and covariates. This expanded (mediated) model will be used to test Hypotheses #2-6 (direct effects and mediation). The moderation hypotheses (Hypotheses 7 & 8) will be tested using another model.

Testing for Hypothesis #2 (the direct effect hypothesis). This hypothesis will be confirmed if the total direct effect of Overall Christian R/S predicting psychological adjustment is significant even after controlling for age and years of education. This will be evaluated by examining the regression coefficient linking overall Christian R/S to psychological adjustment in the final expanded model.

Testing for Hypotheses #3-6 (the mediation hypotheses). These hypotheses will be confirmed if the regression coefficient obtained from the final expanded (mediated) model linking overall Christian R/S to the proposed mediator is significant, the regression coefficient linking the proposed mediator to psychological adjustment is also significant, and tests of

indirect effects of overall Christian R/S through the proposed mediator on psychological adjustment are significant. Tests of indirect effects (Sobel, 1988) will be conducted using *EQS* in models containing just one mediator so that indirect effects are readily interpretable.

Testing for Hypotheses #7-8 (the moderation hypotheses). In order to test these hypotheses, a new model will be specified that contains just the direct effect and the proposed moderators. This smaller model is being used, because only moderation of the direct effect is being hypothesized. Therefore, a test of moderation within the context of the larger mediated model would be more than is needed to test the hypothesis and would complicate interpretation of results. An interaction term (overall Christian R/S x moderator) will be created between overall Christian R/S and each moderator by taking the product of the moderator total score and the latent factor score saved from the original measurement model. In the moderation model, both the interaction term and the moderator will predict psychological adjustment. Moderation will be confirmed if the regression coefficient for the path from the interaction term to psychological adjustment is significant.

Exploratory Analyses

Analysis of between group differences (Gender, Ethnicity). These exploratory questions will be tested using a multiple group analysis. The model used in the multiple group analysis will be a refined version of the expanded (mediated) model used for a priori hypothesis testing. Variables that did not significantly predict the psychological adjustment will be removed. A multiple group model will be tested in accordance with generally accepted methodology (Ullman, 2007). First, good model fit will be established for both groups using the aforementioned criteria for evaluating model fit (Hu & Bentler, 1999; Browne & Cudeck, 1993). Next, a baseline (i.e., unconstrained) model will be estimated. In this model, all parameters are

free to vary between groups. The baseline model's Chi-square statistics will be reported and used for comparison purposes. Then, a multiple group model will be estimated in which all factor loadings (i.e., regression coefficients) are constrained to be equal. A Chi-square difference test will be calculated, using Satorra-Bentler Chi-Squares and scaling correction if the data are multivariate non-normal. If the test is non-significant ($p > .01$), it indicates that the difference test failed to reject the null hypothesis (i.e., that the 2 groups are the same).

Analyzing whether different dimensions of R/S differentially predict psychological adjustment. A final model will be specified to test if different components of overall Christian R/S have different associations with mediators of psychological adjustment and psychological adjustment itself. Each component of R/S will be operationalized as an observed variable by using the total subscale score. Model fit will be evaluated and modified (if appropriate) using the procedures described above.

Results

Pilot Study Results

Sample

A sample of 301 adults (age ≥ 18) who self-identified as Christians were recruited online via Amazon MechTurk. The sample was predominantly female (69.1%) and Caucasian (80.1%). Participants were recruited from every region in the country (20.6% from the Northeast, 28.6% from the South, 28.6% from the Midwest, and 22.3 from the West). The sample was diverse in terms of age (M = 35.1, SD = 12.43), moderately educated (M = 15.0, SD = 3.72; years of education), and lower middle class (median income = $32,236). In addition, a fairly large portion of the sample (26.2%) were above the cut-off for self-reported depression symptoms (i.e., a CES-D score higher ≥ 13). Although this cut-off is not diagnostic of clinical depression, participants who score at or above the cut-off are reporting symptoms of depression that warrant further attention (Cheng & Chan, 2005). Therefore, overall, this sample appears to be more depressed than the general United States population as the prevalence of depression in this population is approximately 10% (Centers for Disease Control, 2010).

The sample was diverse in terms of Christian denominations: 47.5 percent of the sample was Protestant, 29.6% were Catholic, 3% were Eastern Orthodox, 2.7% were Mormon, and 17.3% reported other. Specific data on which groups were represented in the "other" category were not obtained because of a clerical error in the implementation of the study protocol online. About half of the sample (53.8%) reported membership in a church, the average participant contributed 1.6% of their annual income to their church or local congregation, a large majority reported belief in God (94.0%), and only 20.7% claimed to be a Christian

evangelical/fundamentalist. For more descriptive information on the pilot sample, please see *Tables 3* and *4*.

Preparation of the Data for Analysis

The pilot data were tested for violations of normality. Data were found to be both multivariate and univariate non-normal. When all variables of interest were entered into a model in *EQS*, the Mardia's (1970) normalized coefficient was 39.9, indicating violation of multivariate normality. Moreover, all Shapiro-Wilk tests were significant, suggesting that all variables were univariate non-normal. Upon analysis of skew statistics and plots, all *MCRSI* variables were observed to have significant negative skew, suggesting ceiling effects (see *Table 2* for skew and kurtosis statistics of *MCRSI* items)

Data were screened for outliers. No cases were identified with significant ($p < .001$) Mahalanobis Distances. Therefore, no cases were multivariate outliers and all cases were retained for further analyses.

The pattern of missingness was assessed. Forty cases (13% of the sample) had a missing value for one or more variables. However, there were only 51 missing data points across the entire sample. In addition, no variable had missing values for more than 5% of cases. It was determined that since the number of missing data points was minimal, yet spread across the sample, listwise deletion of cases would be an unacceptable method for handling the missing data. Missingness was evaluated in *SPSS* using a t-test matrix of variables. Only one t-test in the matrix was significant and Little's MCAR test was non-significant ($p > .05$); therefore, the data were inferred to be missing at random (MAR). Missing data were imputed using expectation maximization imputation in *EQS*.

Exploratory Factor Analysis (Test of *Hypothesis #1*)

An EFA was conducted in *SPSS* on the 31 *MCRSI* items using the pilot sample data (see *Table 2* for list of items). The EFA used a principal axis factoring extraction method and direct oblimin rotation. As hypothesized, a multiple factor solution emerged from the EFA. The EFA revealed 4 factors with eigenvalues greater than or equal to 1 accounting for 54.6, 6.9, 2.9, and 2.5 (total 66.9% of the variance) percent of the variance, respectively. However, the Scree plot clearly indicated that there were only 2 empirically viable factors.

Since the results of the first EFA suggested that a 2-factor solution fits the data best, another EFA was conducted, with results constrained to 2 factors. The pattern matrix was examined in order to define these factors. The two factors that emerged explained a total of 61.1% of the variance. Factor 1 was labeled *Spiritual Attitudes/Beliefs* because of the content of the 24 items (items 1 – 24) that principally loaded on this factor. This factor accounted for 54.4% of the variance. Item 24 (frequency of prayer) also loaded on this factor. Although this is a religious behavior, it is much more clearly connected to one's spiritual beliefs than other religious behaviors because it involves attempted communication with an entity that is known only through spiritual/religious belief (e.g., God). Therefore, it makes sense theoretically that this item would principally load on the *Spiritual Attitudes/Beliefs* factor.

Factor 2 accounted for 6.7% of the variance and was labeled *Religious Behaviors* because of the content of the 7 items (Items, 25-31) that loaded on this factor. All of the religious behaviors loaded on this factor, except for frequency of prayer. *Religious Behaviors* and *Spiritual Attitudes/Beliefs* were moderately correlated with each other ($r = .59$, $p < .001$).

The results of the EFA supported Hypothesis 1, as the EFA indicated that Christian R/S has multiple empirically distinct components. This analysis revealed that overall Christian R/S consists of an attitudes/beliefs component and a behaviors component.

Modification of the MCRSI

Items that had factor loadings lower than .5 and communalities lower than .3 were removed from the *MCRSI*. Items 27 and 30 were removed from the instrument because of low communalities. All other items were retained for use in the main study.

Psychometric Properties of the MCRSI

The *MCRSI* exhibited good psychometric properties in the pilot sample. The total range of the *Spiritual Attitudes/Beliefs* subscale score is 0 – 130 and the range observed in the sample was 1 – 120. The average score on the inventory was 81.6 (*SD* = 30.21). The *Spiritual Attitudes/Beliefs* total score had a significant negative skew (skewness statistic = -2.406, SE = .140), suggesting that there were ceiling effects in this sample. The total subscale score exhibited excellent internal consistency (α = .97). Also, the score evidenced good convergent validity as it correlated highly with the self-reported degree to which participants viewed themselves as religious (r = .69, p < .001) and spiritual (r = .60, p < .001). This scale also showed good criterion validity as it was positively associated with behaviors indicative of a religiously active and involved lifestyle such as percentage of annual income tithed (r = .38, p < .001) and church membership (r = .55, p < .001). Finally, the *Spiritual Attitudes/Beliefs* subscale score evidenced good predictive validity as it was inversely associated with depressive symptoms (r = -.23, p < .001), an indicator of psychological adjustment that R/S is known to be associated with in the literature (Smith, McCullough & Poll, 2003).

The total range of the *Religious Behaviors* subscale score is 0 – 25 and the range observed in this sample was 0 – 25. The average score was 7.3 (*SD* = 6.07) and the subscale score evidenced good internal consistency in this sample (α = .90). The *Religious Behaviors* scale score had a significant positive skew (skewness statistic = .528, SE = .143), suggesting that

there were floor effects in this sample. The subscale score was positively associated with degree of self-reported global religiosity ($r = .62$, $p < .001$), global self-reported spirituality ($r = .60$, $p < .001$), church membership ($r = .55$, $p < .001$), percentage tithed, ($r = .38$ $p < .001$), and inversely associated with depressive symptoms ($r = -.23$, $p < .001$).

Main Study Results

Sample

A U.S resident sample of 955 adults (age ≥ 18) was recruited online via Amazon MechTurk. Of those participants, 892 completed the survey. The overall sample had slightly more females (56.5%) than males, but was closer to even than in the pilot study. The ethnic/racial make-up of the sample was 69.7% Caucasian, 18.3% African-American, 2.6% Latino, 7.1% Asian, 1.1% Native-American and 1.1% Other. Participants were recruited from every region of the country (25% from the Northeast, 30.6% from the South, 21.6% from the Midwest, 5.8% from the Rocky Mountain West, and 16.9% from the West Coast). The sample was relatively young (M = 31.7, SD = 12.12; age), moderately educated (M = 14.4, SD = 4.03; years of education), and lower middle class (median annual income = $27,000). About half of the sample reported that they were married (53.9%). In addition, again a large portion of the sample (32.5%) was above the cut-off for self-reported depression symptoms (i.e., a CES-D score of ≥ 13). Therefore, overall, this sample appears to be more depressed than the general United States population as the prevalence of depression in the population is approximately 10% (Centers for Disease Control, 2010).

All major religious traditions were represented in the overall sample, but the sample was primarily Christian (56.6%), Agnostic (16.4%), or Atheist (10.9%). The sample was diverse in terms of Christian denominations: 35.6 percent of the sample was Protestant, 34.7% Catholic, 4% Orthodox, 1.8% Mormon, 2.8% Jehovah's Witnesses, 0.8% Seventh Day Adventists, and 10.3% reported other. Most of the participants who reported "other" tended to state that they were "non-denominational". When compared to the population of the United States, the sample was younger, more likely to be female, more educated, and less likely to be Christian (United

States Census, 2010). For more descriptive statistics on the sample recruited for the main study, see *Tables 5* and *6*.

By comparison, the Christian portion of the sample (N = 505) was 58.5% females. The ethnic/racial make-up was 72.5% Caucasian, 20.8% African-American, 2.2% Latino, 2.8% Asian, 1.4% Native-American, and 0.4% Other. Participants were recruited from every region of the country (22.0% from the Northeast, 34.7% from the South, 22.6% from the Midwest, 5.9% from the Rocky Mountain West, and 14.9% from the West Coast). About half of the sample reported that they were married (51.0%), and 27.8% of the Christian sample were above the cut-off for self-reported depression symptoms. About half of the sample (47.2%) reported membership in a church, the average participant contributed 2.6% of their annual income to their church or local congregation, the majority reported belief in God (96.0%), and only 22.1% reported being a Christian evangelical/fundamentalist. Finally, 8.7% reported having a leadership position (e.g., clergy, Sunday school teacher, etc.) in the church. See *Table 7* for a comparison between Christian and non-Christian participants on selected demographic variables.

Psychometrics Properties of *MCRSI* in the Main Study Sample

The *MCRSI* exhibited good psychometric properties in the main sample. The total possible range of the *Spiritual Attitudes/Beliefs* subscale score is 0 – 130 and the range observed in this sample was 6 – 120. The average score was 83.6 (SD = 25.57) and the subscale score evidenced good internal consistency in this sample (α = .96). The *Spiritual Attitudes/Beliefs* scale score had a significant negative skew (skewness statistic = -.740, SE = .128), suggesting that there were ceiling effects in this sample. The subscale score was positively associated with degree of self-reported global religiosity (r = .62, p < .001), global self-reported spirituality (r = .61, p < .001), church membership (r = .43, p < .001), official leadership position in the church (r

= .17, $p < .001$), and percentage tithed, ($r = .15$ $p = .006$), suggesting that this measure is associated with indicators of a spiritually active and involved lifestyle.

The total possible range of the *Religious Behaviors* subscale score is 0 – 25 and the range observed in this sample was 0 – 25. The average score was 6.3 (*SD* = 5.57) and the subscale score evidenced good internal consistency in this sample (α = .88). The *Religious Behaviors* scale score had a significant positive skew (skewness statistic = .938, SE = .128), suggesting that there were floor effects in this sample. The subscale score was positively associated with degree of self-reported global religiosity ($r = .51$, $p < .001$), global self-reported spirituality ($r = .42$, $p < .001$), church membership ($r = .52$, $p < .001$), official leadership position in the church ($r = .44$, $p < .001$), and percentage tithed, ($r = .23$ $p < .001$), suggesting that this measure is associated with indicators of a spiritually active and involved lifestyle.

The Religious Behaviors subscale was moderately correlated with the Spiritual Attitudes/Beliefs subscale ($r = .51$, $p < .001$). These subscale scores were entered as measured indicators of the latent variable (overall Christian R/S) in subsequent analyses.

Preparation of the Data for Analysis

The main study data were assessed for violations of multivariate normality. When all variables of interest were included in a model in *EQS*, Mardia's (1970) normalized coefficient was 4.47, suggesting a violation of multivariate normality. Depending on the variables included in specified models, the Mardia's normalized coefficient ranged from 1.1 to 26.6. Model estimation methods robust to normality violations were utilized for model evaluation purposes when Mardia's normalized coefficient was 3.3 or greater. Maximum likelihood estimators were used for all other models.

SPSS Regression was used to screen for multivariate outliers. Two cases were identified with significant Mahalanobis Distances ($p < .001$), suggesting that they were multivariate outliers. These cases were both 18-year-old African-Americans who reported very high levels of depression and very high levels of positive affect. These cases were removed from further analyses as they were judged to be multivariate outliers. Since these cases were removed, the findings reported here might not generalize to young African-Americans who concurrently report both high amounts of positive affect and high amounts of depression.

The pattern of missingness was assessed. 130 cases (25% of the sample) had a missing value for one or more variables. However, there were only 167 missing data points across the entire sample. In addition, no variable had missing values for more than 5% of cases. It was determined that since the number of missing data points was minimal, yet spread across the sample, listwise deletion of cases would be an unacceptable method for handling the missing data. Missingness was evaluated in *SPSS* using a t-test matrix of all variables. Only two t-tests in the matrix were significant and the Little's MCAR test was non-significant ($p > .05$); therefore, the data were inferred to be missing at random (MAR). Missing data were imputed using expectation maximization imputation in *EQS*.

Finally, a correlation matrix was computed in order to characterize bivariate relationships among variables (see *Table 8*). In addition, all variables that were to be included in interaction terms for moderation were centered.

SEM Model Specification, Estimation, Evaluation, and Modification

A basic measurement model (see *Figure 2*) was specified and estimated in *EQS* in order to determine whether the measured indicators load satisfactorily on their proposed latent factors. The subscale scores of the 2 components of R/S generated in the pilot

study EFA (religious behaviors and spiritual attitudes/beliefs) were used as measured indicators of overall Christian R/S in this model. The model was multivariate normal (Mardia's normalized coefficient = 1.05) and was estimated using maximum likelihood estimation. The model fit the data well, χ^2 (4, N = 503) = 21.48, $p < .001$, *CFI* = .98, *RMSEA* = .09, *SRMR* = .033. Based on this model, it was determined that both overall Christian R/S and psychological adjustment were best conceptualized as latent factors as originally hypothesized.

After confirming the hypothesized factor structure of the latent variables, an expanded (mediated) model was specified that included all of the proposed mediators and covariates (see *Figure 3*). The variables included in this model were multivariate non-normal (Mardia's normalized coefficient = 3.97) and model estimation robust to non-normality was used. The initial model evidenced marginal fit, Satorra-Bentler χ^2 (34, N = 503) = 183.98, $p < .001$, *CFI* = .94, *RMSEA* = .09. Given the marginal fit of the model, LM tests ($p < .001$) were performed in order to determine if paths could be added to improve overall model fit. Based upon the LM Tests and theoretical meaningfulness, one residual covariance was estimated (residual covariance between religious social support and religious behaviors). With the addition of the path, model fit was good, Satorra-Bentler χ^2 (33, N = 503) = 103.70, $p < .001$, *CFI* = .97, *RMSEA* = .07. Since model modification was performed, a correlation between coefficients in the final model and the original model was performed, r = .97, $p < .001$. The high correlation suggests that although the model was modified, the parameter estimates are still highly related to each other. Please see *Figure 4* for the final model with standardized coefficients. Since this model evidenced good model fit, it shows good support for the overall theory. In

addition, the standardized coefficients and effects generated in this model were used to test *Hypotheses 2 – 6,* specifically.

Next, a moderation model was specified and estimated in order to test *Hypotheses 7* and *8* (See *Figure 5*). A special model was specified for moderation that did not include mediators, because no a priori hypotheses were made concerning moderated mediation; rather, only the moderation of the main effect of overall Christian R/S on psychological adjustment was hypothesized. Interaction terms were created following procedures indicated in the data analysis plan. The variables included in this model were multivariate non-normal (Mardia's normalized coefficient = 26.61). Therefore, model estimators robust to non-normality were used. Model fit was marginal, Satorra-Bentler χ^2 (24, N = 503) = 84.22, $p < .001$, *CFI* = .93, *RMSEA* = .07. Attempts were made to modify the model to improve model fit by conducting LM Tests ($p < .001$); however, LM Tests suggested no theoretically viable paths. Since model fit was sub-optimal, but still within acceptable limits (Browne & Cudeck, 1993), standardized coefficients and effects were evaluated in order to test *Hypotheses 7* and *8*.

Tests of *Hypotheses 2* through *6* (Direct Effect and Mediation)

First the total effect of overall Christian R/S on psychological adjustment was examined within the context of the expanded (mediated) model (see *Figure 4* for standardized coefficients and final model solution). The total effect of overall Christian R/S on psychological adjustment was significant, unstandardized coefficient = .38, standardized coefficient = .24, $p < .05$. The direct effect of overall Christian R/S on psychological adjustment was not significant in this model, unstandardized coefficient = .27, $p > .05$. The indirect effect (Sobel, 1988) of overall Christian R/S on psychological

adjustment was significant, even after controlling for age and years of education, unstandardized coefficient = .65, standardized coefficient = .41, $p < .05$. Overall Christian R/S accounted for 6.6% of the variance in psychological adjustment ($R^2 = .066$) when tested in a model without mediators. These results support *Hypothesis 2*. Overall Christian R/S positively predicts psychological adjustment even after controlling for age and years of education; however, this association is fully mediated by the proposed mediators, as evidenced by the significant indirect effect and non-significant direct effect in the mediated model.

Next, the mediating hypotheses (*Hypotheses 3 – 6*) were tested. Overall Christian R/S significantly predicted all proposed mediators, positive relations with others (unstandardized coefficient = .46, $p < .05$), purpose in life (unstandardized coefficient = .64, $p < .05$), religious coping (unstandardized coefficient = .68, $p < .05$), and religious social support (unstandardized coefficient = .92, $p < .05$); however, only positive relations with others, purpose in life, and religious social support significantly predicted psychological adjustment in this model. Religious coping failed to predict psychological adjustment (unstandardized coefficient = .22, $p > .05$) suggesting that it does not significantly mediate the relationship between overall Christian R/S and psychological adjustment. In addition, Sobel tests were performed in EQS to estimate indirect effects of R/S through each proposed mediator. Special models were specified and estimated that contained only one mediator in order to improve interpretability of tests of mediation. The indirect effects of overall Christian R/S through positive relations with others (unstandardized coefficient = .34, standardized coefficient = .17, $p < .05$) and purpose in life (unstandardized coefficient = 1.24, standardized coefficient = .23, $p < .05$) were

significant. The indirect effects of overall Christian R/S on psychological adjustment through religious social support (unstandardized coefficient = .16, standardized coefficient = .03, $p > .05$) and religious coping (unstandardized coefficient = -1.31, standardized coefficient = -.24, $p > .05$) were not significant. Finally, the proposed mediators and overall Christian R/S explained 59 percent of the variance of psychological adjustment ($R^2 = .593$). These results lend partial support to the mediating hypotheses. *Hypotheses 3* and *4* were supported. The relationship between overall Christian R/S and psychological adjustment is mediated by purpose in life and positive relations with others. Hypotheses 5 and 6 were not supported. Religious coping and religious social support did not significantly mediate the relationship between overall Christian R/S and psychological adjustment.

Tests of *Hypotheses 7* and *8* (Moderating Effects)

Moderation of the relationship between overall Christian R/S and psychological adjustment by chronic stress and peer group salience of R/S was tested within the context of the moderating model (see *Figure 5*). The effect of the interaction term (overall Christian R/S x peer group salience of R/S) was insignificant, unstandardized coefficient = .02, $p > .05$. The effect of the interaction term (overall Christian R/S x chronic stress) was also insignificant, unstandardized coefficient = .01, $p > .05$. These results do not support Hypotheses 7 or 8. Both peer group salience of R/S and chronic stress fail to significantly moderate the relationship between overall Christian R/S and psychological adjustment in this sample.

Exploratory Analyses

Moderation by gender and ethnicity. In order to explore whether gender or ethnicity (Caucasians compared to African-Americans) moderates the relationship between overall Christian R/S and psychological adjustment, a special model was created for multiple group analysis (see *Figure 6*). This model did not contain proposed covariates or moderators as these variables were not found to have significant relationships with psychological adjustment during a priori hypothesis testing and their inclusion would unnecessarily reduce power to detect effects. The specified model had good model fit within the overall sample, χ^2 (20, N = 503) = 71.18, $p < .000$, *CFI* = .98, *RMSEA* = .07, *SRMR* = .04. Maximum likelihood Chi-square was used because variables included in the model were multivariate normal (Mardia's normalized coefficient = 2.94). The coefficients in this model correlated highly with the coefficients in the final mediated model (see *Figure 4*) (r = .99, $p < .001$) indicating that the parameter estimates in this model are essentially the same as those in the final mediated model. The model fit was good in samples containing only females (n = 295), males (n = 208), Caucasians (n = 366) and African-Americans. (n = 105). Therefore, this model was used in subsequent multiple group analyses to test moderation by gender and ethnicity.

In order to test moderation by gender, first a baseline multiple group model was estimated in which all parameters were unconstrained across gender. The baseline model had good model fit, χ^2 (40, N = 503) = 113. 05, $p < .01$, *CFI* = .97, *RMSEA* = .08, *SRMR* = .06. Next, a model was estimated in which factor loadings were constrained to equality across gender, χ^2 (45, N = 503) = 115.47, $p < .01$. The difference between this model and the baseline model was not significant, χ^2_{diff} test (5, N = 503) = 2.42, $p > .01$, indicating

that the factor loadings across gender are statistically similar. Next, a model was estimated in which covariances and variances were constrained to equality across gender, χ^2 (58, N = 503) = 142.54, $p < .01$. The difference between this model and the baseline model was not significant, χ^2_{diff} test (18, N = 503) = 29.53, $p > .01$, indicating the covariances and variances across gender are statistically similar. Finally, a model was estimated in which regression coefficients were constrained to equality across gender, χ^2 (63, N = 503) = 148.42, $p < .01$. The difference between this model and the baseline model was not significant, χ^2_{diff} test (23, N = 503) = 35.38, $p > .01$, indicating the regression coefficients across genders are statistically similar. These results suggest that gender does not significantly moderate the relationship between overall Christian R/S and psychological adjustment.

In order to test moderation by ethnicity (Caucasians compared to African-Americans), first a baseline multiple group model was estimated in which all parameters were unconstrained across ethnic groups. The baseline model had good model fit, χ^2 (40, N = 471) = 97. 39, $p < .01$, *CFI* = .98, *RMSEA* = .08, *SRMR* = .05. Next, a model was estimated in which factor loadings were constrained to equality across ethnic group, χ^2 (45, N = 471) = 103.44, $p < .01$. The difference between this model and the baseline model was not significant, χ^2_{diff} test (5, N = 471) 6.05, $p > .01$, indicating that the factor loadings across both ethnic groups are statistically similar. Next, a model was estimated in which covariances and variances were constrained to equality across ethnic group, χ^2 (58, N = 471) = 130.59, $p < .01$. The difference between this model and the baseline model was not significant, χ^2_{diff} test (18, N = 471) = 33.2, $p > .01$, indicating the covariances and variances across both ethnic groups are statistically similar. Finally, a

model was estimated in which regressions were constrained to equality across ethnic group, χ^2 (63, N = 471) = 133.51, $p < .01$. The difference between this model and the baseline model was not significant, χ^2_{diff} test (23, N = 471) = 36.12, $p > .01$, indicating that the regression coefficients across ethnic group are statistically similar. These results suggest that ethnicity (Caucasian compared to African-American) does not significantly moderate the relationship between overall Christian R/S and psychological adjustment.

Exploration of different effects of different components of R/S on psychological adjustment. An exploratory SEM model was also specified and estimated to test whether different components of R/S had different relationships with psychological adjustment (See *Figure 7*). Mardia's normalized coefficient = 2.94, suggesting that variables included in this model are multivariate normal. The original specified model had good model fit, χ^2 (17, N = 503) = 55.47, $p < .000$, *CFI* = .98, *RMSEA* = .07, *SRMR* = .03. LM Tests were used to improve model fit ($p < .001$) and then Wald Tests were used to make the model more parsimonious ($p > .05$). LM Tests indicated that adding a path predicting positive affect directly from religious coping would improve model fit. This path was added. Next, Wald Tests suggested removing the following paths sequentially, the path from religious coping to psychological adjustment, the path from religious behaviors to positive relations with others, the path from religious behaviors to psychological adjustment, and the path from religious behaviors to purpose in life. The final model (see *Figure 8* for standardized coefficients and modifications) had very good model fit, χ^2 (20, N = 503) = 38.44, p = .007, *CFI* = .99, *RMSEA* = .04, *SRMR* = .02. In addition, this model correlated highly with the original model (r = .99, $p < .001$), indicating that the parameter estimates for both models are essentially the same. The final model was used

to explore whether different relationships exist between different dimensions of R/S and psychological adjustment.

Spiritual attitudes/beliefs significantly predicted all proposed mediators, positive relations with others (unstandardized coefficient = .06, $p < .05$), purpose in life (unstandardized coefficient = .08, $p < .05$), religious social support (unstandardized coefficient = .04, $p < .05$), and religious coping (unstandardized coefficient = .06, $p < .07$). In addition, spiritual attitudes/beliefs significantly predicted psychological adjustment, unstandardized coefficient = -.02, $p < .05$.

The omnibus indirect effect of spiritual attitudes/beliefs on psychological adjustment through the proposed mediators was significant, unstandardized coefficient = .06, standardized coefficient = .28, $p < .05$. The indirect effect of spiritual attitudes/beliefs on psychological adjustment through positive relations with others (unstandardized coefficient = .04, standardized coefficient = .18, $p < .05$) and purpose in life (unstandardized coefficient = .05, standardized coefficient = .23, $p < .05$) was significant. The indirect effect of spiritual attitudes/beliefs through religious coping (unstandardized coefficient = .01, standardized coefficient = .05, $p > .05$) and religious social support (unstandardized coefficient = .004, standardized coefficient = .02, $p > .05$) was not significant. This was similar to the pattern of indirect effects found for overall Christian R/S on psychological adjustment.

In contrast, religious behaviors, after controlling for the effects of spiritual attitudes/beliefs, only significantly predicted 2 of the proposed mediators, religious social support, unstandardized coefficient = .54, $p < .05$, and religious coping, unstandardized coefficient = .09, $p < .05$. Religious behavior failed to significantly predict purpose in

life, positive relations with others, or directly predict psychological adjustment after controlling for the effects of spiritual attitudes/beliefs (these paths were removed from the model because of significant Wald Tests). The indirect effect of religious behaviors on psychological adjustment through religious social support was significant, unstandardized coefficient = .04, standardized coefficient = .05, $p < .05$. Religious behaviors also had a significant indirect effect on positive affect through religious coping, unstandardized coefficient = .09, standardized coefficient, .06, $p < .05$.

Discussion

The purpose of this study was to examine the dimensional nature of Christian R/S and its relationship with psychological adjustment. Specifically, this study had 4 goals: 1) to determine the dimensional structure of Christian R/S, 2) to determine whether overall Christian R/S was associated with positive psychological adjustment, 3) to test specific variables that mediate and moderate this relationship, and 4) to determine whether different dimensions of Christian R/S have different associations with positive psychological adjustment.

Overall Christian R/S was measured using the Multi-dimensional Christian Religiosity/Spirituality Inventory (*MCRSI*) (Schettino & Dunkel-Schetter, Unpublished). This inventory is a 31-item measure that was designed specifically to assess multiple conceptually distinct dimensions of R/S within a Christian religious context (see *Table 1* and *Table 2* for a list of items and conceptual dimensions). Given that this measure was designed for use in this study and is unpublished, its psychometric properties were tested. The *MCRSI* had excellent psychometric properties in two studies, a pilot study of 301 Christian adults and in a relatively large sample (N = 503) of Christian internet-users. Two empirically distinct and easily definable factors were derived from the inventory (Spiritual Attitudes/Beliefs and Religious Behaviors). Both factors had very good internal consistency, spiritual attitudes/beliefs Cronbach's α = .96 and religious behaviors Cronbach's α = .88. The two factors were moderately correlated with each other (r = .40). Both subscales exhibited good criterion validity as they were significantly associated with behaviors that were indicative of a religiously involved lifestyle (e.g., tithing, church membership, holding leadership positions in the church) and good

convergent validity with global one-item measures of self-reported religiosity and spirituality.

Based upon a review of the literature linking R/S to psychological adjustment, 8 hypotheses were proposed and tested: Christian R/S will be a multi-dimensional construct with multiple (i.e., more than one) empirically distinct components (1); Overall Christian R/S will be significantly associated with positive psychological adjustment after controlling for potential confounds (2); The relationship between overall Christian R/S and psychological adjustment will be mediated by positive religious coping (3); religious social support (4); positive relations with others (5), and purpose in life (6); the relationship between overall Christian R/S and psychological adjustment will be moderated by peer group salience of R/S (7), and chronic stress (8). These hypotheses were analyzed using an exploratory factor analysis and a series of structural equation models (SEM). Additional analyses were conducted to explore whether the relationship between Christian R/S was moderated by gender or ethnicity. Finally, analyses were performed in order to explore whether there were different relationships between the different dimensions of Christian R/S and psychological adjustment.

Consistent with the initial hypothesis, the results of the analyses suggested that Christian R/S is a unified construct that has multiple empirically distinct components. Specifically, 2 empirically distinct, yet correlated, components (religious behaviors and spiritual attitudes/beliefs) emerged through an exploratory factor analysis.

As predicted, Christian R/S was significantly and positively associated with positive psychological adjustment (operationalized here as a latent variable indicated by lower levels of depression and perceived stress and higher levels of positive affect).

Christian R/S accounted for 6.6% of the variance in psychological adjustment. This association was significant even after controlling for age and years of education.

Support for the mediational hypotheses was mixed. As predicted, purpose in life and positive relations with others significantly mediated the relationship between Christian R/S and psychological adjustment, such that higher levels of Christian R/S were associated with greater perceived purpose in life and positive relations with others, and these factors were in turn associated with better psychological adjustment. These factors fully mediated the relationship between Christian R/S and psychological adjustment as the direct relationship was no longer significant after accounting for these factors in the model. Contrary to hypotheses, religious coping and religious social support failed to significantly mediate the relationship between Christian R/S and psychological adjustment.

The results failed to support the hypotheses regarding moderation of the direct relationship between Christian R/S and psychological adjustment. That is, chronic stress and peer group salience of R/S did not significantly moderate the direct relationship between Christian R/S and psychological adjustment.

Exploratory analyses were conducted to determine whether the relationship between Christian R/S and psychological adjustment was moderated by gender or ethnicity (African-Americans compared to Caucasians). The overall relationship between Christian R/S and psychological adjustment was not significantly moderated by gender or ethnicity. Therefore, the pattern of relationships observed among variables in the model was consistent across ethnic groups and gender, suggesting that the pattern of relationships linking R/S to psychological adjustment is robust. Nevertheless, these

analyses were exploratory in nature and should be subjected to confirmatory tests with a larger and more representative sample of the Christian population in the United States, before firm conclusions are drawn from these results.

Additional exploratory analyses were conducted in order to analyze whether religious behaviors and spiritual attitudes/beliefs have different associations with psychological adjustment. When religious behaviors and spiritual attitudes/beliefs were separated and included in the model as distinct predictors, spiritual attitudes/beliefs emerged as the significantly stronger predictor of positive psychological adjustment (indirect effect standardized coefficient = .28, $p < .05$). Its effect on psychological adjustment was mediated by positive relations with others and purpose in life, but not religious coping and religious social support. This pattern is similar to the pattern of relationships observed between overall Christian R/S and psychological adjustment. Unlike overall Christian R/S, however, the relationship between spiritual attitudes/beliefs and psychological adjustment was only partially mediated. Spiritual attitudes/beliefs were still directly associated with psychological adjustment after accounting for mediation. Contrary to theory, however, the direct association was inversely associated with psychological adjustment. That is, the direct path predicted poorer psychological adjustment. Perhaps this inverse association was observed, because after factoring out aspects of spiritual attitudes/beliefs that predict positive social relationships, positive forms of religious coping, and perceived purpose in life, the aspects of spiritual attitudes/beliefs that remain are those aspects that are negatively associated with psychological adjustment. Indeed, the literature shows that some types of spiritual beliefs (e.g., belief that one is being judged or abandoned by God) are negatively associated with

psychological well-being (Pargament, 1997, Hill & Pargament, 2003, Smith, McCullough & Poll, 2003).

After accounting for the effects of spiritual attitudes/beliefs, religious behavior was a comparatively weaker predictor of psychological adjustment (standardized indirect effect coefficient = .05, $p < .05$). Religious behavior was only significantly associated with psychological adjustment through religious social support. This makes theoretical sense, as an individual who engages in religious behaviors (e.g., attending worship services) is more likely to develop relationships with other religious individuals who could provide religious social support and this support could in turn be associated with improved psychological adjustment over and above that which would be expected from spiritual attitudes/beliefs alone. Religious behaviors also had a significant indirect effect on positive affect through religious coping (standardized coefficient = .06, $p < .05$). It is unknown why religious behaviors impacted positive affect through this pathway. Perhaps, individuals who engage in religious behaviors, even if they do not have associated spiritual beliefs can still derive benefit from using the behaviors to cope. For example, meditation, singing, attending a worship service and other religious activities could be used to cope even if one does not hold spiritual beliefs related to these behaviors. This type of religious, but not necessarily spiritual, coping could in turn be associated with higher levels of positive affect. This seems to suggest that religious behaviors can be salutary either with or without attendant spiritual beliefs. Notably, the hypotheses examining the relationship between different components of R/S and psychological adjustment were exploratory in nature. Therefore, these results must be

interpreted with caution and should be replicated using confirmatory analyses before firm conclusions are drawn.

In summary, this study found a significant positive relationship between overall Christian R/S and positive psychological adjustment. This relationship was fully mediated by perceived purpose in life and positive relations with others. The relationship was not moderated by higher chronic stress, higher peer group salience of R/S, ethnicity (Caucasian compared to African-American) or gender in this sample. Different relationships were observed between different dimensions of R/S and positive psychological adjustment, with spiritual attitudes/beliefs emerging as the stronger predictor of psychological adjustment.

The research findings are consistent with the literature in that it supported the significant positive association between R/S in total and positive psychological adjustment. The effect size observed here was also comparable to that observed in previous meta-analyses linking R/S to indicators of psychological adjustment (Smith, McCullough & Poll, 2003; Yonker, Schnabelrauch & DeHaan, 2012). Although the effects observed in this study were modest, as R/S accounted for less than 10% of the variance in psychological adjustment, the effects are significant when considering the multitude of psychological, social, and biological factors that can impact psychological adjustment. Finally, the results of this study highlighted the robust nature of this relationship as it was significant across gender and ethnic groups and remained significant after controlling for potential confounds.

The findings of this study supported the general consensus in the field that R/S is a construct that is consists of empirically distinct underlying dimensions (Hall, Meador &

Koenig, 2008; Hill & Pargament, 2003). However, contrary to newer theories regarding the dimensional structure of R/S (Hall, Meador & Koenig, 2008) that propose an R/S construct that contains several dimensions which were represented in the items generated for this measure, the analyses support a more parsimonious R/S construct that contains only 2 components. Although R/S contains numerous conceptually distinct dimensions (e.g., the concept of forgiveness is qualitatively different from the concept of a belief in the afterlife), the results suggest that from an empirical perspective, there are only 2 empirically valid dimensions, religious behaviors and spiritual attitudes/beliefs, that were identified in this sample.

The results of this study also supported the literature suggesting that positive relations with others, purpose in life, religious social support and positive religious coping mediate the relationship between R/S and psychological adjustment (Hill & Pargament, 2003; Steger & Frazier, 2005; Pargament, 1997; Ano & Vasconcelles, 2005). However, positive religious coping and religious social support only mediated the relationship between religious behaviors and psychological adjustment whereas the other two proposed intervening variables mediated the relationship between overall R/S and psychological adjustment.

The results did not support the literature suggesting that chronic stress moderates the relationship between R/S and indicators of psychological adjustment, such that the relationship between R/S and psychological adjustment is stronger under conditions of high chronic stress (Smith, McCullough & Poll, 2003). It is possible that the reason why chronic stress did not emerge as a moderator in this sample is because the sample as a whole was experiencing low levels of chronic stress. The total range of the modified

Chronic Burden Scale (Gurung, Taylor, Kemeny, & Myers, 2004) was restricted in the sample and floor effects were noted. It is possible that if a sample with greater range on chronic stress was selected, chronic stress might have emerged as a significant moderator. These results indicate that R/S is associated with better psychological functioning in a individuals with low chronic stress; however, a sample with higher levels of chronic stress would need to be selected in order to perform a test of whether R/S is a resiliency resource (i.e., promotes better psychological functioning under high chronic stress conditions). Moreover, the *Chronic Burden Scale* was modified for use in this study and exhibited relatively low internal consistency ($\alpha = .76$) in this sample. Perhaps, our analyses failed to detect an effect because of measurement error.

Finally, this research supported literature suggesting that different dimensions of R/S might have different effects on psychological adjustment (Smith, McCullough & Poll, 2003; Hackney & Sanders, 2003). This study found that when a measure of both spiritual beliefs and religious behaviors are included in the same model, it is the beliefs that are the primary driver of the relationship. This suggests that although religious behaviors are associated with positive psychological adjustment, this association is considerably attenuated if spiritual beliefs are controlled. This finding makes sense intuitively as one would expect religious behaviors (e.g., reading holy texts, attending religious services) to have less of an effect on psychological well-being if they are divorced from spiritual beliefs. Perhaps spiritual attitudes/beliefs emerged as the strongest predictor of psychological adjustment in this study, because spiritual attitudes/beliefs are hypothesized to correlate more strongly with an intrinsic religious orientation (i.e., the degree to which one believes that their religiousness has value in and

of itself) than religious behaviors. Studies have shown that intrinsic religiosity has the strongest associations with positive psychological adjustment than other dimensions of R/S (Smith, McCullough & Poll, 2003; Yonker, Schnabelrauch & DeHaan, 2012). Therefore, these results are consistent with the premise that intrinsic religiosity is the most potent element in religious and spiritual beliefs and behavior.

In summary, the results of this research were largely consistent with the literature in that they suggest that R/S is unitary construct with two empirically distinct components, R/S has a positive relationship with positive psychological adjustment, different components of R/S have different associations with psychological adjustment, and this relationship is mediated most strongly by positive relations with others and purpose in life. The only result that is inconsistent with much of the previous literature is the finding suggesting that chronic stress does not significantly moderate the relationship between R/S and psychological adjustment; stress

This study had numerous strengths. It utilized an internet-based sampling and a web-based data collection methodology that allowed for cost effective and rapid recruitment of a large sample that was diverse in terms of geography and Christian religious denomination. In addition, the sample was more diverse with regard to age, ethnicity, gender, and socio-economic status than typical samples recruited from college campuses or by convenience. In addition, the use of an internet-based sample allowed for recruitment of self-identified Christian individuals who do not necessarily attend religious services. This is important considering that one of the goals of this study was to understand the dimensional nature of R/S, and therefore, it was necessary to recruit a sample that was diverse with respect to religious behaviors and practices. This study also

featured context-specific measurement of R/S (i.e., use of a measure designed specifically for assessing Christian R/S with a Christian sample) which should theoretically provide more valid measurement of the R/S construct within a Christian population (Hall, Meador & Koenig, 2008). A major strength of this study was the use of structural equation modeling (SEM), which allowed for a comprehensive and powerful analysis of the relationship between R/S and psychological adjustment. In particular, SEM analyses allowed for simultaneous measurement of multiple intervening variables and moderators. Other strengths of the measurement methodology of this study included high quality multi-dimensional measurement of R/S, use of measures with pretested, strong psychometric properties, and statistical control of various potential confounds.

Despite these strengths, however, some limitations are worth noting. For example, because this study utilized a cross-sectional research design, conclusions cannot be drawn about causal relationships between R/S and psychological adjustment. Therefore, results of this study only support the hypotheses that these constructs are significantly associated. For example, indicators of positive well being might influence individuals to become more religious or spiritual and third variables might play a part in the associations reported. The sample also did not have significant representation from ethnic groups other than Caucasians and African-Americans. Therefore, these results might not generalize to other groups, but their applicability to these two groups can be considered a strength given that many studies of the relationship between R/S and psychological adjustment utilize convenience samples that do not have sufficient representation of minority groups to allow for tests of ethnic moderation. The sample was also not representative of the general population in the United States. It was

younger, more educated, more likely to be female, and less likely to be Christian. Also, since the sample was recruited from the internet, there are some details that remain unknown about the population from which the sample was recruited.

Another potential limitation of the research was the use of context-specific measurement of R/S). Although, this approach to measurement was chosen because it was hypothesized to improve measurement of R/S within the Christian population, the disadvantage is that the results might not generalize beyond this religious tradition.

Although the sample size was relatively large (N = 503), it was not large enough to conduct a confirmatory factor analysis on the all of the *MCRSI* items. Therefore, the dimensional structure of R/S that was identified in this analysis should be confirmed using a confirmatory factor analysis with a larger and ideally more ethnically diverse sample. Notably, the analyses that were used to analyze different relationships between different components of R/S and psychological adjustment were exploratory. Since the likelihood of Type 1 error is increased in exploratory analyses, these findings in particular should be replicated before firm conclusions are drawn from the results.

This research has numerous implications for the ongoing study of R/S as a psychological construct. The present study is important in that it further elucidated the dimensional structure of R/S. Understanding the dimensional structure of R/S is important, because it allows for improved scientific measurement of the R/S construct. With improved theory and measurement, researchers will be better able to determine whether and how R/S is associated with important psychological and physical health outcomes.

In addition to supporting previous research that indicates a relationship between R/S and psychological adjustment (Sawatzky, Ratner & Chiu, 2005; Koenig, McCullough & Larson, 2001), this study utilized comprehensive and theory-driven assessment of R/S to further elucidate the mechanisms through which R/S might influence psychological health and well-being. Although there is a strong body of literature suggesting that social support is a mediator of the relationship between R/S and psychological adjustment (Hill & Pargament, 2003), much less empirical research has examined whether perceived positive relations with others serves as a mediator of this relationship. In addition, little work has examined the role that positive religious coping, religious social support, and purpose in life play as mediators, and as of this writing, this author is not aware of other studies that have examined all of these mediators simultaneously using SEM.

Although analyses of different relationships between different dimensions of R/S and psychological adjustment were exploratory, they make a contribution to the literature and have significant implications for future research in the area. These findings suggest that it is spiritual attitudes/beliefs that drive the association between R/S and psychological adjustment and that the religious behavior has a much more limited independent impact on this form of psychological functioning in this sample. In addition, this study found that religious behaviors can have a positive association with some aspects of psychological adjustment (e.g., positive affect) even without associated spiritual beliefs. This is an important finding in that it helps to further isolate the aspects of R/S that drive the association between R/S and psychological functioning. Therefore, future researchers in this area will be better able to design measures and empirical studies

that focus specifically on those aspects of R/S that have strong associations with specific positive psychological outcomes.

In addition to implications for the scientific study of R/S, results generated from this study could have applied clinical implications for at least Christian patients. For example, since this study demonstrates that R/S is clearly linked to various aspects of psychological functioning (e.g., depression and perceived stress), it highlights the potential importance of assessing R/S in clinical settings. Clinicians who assess their patients' spiritual/religious functioning might have a better awareness of factors influencing their patients' clinical presentation and/or they might be better able to generate psychological interventions sensitive to and informed by their patients' religious/spiritual disposition and related cultural beliefs. For example, clinicians could harness a depressed patient's pre-existing spiritual beliefs (e.g., all things happen for a purpose, God will not give me more than I can bear) to motivate patients, help them to search for benefit in negative situations, or improve patient buy-in when using interventions to challenge catastrophic cognitions surrounding negative events. In addition, a clinician could encourage participation in religious behaviors (e.g., church attendance) among believers to increase behavioral activation, an intervention that has been shown to improve general psychological functioning (Hopko, Lejuez, Ruggiero & Eifert, 2003).

Although the negative impact of some aspects of R/S (e.g., negative religious coping, religious social undermining) was not a focus of this study, clinicians could also assess for aspects of R/S that are known to be associated with poor psychological functioning (e.g., religious struggle, religious social undermining, negative religious

coping) (Pargament, 1997; Hill & Pargament, 2003) in order to help improve conceptualization and treatment of patients. Finally, since overall R/S appears to be associated with improved psychological adjustment and well-being, clinicians could draw upon their patients' pre-existing positive religious beliefs/behaviors in order to prevent relapse or further deterioration of psychological functioning.

Although this research helped to advance understanding of the R/S construct and its association with psychological adjustment, several new questions have emerged and many questions still remain unanswered. For example, current evidence does not elucidate whether R/S is causally related to psychological adjustment and the mediators identified in this study, in good part because one cannot manipulate religious behavior or spiritual beliefs in experimental designs. For example, it is unknown whether R/S contributes to a sense of a greater purpose in life or whether people who feel like they have a purpose in life are more likely to become religious/spiritual. This research appears to show that R/S is associated with better psychological adjustment, but little is known about the role it plays, if any, in recovery from psychological disorders. For example, are religious/spiritual people more likely to make faster and more stable recoveries from mental illness? Although some research suggests that people who are more religious are likely to recover more quickly from depression when they are in treatment (Schettino et. al., 2011; Koenig, George & Peterson, 1998), not much is known about the specific mechanisms through which R/S might affect recovery and impact treatment or whether R/S is associated with recovery from psychological conditions other than depression.

Future work in this area should include more longitudinal research designs. Although much is known about the cross-sectional relationship between R/S and psychological adjustment, little is known about whether and how R/S causally impacts psychological health and well-being. Future longitudinal studies could examine whether R/S protects against the development of psychological disorders. In addition, longitudinal studies could advance understanding of whether and how R/S impacts recovery from physical or mental illness, whether R/S itself changes during the course of the recovery, and whether R/S is associated with response to psychopharmacological and psychotherapeutic treatments. In addition, research is needed to determine which spiritual beliefs promote recovery and whether these are different from the beliefs that promote resilience. Future experimental studies could also be designed to examine whether the validation or affirmation of certain spiritual beliefs and religious behaviors affects psychotherapy outcomes. These studies could begin to determine whether R/S is causally associated with psychological outcomes. Finally, more research needs to be conducted in order to improve understanding of the underlying biological effects of R/S on health and well-being. For example, do the same intervening variables and dimensions of R/S that predict psychological adjustment also predict physical health and what are the underlying biological pathways? Some studies suggest that R/S is associated with improved neuroendocrine and immune functioning, including lower levels of cortisol (Carrico et al., 2006; Tartaro, Lueken & Gunn, 2005) and lower levels of IL-6 (Koenig et al., 1997), but more work needs to be done to identify the specific dimensions of R/S that have the strongest associations with these biological mechanisms.

Although there are still many questions that remain unanswered, this study makes important contributions that advances understanding of how religiosity and spirituality affects psychological adjustment and identifies new questions to be addressed by future research. What is clear is from this study and the growing body of literature in this area is that R/S has an important association with psychological adjustment and the quality of this relationship appears to change depending on the dimension of R/S being examined.

Table 1

MCRSI Conceptual Dimensions of Christian Religiosity/Spirituality

Dimensions	Definition	Representative Item
Identification	Public identification with one's religion.	My faith is an important part of my identity.
Internalization	Internalization of a religious world view and perspective	The way I view the world is based on my faith.
Intrinsic Religiosity	Motivation to be religious because of its own inherent value.	I follow my faith, because I believe in its values and principles.
Forgiveness	Belief in and practice of forgiveness.	Because of my faith, I forgive those who hurt me.
Responsibilities	Perceived responsibilities to love God and humanity, because of religious beliefs.	Because of my faith, I frequently help others in whatever way I can.
God Locus of Control	Perception that God determines one's life course and events that occur in one's life.	My future is in God's hands.
Personification of God	Belief that God is a real entity with whom one can interact and form an attachment.	I have a personal relationship with God.
Meaning/Purpose	Meaning and purpose in life found through one's religious beliefs.	God created me for a purpose.
Health Beliefs	Belief that God can heal and protect from illness.	God has the power to positively affect my health (e.g., cure illness, protect from sickness).
Afterlife Beliefs	Belief in an afterlife and belief that one will go to a benevolent afterlife upon death.	I believe in an afterlife.
Private Religiosity	Frequency of private religious practices.	Over the past 6 months, how often have you prayed.

Table 1 (continued)

Dimensions	Definition	Representative Item
Public Religiosity	Frequency of public religious practices	Over the past 6 months, how often have you attended worship services at church.

Table 2
Descriptive Statistics of Piloted MCRSI Items

Items #	*M* (*SD*)	Skewness (*SE* = .14)	Kurtosis (*SE* = .28)
1) The way I view the world is based on my faith [a]	3.2 (*1.52*)	-.64	-50
2) My values are derived from my faith [a]	3.5 (*1.43*)	-.94	.24
3) My faith is not an important part of my identity [b]	3.3 (*1.58*)	-.63	-.71
4) Most people know me as a person who is serious about my faith [b]	2.6 (*1.64*)	-.15	-1.19
5) I follow my faith because I believe in its values and principles [c]	3.6 (*1.45*)	-1.05	.32
6) I follow my faith because I love God [c]	3.7 (*1.62*)	-1.07	.01
7) Because of my faith, I forgive myself for things I have done wrong [d]	3.1 (*1.47*)	-.54	-.57
8) Because of my faith, I forgive those who hurt me [d]	3.5 (*1.41*)	-.91	.18
9) I know that God forgives me [d]	4.0 (*1.42*)	-1.59	1.79
10) I believe in an afterlife [e]	4.0 (*1.36*)	-1.46	1.54
11) I believe that I will go to heaven when I die [e]	3.6 (*1.56*)	-1.04	.13
12) I have a personal relationship with God [f]	3.6 (*1.61*)	-1.04	-.02
13) God is a father-figure to me [f]	3.2 (*1.76*)	-.67	-.87
14) I am helpless without God [g]	3.1 (*1.88*)	-.49	-1.23
15) My future is in God's hands [g]	3.5 (*1.70*)	-.84	-.52
16) God created me for a purpose [h]	3.7 (*1.58*)	-1.13	.15
17) I don't find meaning in life through my faith [h]	3.4 (*1.58*)	-.71	-.59
18) God has the power to positively affect my health (e.g., cure illness, protect from sickness) [i]	3.3 (*1.75*)	-.75	-.77
19) God does not care about my physical health [i]	3.6 (*1.60*)	-.93	-.27
20) I believe that god has positively affected my health in the past [i]	3.1 (*1.63*)	-.53	-.76
21) Because of my faith, I love other people as much as I love myself [j]	3.2 (*1.44*)	-.76	-.13
22) I love God above all else [j]	3.2 (*1.77*)	-.61	-.96
23) Because of my faith, I frequently help others in whatever way I can [j]	3.4 (*1.38*)	-.85	.27
24) Prayer [k]	3.5 (*1.70*)	-.88	-.57
25) Read holy texts (e.g., Bible) [k]	2.2 (*1.78*)	.12	-1.40
26) Attended worship services at church [l]	1.7 (*1.43*)	.25	-1.25
27) Confessed your sins to clergy, God or other members of your faith [l]	1.4 (*1.70*)	.88	-.63
28) Participated in religiously based/motivated charitable activities [l]	1.2 (*1.25*)	.94	.20
29) Participated in small group activities (e.g., Bible study, prayer group, etc.) [l]	1.2 (*1.37*)	.82	-.62

Table 2 (Continued)

Items #	*M* (*SD*)	Skewness (*SE* = .14)	Kurtosis (*SE* = .28)
30) Shared your faith with others (e.g., witnessed to a non-Christian, brought a non-Christian to Church, etc.) [l]	1.2 (*1.34*)	1.2	.62
31) Participated in official church responsibilities (e.g., singing in the choir, ushering, preaching, etc.) [l]	0.9 (*1.32*)	1.2	.10

Maximum range for all items was between 0 – 5;
Observed range was between 0 – 5
Conceptual Dimensions: [a] = Internalization, [b] = Identification, [c] = Intrinsic Religiosity, [d] = Forgiveness, [e] = Afterlife Beliefs, [f] = Personification, [g] = God Locus of Control, [h] = Meaning/Purpose, [i] = Health Beliefs, [j] = Responsibilities, [k] = Private Behaviors, [l] = Public Behaviors

Table 3
Descriptive Statistics for Continuous Variables (Pilot Study)

Variable	Mean (*SD*)	Range	Skewness (*SE*)	Kurtosis (*SE*)
RS Context	8.4 (*3.42*)	0 - 12	-.85 (*.14*)	-.27 (*.28*)
RS Support	11.3 (*3.89*)	0 - 15	-1.28 (*.17*)	1.23 (*.36*)
Age	35.1 (*12.43*)	18 – 67	.60 (*.14*)	-.64 (*.28*)
Years of Education	15.0 (*3.72*)	1 – 26	-1.14 (*.14*)	3.11 (*.28*)
Annual Income	38,029.4 (*32,236. 22*)	0 – 150,000	1.22 (*.18*)	1.74 (*.35*)
Global Religiosity	1.7 (*.91*)	0 – 3	-.22 (*.14*)	-.75 (*.28*)
Global Spirituality	2.2 (*.81*)	0 – 3	-.64 (*.14*)	-.36 (*.28*)
Percentage Tithed	1.6 (*3.24*)	0 – 14	2.45 (*.17*)	4.90 (*.34*)
RS Attitudes/Beliefs Factor	81.6 (*30.21*)	1 – 120	-.88 (*.15*)	-.09 (*.30*)
RS Behaviors Factor	7.3 (*6.07*)	0 – 25	.53 (*.14*)	-.83 (*.28*)

Table 4
Descriptive Statistics for Categorical Variables (Pilot Study)

Variable	% (*N*)
Gender	
Male	31.1 (93)
Female	68.9 (206)
US Region	
Northeast	20.6 (62)
South	28.6 (86)
Midwest	28.6 (86)
Mountain West	8.0 (24)
Pacific	14.3 (43)
Ethnicity	
Caucasian	80.1 (241)
Af-Am	5.3 (16)
Hispanic	5.3 (16)
Asian	6.0 (18)
Native American	1.7 (5)
God Belief	
Yes	94.0 (281)
No	6.0 (18)
Evangelical/Fundamentalist	
Yes	20.7 (62)
No	79.3 (237)
Church Member	
Yes	55.8 (168)
No	44.2 (133)
Christian Denomination	
Catholic	29.6 (89)
Eastern Orthodox	3.0 (9)
Mormon	2.7 (8)
Jehovah's Witness	0.7 (2)
Traditional Protestant	27.6 (83)
Charismatic Protestant	5.3 (16)
Non-denominational Protestant	14.6 (44)
Other	15.9 (48)

Table 5
Descriptive Statistics for Continuous Variables (Main Study)

Variable	Mean (*SD*)	Range	Skewness (*SE*)	Kurtosis (*SE*)
Age	31.7 (12.12)	18 – 82	1.16 (.08)	.84 (.16)
Years of Education	14.4 (4.03)	1 – 29	-.923 (.08)	2.11 (.16)
Annual Income	33,585 (29,843)	0 – 170,000	1.22 (.11)	1.66 (.21)
Global Religiosity	1.2 (1.03)	0 – 3	.24 (.08)	-1.17 (.16)
Global Spirituality	1.6 (1.02)	0 – 3	-.16 (.08)	-1.10 (.16)
Percentage Tithed	2.6 (12.18)	0 – 100	7.43 (.13)	56.35 (.26)
RS Attitudes/Beliefs Factor	83.0 (25.90)	0 – 120	-.73 (.11)	-.01 (.23)
RS Behaviors Factor	6.5 (5.80)	0 – 25	.86 (.11)	-.08 (.22)
Ryff's Positive Relations	23.5 (6.09)	0 – 35	-.22 (.08)	-.22 (.17)
Ryff's Purpose in Life	23.8 (6.54)	5 – 35	-.32 (.08)	-.55 (.17)
Religious Coping	5.0 (2.56)	0 – 9	-.15 (.11)	-.92 (.22)
Religious Social Support	14.1 (5.40)	0 – 21	-.23 (.11)	-.62 (.22)
Chronic Burden Scale	5.5 (4.63)	0 – 24	.97 (.08)	.56 (.17)
RS Context	8.8 (2.94)	0 – 12	-.73 (.11)	-.26 (.22)
Depression (CES-D)	10.2 (5.79)	0 – 30	.45 (.08)	-.30 (.17)
Positive Affect (PANAS)	23.0 (8.16)	0 – 40	-.12 (.08)	-.41 (.17)
Perceived Stress (PSS)	18.1 (6.36)	3 – 26	.10 (.08)	-.20 (.17)

Table 6
Descriptive Statistics for Categorical Variables (Main Study)

Variable	% (*N*)
Gender	
Male	43.5 (387)
Female	56.5 (503)
US Region	
Northeast	25.0 (223)
South	30.6 (273)
Midwest	21.6 (193)
Mountain West	5.8 (52)
Pacific	16.9 (151)
Ethnicity	
Caucasian	69.7 (622)
Af-Am	18.3 (163)
Hispanic	2.6 (23)
Asian	7.1 (63)
Native American	1.1 (10)
Other	1.1 (10)
Married	
Yes	53.9 (480)
No	46.1 (411)
Depression Screen Cut-off	
Above Cut-off	32.5 (275)
Below Cut-off	67.5 (570)
Religious Faith/Spiritual Beliefs	
Yes	73.1 (651)
No	26.9 (239)
God Belief	
Yes	72.4 (643)
No	27.6 (246)
Raised Christian	
Yes	76.7 (683)
No	23.3 (208)
Religious Orientation	
Atheism	10.9 (97)
Agnostic	16.4 (146)
Buddhist	2.2 (20)
Christianity	56.6 (505)
Hinduism	1.6 (14)
Islam	2.1 (19)
Judaism	1.9 (17)
Other	8.3 (74)

Table 6 (Continued)

Variable	% (*N*)
Christian Denomination	
Catholic	34.7 (175)
Eastern Orthodox	4.0 (20)
Mormon	1.8 (9)
Jehovah's Witness	2.8 (14)
Traditional Protestant	39.1 (197)
Charismatic Protestant	6.5 (33)
Other	10.3 (52)
Evangelical/Fundamentalist	
Yes	22.1 (111)
No	77.9 (392)
Church Member	
Yes	52.8 (265)
No	47.2 (237)
Church Leadership Position	
Yes	8.7 (44)
No	91.3 (460)

Table 7
Comparison between Christians and Non-Christians on Selected Variables (Main Study)

Variable	Christian (*n* = 505) Mean (*SD*)	Non-Christian (*n* = 389) Mean (*SD*)
Age**	32.8 (12.27)	30.2 (11.78)
Years of Education	14.2 (4.18)	14.6 (3.81)
Annual Income**	36,503 (29,864)	29,764 (29,445)
Ryff's Pos Relations**	24.1 (5.84)	22.8 (6.34)
Ryff's Purpose in Life***	24.6 (6.41)	22.9 (6.60)
Chronic Burden Scale	5.3 (4.49)	5.9 (4.79)
Depression (CES-D)***	9.6 (5.77)	11.0 (5.72)
Positive Affect (PANAS)**	23.8 (8.21)	21.9 (7.96)
Perceived Stress (PSS)*	17.7 (6.29)	18.7 (6.40)
Global Religiosity***	1.74 (.84)	.49 (.79)
Global Spirituality***	1.99 (.83)	1.12 (1.04)
	% (*n*)	% (*n*)
Gender		
Male	41.5 (209)	46.1 (178)
Female	58.5 (295)	53.9 (208)
US Region**		
Northeast	22.0 (111)	28.9 (112)
South	34.7 (175)	25.3 (98)
Midwest	22.6 (114)	20.4 (79)
Rocky Mountains	5.9 (30)	5.7 (22)
Pacific Coast	14.9 (75)	19.6 (76)
Married/Cohabitating**		
Yes	51.0 (257)	39.8 (154)
No	49.0 (247)	60.2 (233)
Race/Ethnicity***		
Caucasian	72.5 (366)	66.1 (256)
African-American	20.8 (105)	15.0 (58)
Hispanic/Latino	2.2 (11)	3.1 (12)
Asian	2.8 (14)	12.7 (49)
Native American	1.4 (7)	0.8 (3)
Other	0.4 (2)	2.1 (8)
Belief in God***		
Yes	96.0 (482)	41.7 (161)
No	4.0 (20)	58.3 (225)
Raised as Christian***		
Yes	91.9 (463)	56.8 (220)
No	8.1 (41)	43.2 (167)

Table 7 (Continued)

	% (*n*)	% (*n*)
Depression Screen**		
Above Cut-off	27.8 (131)	38.6 (144)
Below Cut-off	72.2 (341)	61.4 (229)

* $p < .05$, ** $p < .01$. *** $p < .001$

Table 8
Correlations of Selected Variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Age	---														
2. Education	.19***	---													
3. Income	.40***	.21***	---												
4. Positive Relations	.10*	.02	.09	---											
5. Purpose in Life	.04	.05	.16**	.60***	---										
6. Depression	-.11*	-.03	-.17**	-.58***	-.61***	---									
7. Chronic Stress	.04	-.08	-.18**	-.39***	-.43***	.53***	---								
8. Perceived Stress	-.09	.04	-.21***	-.59***	-.59***	.79***	.57***	---							
9. Positive Affect	-.03	.01	.06	.57***	.57***	-.63***	-.34***	-.63***	---						
10. Religious Coping	.07	.05	-.02	.22***	.26***	-.17***	.04	-.15**	.31***	---					
11. Religious Peers	.06	.14**	.08	.16***	.21***	-.13**	-.14**	-.11*	.18***	.20***	---				
12. Spiritual A/B	.16**	.09	.04	.23***	.31***	-.20***	-.03	-.15**	.26***	.78***	.25***	---			
13. Religious Beh	-.03	.09*	.11	.11*	.11*	-.08	.05	-.13**	.22***	.54***	.16***	.51***	---		
14. Married	.33***	.02	.39***	.10*	.10*	-.04	.05	-.03	-.01	-.01	-.02	.12*	-.01	---	
15. Caucasian	.17***	.04	.09	.04	.02	-.08	.19***	-.06	-.06	-.08	.02	-.07	-.14**	.09*	---
16. African-American	-.14**	-.05	-.09	-.08	-.05	.12*	.42***	.09*	-.01	.09*	-.03	.06	.07	-.10*	-.82***

* $p < .05$, ** $p < .01$. *** $p < .001$

Figure 1

Conceptual Model of the Relationship between Religiosity/Spirituality and Psychological Adjustment

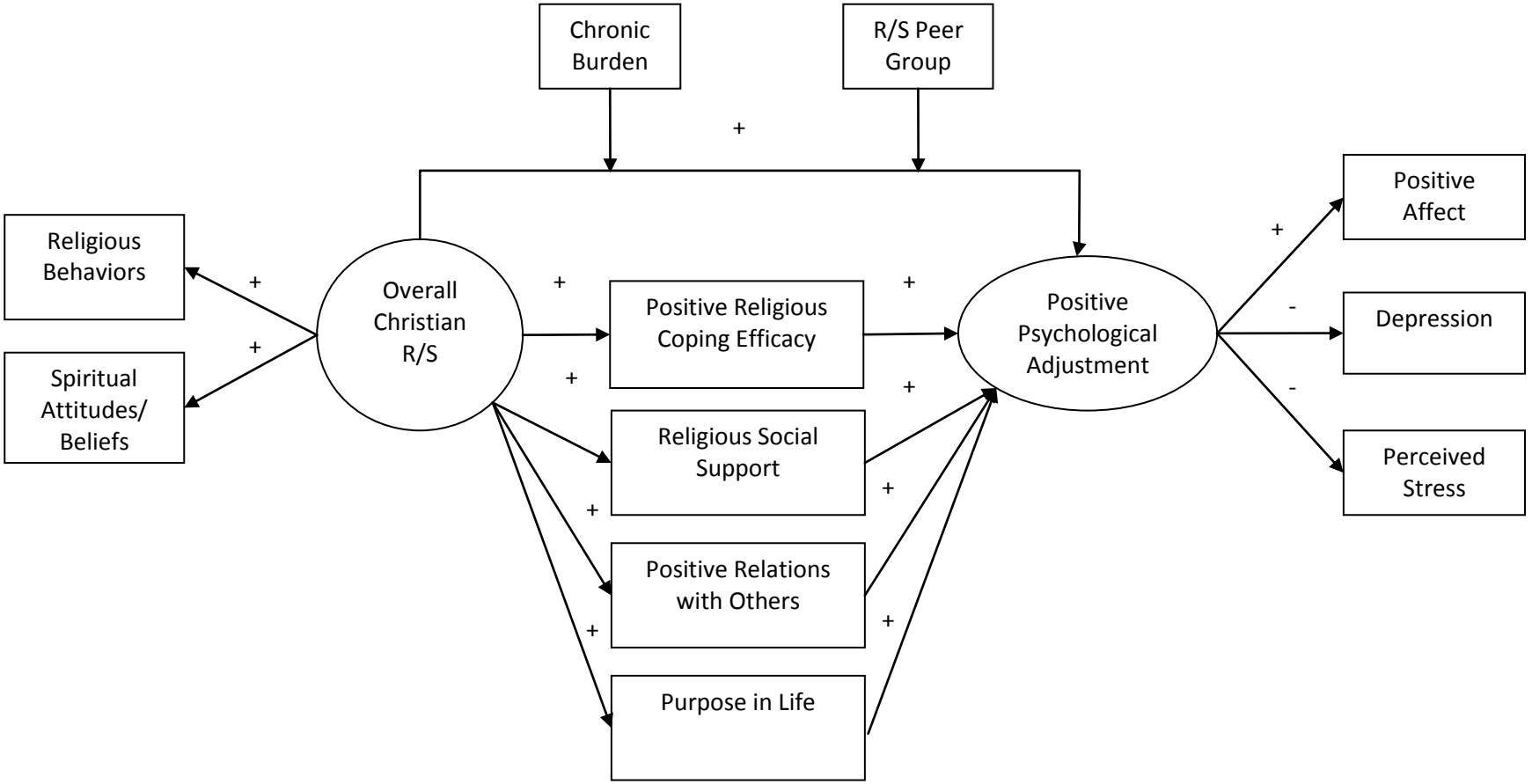
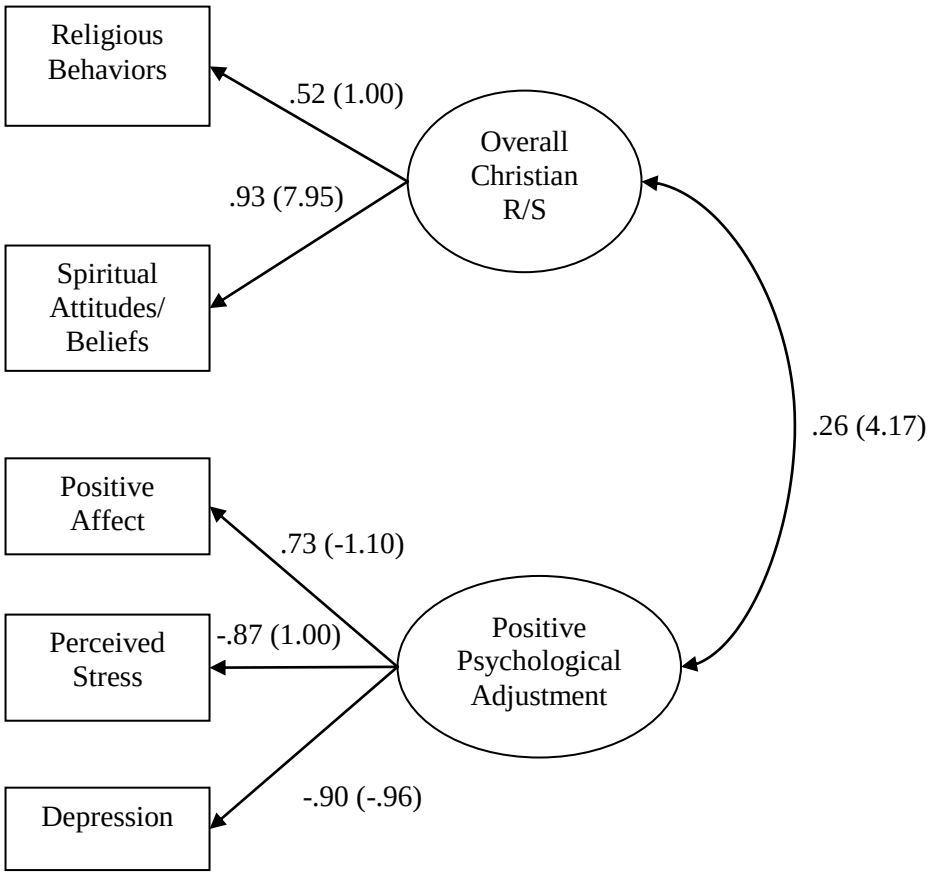


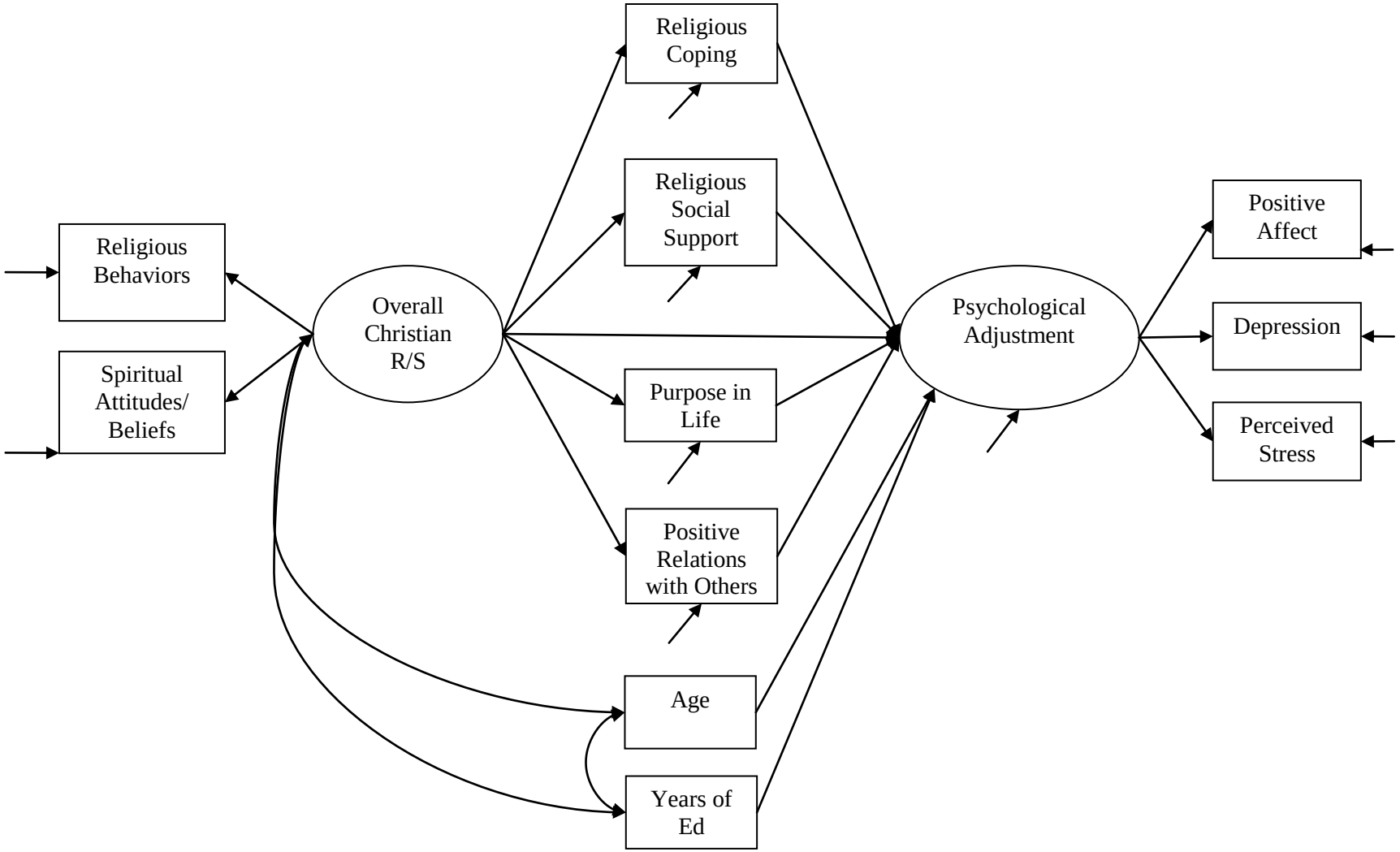
Figure 2

Measurement Model of Latent Variables (Overall Christian R/S and Positive Psychological Adjustment) with Standardized Coefficients



Note: Residuals were estimated, but for ease of interpretation were not included in the diagram. Unstandardized coefficients are shown in parentheses

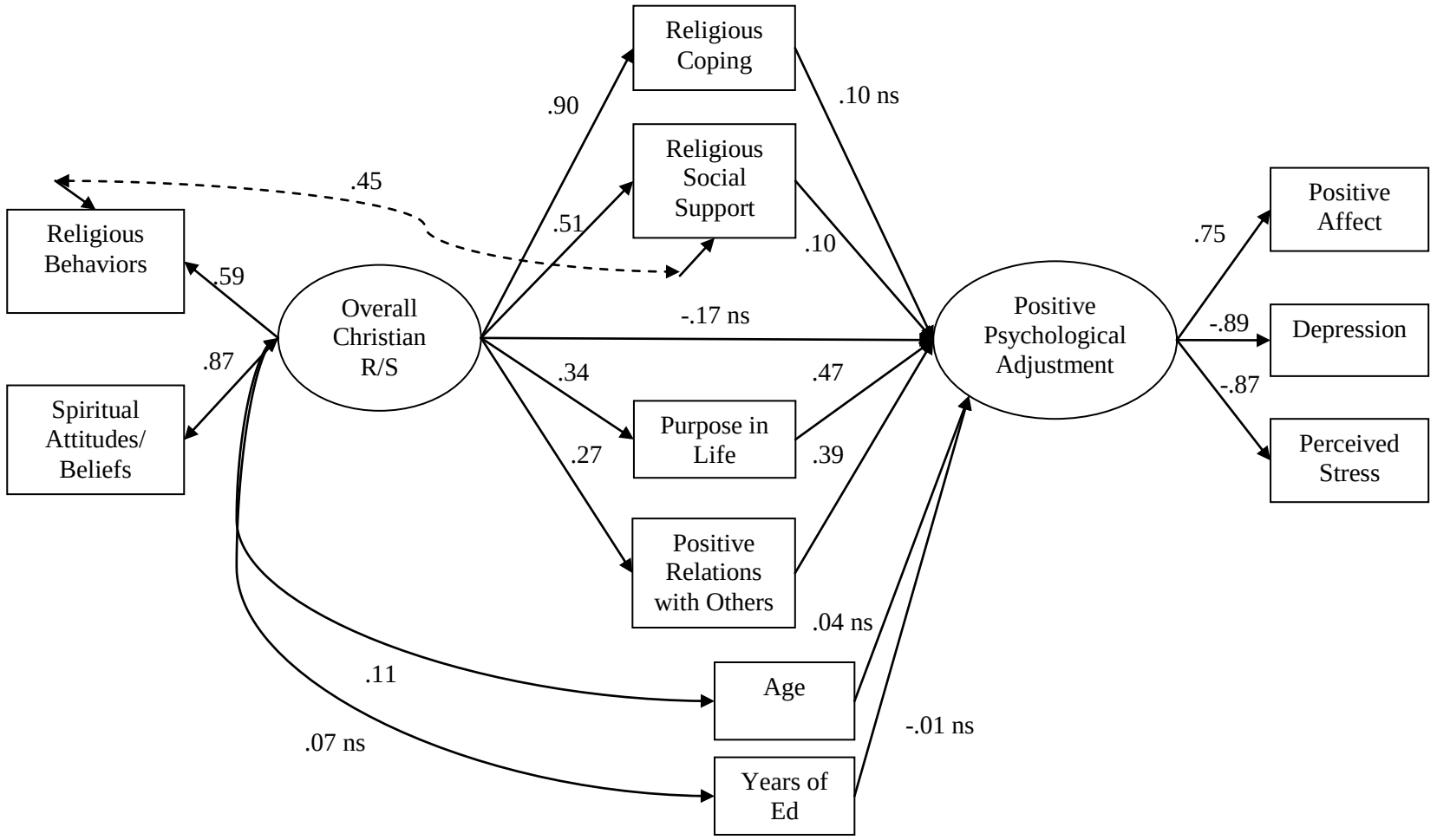
Figure 3
Statistical Model for Tests of Direct and Indirect Effects of R/S on Psychological Adjustment (Hypotheses 2-6)



Note: Correlated residual between purpose in life and positive relations was estimated, but the path is not shown in the diagram.

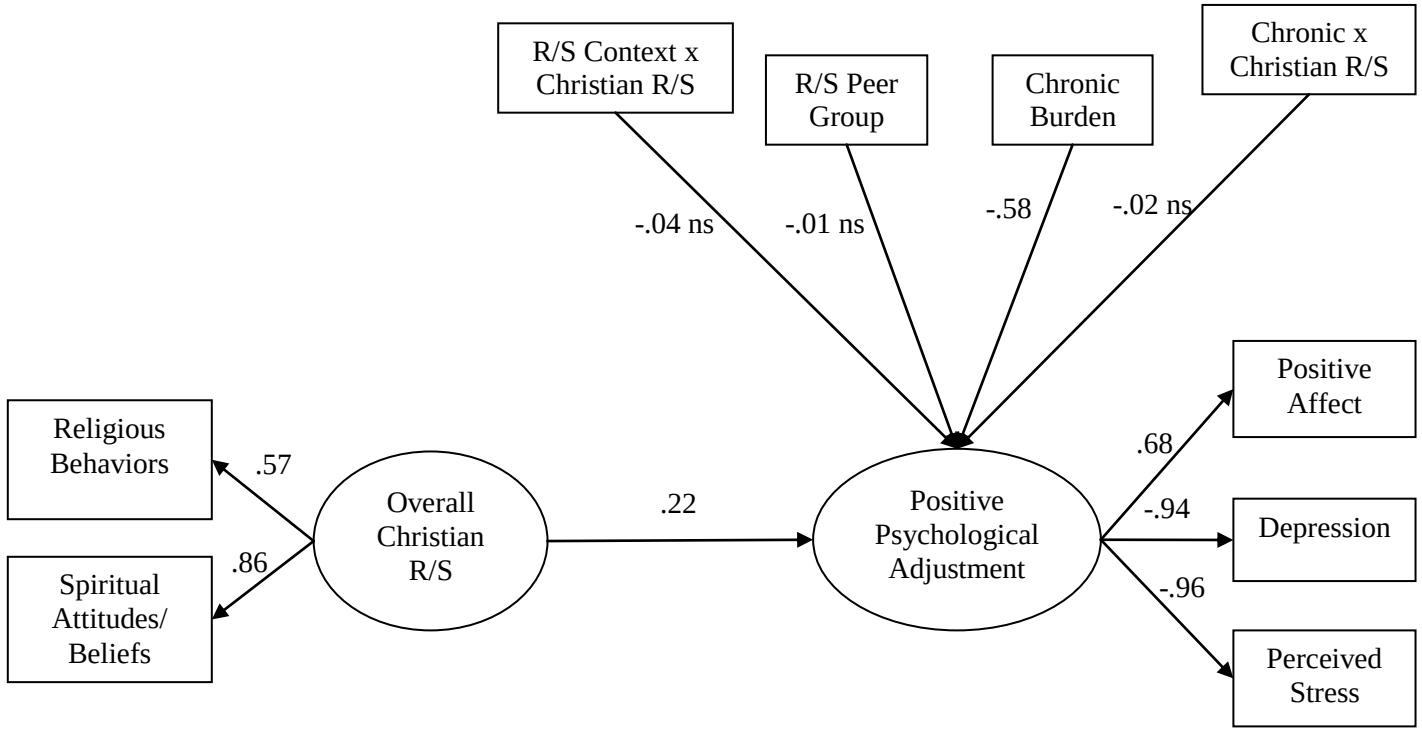
Figure 4

Final Model for Test of Direct Effect and Mediation with Standardized Coefficients and Model Modifications



Note: Residuals, correlated residuals between intervening variables, correlations between covariates and unstandardized coefficients were estimated, but for ease of interpretation are not shown in this diagram. Paths with non-significant unstandardized coefficients ($p > .05$) are denoted with *ns*.

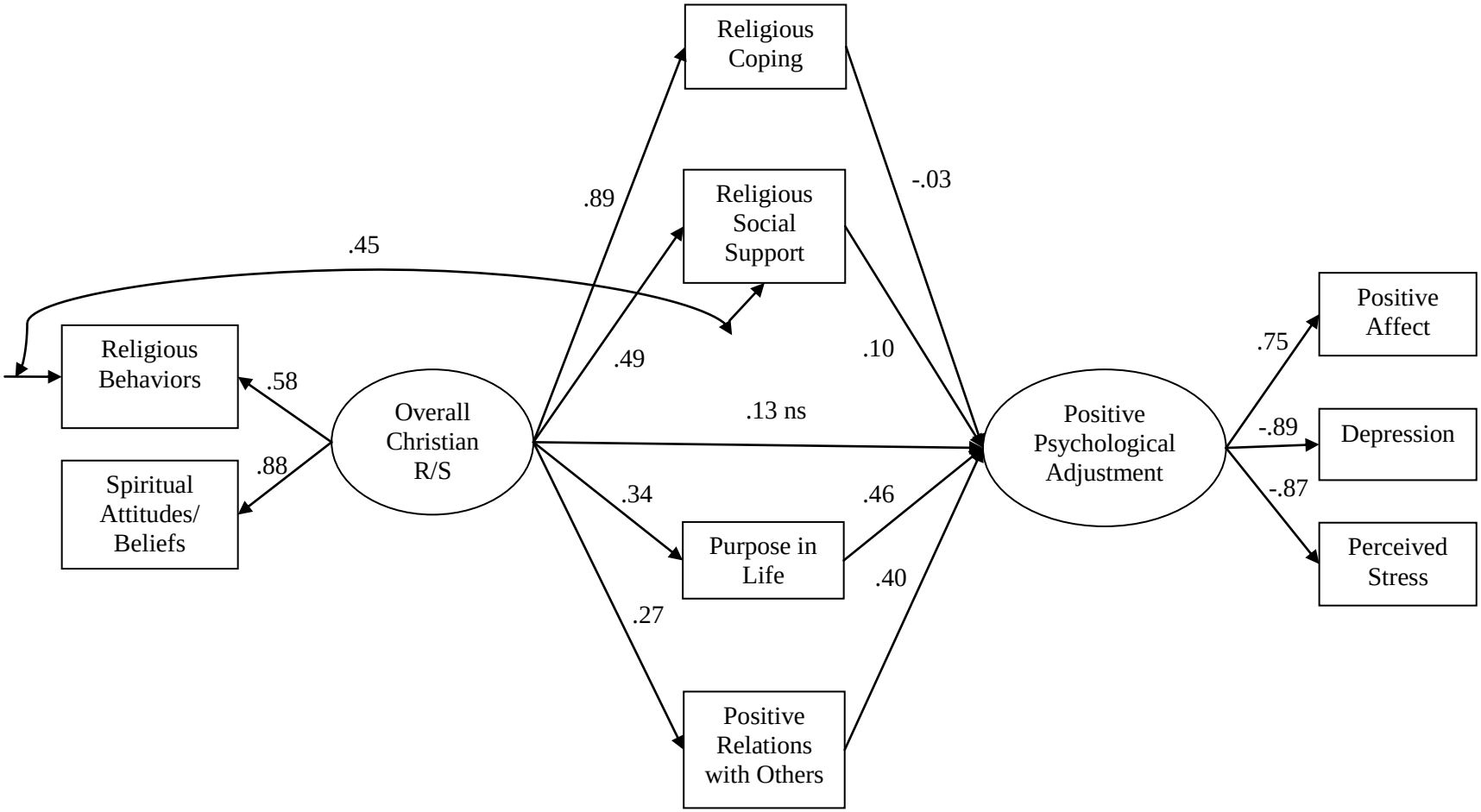
Figure 5
Final Model for Tests of Moderation with Standardized Coefficients (Hypotheses 7 & 8)



Note: Residuals and unstandardized coefficients were estimated but for ease of interpretation were not included in the diagram. Paths with non-significant unstandardized coefficients ($p > .05$) are denoted with *ns*.

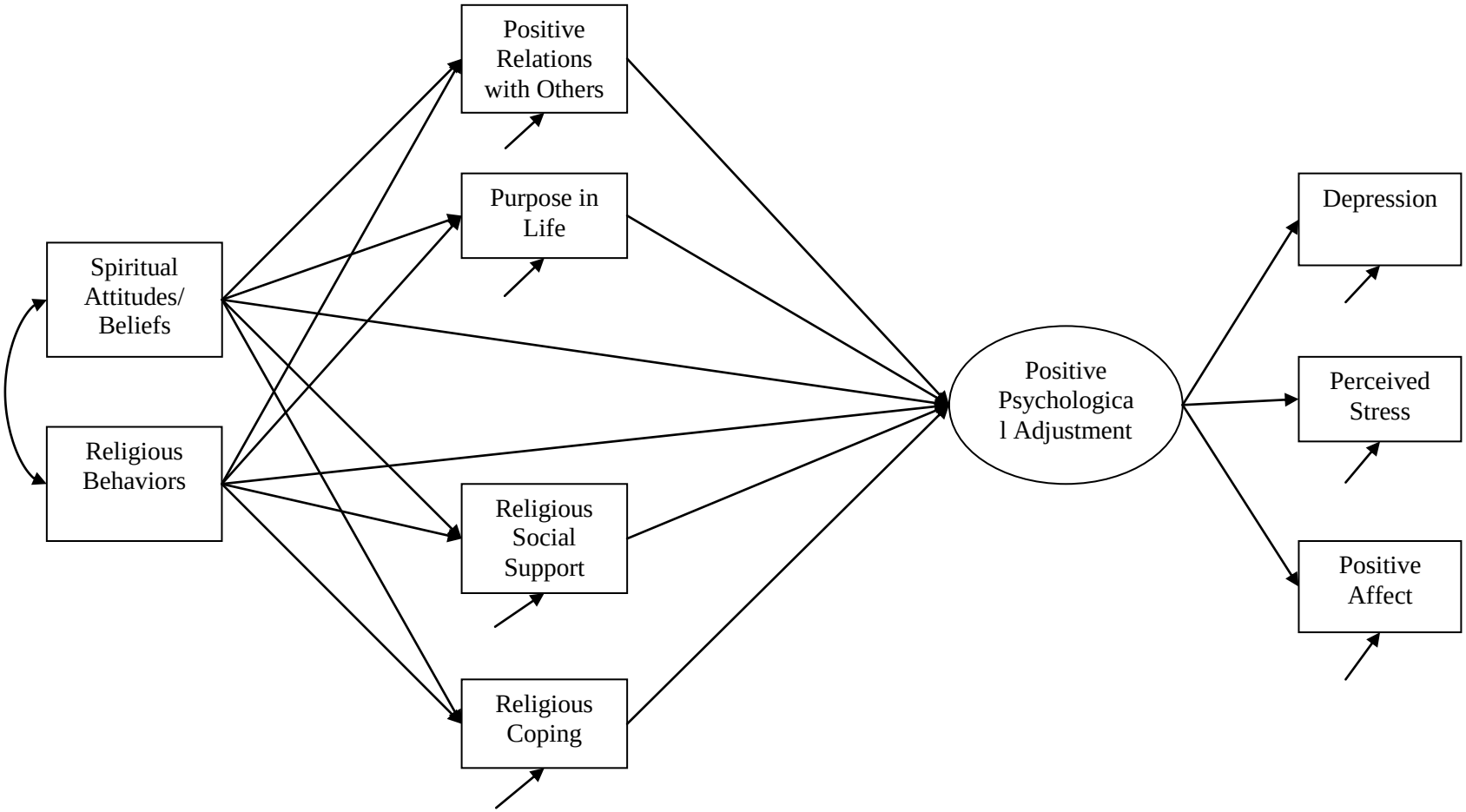
Figure 6

Model Used for Multiple Group Exploratory Analyses with Standardized Coefficients



Note: Residuals, correlated residuals between intervening variables, and unstandardized coefficients were estimated, but for ease of interpretation are not shown in this diagram. Paths with non-significant unstandardized coefficients ($p > .05$) are denoted with *ns*.

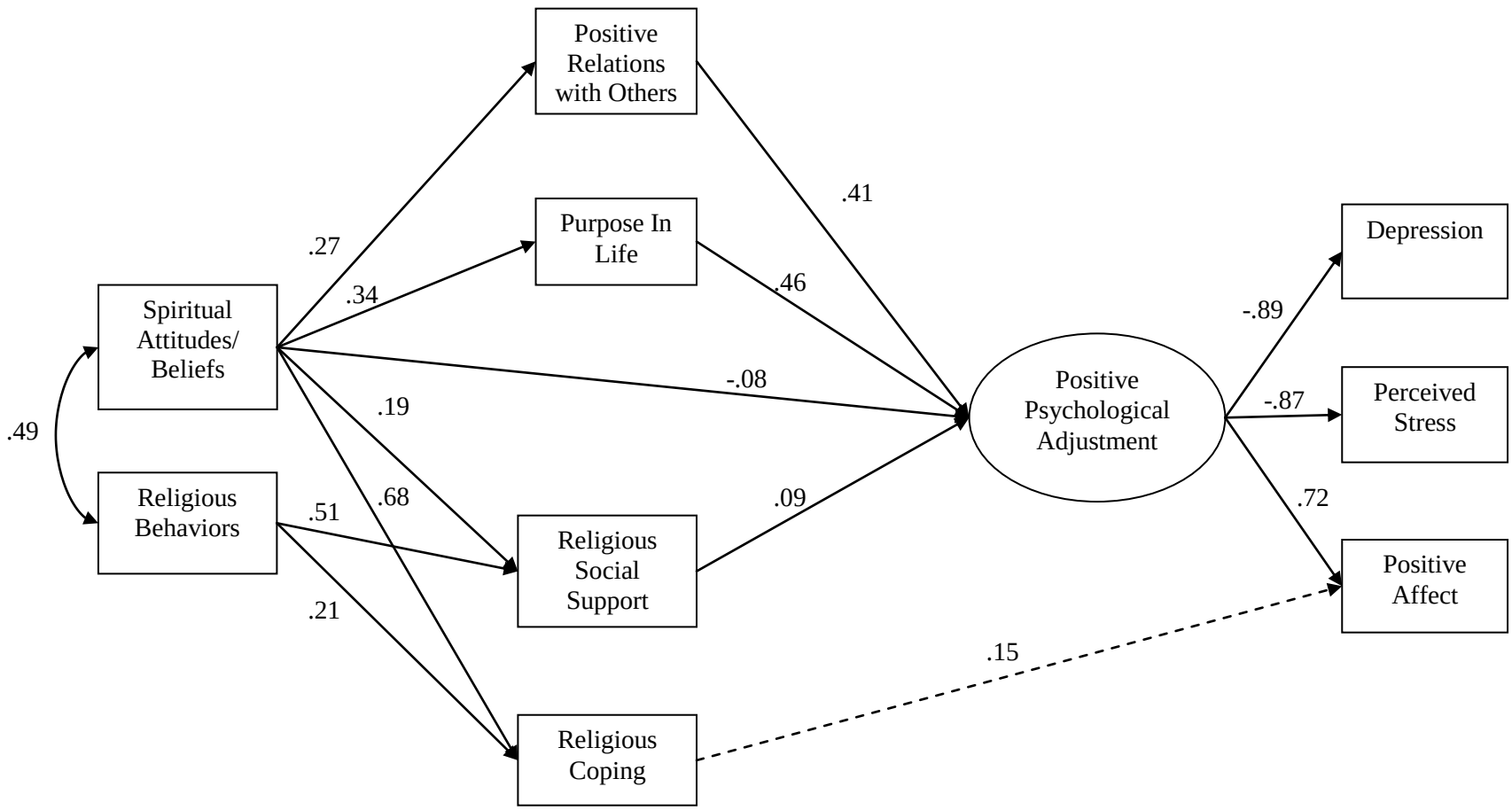
Figure 7
Statistical Model for Exploratory Analysis of Different Effects of Components of R/S



Note: Correlated residual between purpose in life and positive relations was estimated, but the path is not shown in the diagram.

Figure 8

Final Exploratory Model of Different of Effects of Components of R/S with Standardized Coefficients and Model Modifications



Note: Residuals, correlated residuals between intervening variables, and unstandardized coefficients were estimated, but for ease of interpretation were not included in the diagram. All paths shown have significant ($p < .05$) unstandardized coefficients.

Appendix A

Demographics Questionnaire

Instructions: Please tell us some basic information about you so we can get to know you a little better.

1) What is your gender?
- ❍ Male (1)
- ❍ Female (0)

2) Please fill out the following information

Age (1)
U.S. State (2)
Years of Education (3)
Approximate Annual Income (4)

3) Are you currently married or living with a partner?
- ❍ Yes (1)
- ❍ No (0)

4) Which of the following would best describe the area you currently live in?
- ❍ Rural (1)
- ❍ Small town (e.g., a small town not located in a large metropolitan area) (2)
- ❍ Suburban (e.g., a town or small city located in a large metropolitan area) (3)
- ❍ Urban --- inside of a medium size city (population 100,000 - 500,000) (4)
- ❍ Urban --- inside of a large city (population over 500,000) (5)

5) Please select your race/ethnicity (select all that apply)
- ❑ Caucasian (not of Hispanic/Latino origin) (1)
- ❑ African-American (not of Hispanic/Latino origin) (2)
- ❑ Hispanic/Latino (3)
- ❑ Asian or Pacific Islander (4)
- ❑ Native American/American Indian (5)
- ❑ Other (6)

6) In general would you say your health is:
- ❍ Excellent (4)
- ❍ Very Good (3)
- ❍ Good (2)
- ❍ Fair (1)
- ❍ Poor (0)

7) Do you have a physical condition (e.g., severe chronic pain, physical illness, disability) that limits your ability to get around (e.g., run errands, visit friends, go to work, etc.)?

- ❍ Yes (1)
- ❍ No (0)

If No Is Selected, Then Skip To End of Block

8) To what extent does your condition limit your ability to get around?

- ❍ Slightly limiting (1)
- ❍ Somewhat limiting (2)
- ❍ Very limiting (3)

Appendix B

Ryff Psychological Well-being Scale (RPWB) – Positive Relations with Others Subscale

Instructions: The following set of questions deal with how you feel about yourself and your life. Please remember that there are no right or wrong answers. Select the answer that best describes your present agreement or disagreement with each statement.

1) I don't have many people who want to listen when I need to talk.
- ❍ Agree Strongly (0)
- ❍ Agree Moderately (1)
- ❍ Agree Slightly (2)
- ❍ Disagree Slightly (3)
- ❍ Disagree Moderately (4)
- ❍ Disagree Strongly (5)

2) I enjoy personal and mutual conversations with family members and friends.
- ❍ Agree Strongly (5)
- ❍ Agree Moderately (4)
- ❍ Agree Slightly (3)
- ❍ Disagree Slightly (2)
- ❍ Disagree Moderately (1)
- ❍ Disagree Strongly (0)

3) I often feel lonely because I have few close friends with whom to share my concerns.
- ❍ Agree Strongly (0)
- ❍ Agree Moderately (1)
- ❍ Agree Slightly (2)
- ❍ Disagree Slightly (3)
- ❍ Disagree Moderately (4)
- ❍ Disagree Strongly (5)

4) It seems to me that most other people have more friends than I do.
- ❍ Agree Strongly (0)
- ❍ Agree Moderately (1)
- ❍ Agree Slightly (2)
- ❍ Disagree Slightly (3)
- ❍ Disagree Moderately (4)
- ❍ Disagree Strongly (5)

5) People would describe me as a giving person, willing to share my time with others.

- ❍ Agree Strongly (5)
- ❍ Agree Moderately (4)
- ❍ Agree Slightly (3)
- ❍ Disagree Slightly (2)
- ❍ Disagree Moderately (1)
- ❍ Disagree Strongly (0)

6) Most people see me as loving and affectionate.

- ❍ Agree Strongly (5)
- ❍ Agree Moderately (4)
- ❍ Agree Slightly (3)
- ❍ Disagree Slightly (2)
- ❍ Disagree Moderately (1)
- ❍ Disagree Strongly (0)

7) I know I can trust my friends and they know they can trust me.

- ❍ Agree Strongly (5)
- ❍ Agree Moderately (4)
- ❍ Agree Slightly (3)
- ❍ Disagree Slightly (2)
- ❍ Disagree Moderately (1)
- ❍ Disagree Strongly (0)

Appendix C

Ryff Psychological Well-being Scale (RPWB) – Purpose In Life Subscale

Instructions: The following set of questions deal with how you feel about yourself and your life. Please remember that there are no right or wrong answers. Select the answer that best describes your present agreement or disagreement with each statement.

1) I enjoy making plans for the future and working to make them a reality.
- ❍ Agree Strongly (5)
- ❍ Agree Moderately (4)
- ❍ Agree Slightly (3)
- ❍ Disagree Slightly (2)
- ❍ Disagree Moderately (1)
- ❍ Disagree Strongly (0)

2) My daily activities often seem trivial and unimportant to me.
- ❍ Agree Strongly (0)
- ❍ Agree Moderately (1)
- ❍ Agree Slightly (2)
- ❍ Disagree Slightly (3)
- ❍ Disagree Moderately (4)
- ❍ Disagree Strongly (5)

3) I am an active person in carrying out the plans I set for myself.
- ❍ Agree Strongly (5)
- ❍ Agree Moderately (4)
- ❍ Agree Slightly (3)
- ❍ Disagree Slightly (2)
- ❍ Disagree Moderately (1)
- ❍ Disagree Strongly (0)

4) I tend to focus on the present because the future nearly always brings me problems.
- ❍ Agree Strongly (0)
- ❍ Agree Moderately (1)
- ❍ Agree Slightly (2)
- ❍ Disagree Slightly (3)
- ❍ Disagree Moderately (4)
- ❍ Disagree Strongly (5)

5) I don't have a good sense of what it is I'm trying to accomplish in life.

- ❍ Agree Strongly (0)
- ❍ Agree Moderately (1)
- ❍ Agree Slightly (2)
- ❍ Disagree Slightly (3)
- ❍ Disagree Moderately (4)
- ❍ Disagree Strongly (5)

6) I sometimes feel as if I've done all there is to do in life.

- ❍ Agree Strongly (0)
- ❍ Agree Moderately (1)
- ❍ Agree Slightly (2)
- ❍ Disagree Slightly (3)
- ❍ Disagree Moderately (4)
- ❍ Disagree Strongly (5)

7) I used to set goals for myself but that now seems like a waste.

- ❍ Agree Strongly (0)
- ❍ Agree Moderately (1)
- ❍ Agree Slightly (2)
- ❍ Disagree Slightly (3)
- ❍ Disagree Moderately (4)
- ❍ Disagree Strongly (5)

Appendix D

Centers for Epidemiological Studies Depression Scale (CES-D)

Instructions: Below is a list of some of the ways you may have felt or behaved. Please indicate how often you have felt this way during the past week by checking the appropriate box for each question.

1) I was bothered by things that usually don't bother me.
- ❍ Rarely or none of the time (0)
- ❍ Some or a little of the time (1)
- ❍ Occasionally or a moderate amount of the time (2)
- ❍ All of the time (3)

2) I had trouble keeping my mind on what I was doing.
- ❍ Rarely or none of the time (0)
- ❍ Some or a little of the time (1)
- ❍ Occasionally or a moderate amount of the time (2)
- ❍ All of the time (3)

3) I felt depressed.
- ❍ Rarely or none of the time (0)
- ❍ Some or a little of the time (1)
- ❍ Occasionally or a moderate amount of the time (2)
- ❍ All of the time (3)

4) I felt that everything I did was an effort.
- ❍ Rarely or none of the time (0)
- ❍ Some or a little of the time (1)
- ❍ Occasionally or a moderate amount of the time (2)
- ❍ All of the time (3)

5) I felt hopeful about the future.
- ❍ Rarely or none of the time (3)
- ❍ Some or a little of the time (2)
- ❍ Occasionally or a moderate amount of the time (1)
- ❍ All of the time (0)

6) I felt fearful.
- ❍ Rarely or none of the time (0)
- ❍ Some or a little of the time (1)
- ❍ Occasionally or a moderate amount of the time (2)
- ❍ All of the time (3)

7) My sleep was restless.

- ❍ Rarely or none of the time (0)
- ❍ Some or a little of the time (1)
- ❍ Occasionally or a moderate amount of the time (2)
- ❍ All of the time (3)

8) I was happy.

- ❍ Rarely or none of the time (3)
- ❍ Some or a little of the time (2)
- ❍ Occasionally or a moderate amount of the time (1)
- ❍ All of the time (0)

9) I felt lonely.

- ❍ Rarely or none of the time (0)
- ❍ Some or a little of the time (1)
- ❍ Occasionally or a moderate amount of the time (2)
- ❍ All of the time (3)

10) I could not "get going".

- ❍ Rarely or none of the time (0)
- ❍ Some or a little of the time (1)
- ❍ Occasionally or a moderate amount of the time (2)
- ❍ All of the time (3)

Appendix E

Chronic Burden Scale

Instructions: Please indicate if each of the following stressors has happened over the past month and how much of a problem these events have been for you.

1) Not having enough money to cover the basic needs of life (e.g., food, clothing, housing).
- ❍ Not a problem for me in the last month (0)
- ❍ A little bit of a problem for me in the last month (1)
- ❍ Somewhat of a problem for me in the last month (2)
- ❍ A major problem for me in the last month (3)

2) Not having any savings to meet problems that come up.
- ❍ Not a problem for me in the last month (0)
- ❍ A little bit of a problem for me in the last month (1)
- ❍ Somewhat of a problem for me in the last month (2)
- ❍ A major problem for me in the last month (3)

3) Being a caregiver for someone (taking care of someone sick, elderly, infirmed)
- ❍ Not a problem for me in the last month (0)
- ❍ A little bit of a problem for me in the last month (1)
- ❍ Somewhat of a problem for me in the last month (2)
- ❍ A major problem for me in the last month (3)

4) Long term, unresolved conflict with someone very important to you (child, parents, lover/partner, sibling, friends).
- ❍ Not a problem for me in the last month (0)
- ❍ A little bit of a problem for me in the last month (1)
- ❍ Somewhat of a problem for me in the last month (2)
- ❍ A major problem for me in the last month (3)

5) Being fired or laid off.
- ❍ Not a problem for me in the last month (0)
- ❍ A little bit of a problem for me in the last month (1)
- ❍ Somewhat of a problem for me in the last month (2)
- ❍ A major problem for me in the last month (3)

6) Trouble with your employer (in danger of losing job, being suspended or demoted) or trouble at school (academic probation, in danger of being suspended/expelled).
- ❍ Not a problem for me in the last month (0)
- ❍ A little bit of a problem for me in the last month (1)
- ❍ Somewhat of a problem for me in the last month (2)
- ❍ A major problem for me in the last month (3)

7) Chronic pain or restriction of movements due to injury or illness.

- ❍ Not a problem for me in the last month (0)
- ❍ A little bit of a problem for me in the last month (1)
- ❍ Somewhat of a problem for me in the last month (2)
- ❍ A major problem for me in the last month (3)

8) Long-term medical problems.

- ❍ Not a problem for me in the last month (0)
- ❍ A little bit of a problem for me in the last month (1)
- ❍ Somewhat of a problem for me in the last month (2)
- ❍ A major problem for me in the last month (3)

Appendix F

Perceived Stress Scale (PSS)

Instructions: The questions in this scale ask you about your feelings and thoughts during the last month. In each case, you will be asked to indicate by circling how often you felt or thought a certain way.

1) In the last month, how often have you been upset because of something that happened unexpectedly?

- ❍ Never (0)
- ❍ Almost Never (1)
- ❍ Sometimes (2)
- ❍ Fairly Often (3)
- ❍ Very Often (4)

2) In the last month, how often have you felt that you were unable to control the important things in your life?

- ❍ Never (0)
- ❍ Almost Never (1)
- ❍ Sometimes (2)
- ❍ Fairly Often (3)
- ❍ Very Often (4)

3) In the last month, how often have you felt nervous and "stressed"?

- ❍ Never (0)
- ❍ Almost Never (1)
- ❍ Sometimes (2)
- ❍ Fairly Often (3)
- ❍ Very Often (4)

4) In the last month, how often have you felt confident about your ability to handle your personal problems?

- ❍ Never (4)
- ❍ Almost Never (3)
- ❍ Sometimes (2)
- ❍ Fairly Often (1)
- ❍ Very Often (0)

5) In the last month, how often have you felt that things were going your way?

- ❍ Never (4)
- ❍ Almost Never (3)
- ❍ Sometimes (2)
- ❍ Fairly Often (1)
- ❍ Very Often (0)

6) In the last month, how often have you found that you could not cope with all the things that you had to do?

- ❍ Never (0)
- ❍ Almost Never (1)
- ❍ Sometimes (2)
- ❍ Fairly Often (3)
- ❍ Very Often (4)

7) In the last month, how often have you been able to control irritations in your life?

- ❍ Never (4)
- ❍ Almost Never (3)
- ❍ Sometimes (2)
- ❍ Fairly Often (1)
- ❍ Very Often (0)

8) In the last month, how often have you felt that you were on top of things?

- ❍ Never (4)
- ❍ Almost Never (3)
- ❍ Sometimes (2)
- ❍ Fairly Often (1)
- ❍ Very Often (0)

9) In the last month, how often have you been angered because of things that were outside of your control?

- ❍ Never (4)
- ❍ Almost Never (3)
- ❍ Sometimes (2)
- ❍ Fairly Often (1)
- ❍ Very Often (0)

10) In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?

- ❍ Never (0)
- ❍ Almost Never (1)
- ❍ Sometimes (2)
- ❍ Fairly Often (3)
- ❍ Very Often (4)

Appendix G

Positive and Negative Affect Scale (PANAS)

Instructions: This scale consists of a number of words and phrases that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to that word. Indicate to what extent you have felt this way in general, that is, on the average.

1) Attentive
- ❍ Very slightly or not at all (0)
- ❍ A little (1)
- ❍ Moderately (2)
- ❍ Quite a bit (3)
- ❍ Very much (4)

2) Interested
- ❍ Very slightly or not at all (0)
- ❍ A little (1)
- ❍ Moderately (2)
- ❍ Quite a bit (3)
- ❍ Very much (4)

3) Alert
- ❍ Very slightly or not at all (0)
- ❍ A little (1)
- ❍ Moderately (2)
- ❍ Quite a bit (3)
- ❍ Very much (4)

4) Excited
- ❍ Very slightly or not at all (0)
- ❍ A little (1)
- ❍ Moderately (2)
- ❍ Quite a bit (3)
- ❍ Very much (4)

5) Enthusiastic
- ❍ Very slightly or not at all (0)
- ❍ A little (1)
- ❍ Moderately (2)
- ❍ Quite a bit (3)
- ❍ Very much (4)

6) Inspired

- ❍ Very slightly or not at all (0)
- ❍ A little (1)
- ❍ Moderately (2)
- ❍ Quite a bit (3)
- ❍ Very much (4)

7) Proud

- ❍ Very slightly or not at all (0)
- ❍ A little (1)
- ❍ Moderately (2)
- ❍ Quite a bit (3)
- ❍ Very much (4)

8) Determined

- ❍ Very slightly or not at all (0)
- ❍ A little (1)
- ❍ Moderately (2)
- ❍ Quite a bit (3)
- ❍ Very much (4)

9) Strong

- ❍ Very slightly or not at all (0)
- ❍ A little (1)
- ❍ Moderately (2)
- ❍ Quite a bit (3)
- ❍ Very much (4)

10) Active

- ❍ Very slightly or not at all (0)
- ❍ A little (1)
- ❍ Moderately (2)
- ❍ Quite a bit (3)
- ❍ Very much (4)

Appendix H

Religious Demographics Questionnaire

Instructions: The remaining questions will ask about your religious beliefs and practices.

1) Do you have spiritual beliefs and/or religious faith?
- ❍ Yes (1)
- ❍ No (0)

2) Do you believe in God?
- ❍ Yes (1)
- ❍ No (0)

3) To what extent do you consider yourself a religious person?
- ❍ Not religious at all (0)
- ❍ Slightly religious (1)
- ❍ Moderately religious (2)
- ❍ Very religious (3)

4) To what extent do you consider yourself a spiritual person?
- ❍ Not spiritual at all (0)
- ❍ Slightly spiritual (1)
- ❍ Moderately spiritual (2)
- ❍ Very spiritual (3)

5) Were you raised as a Christian?
- ❍ Yes (1)
- ❍ No (0)

6) What religious tradition do you currently identify with most?
- ❍ Atheism (i.e., certain that God/Higher Power does not exist) (1)
- ❍ Agnosticism (i.e., unsure whether or not there is a God/Higher Power) (2)
- ❍ Buddhism (3)
- ❍ Christianity (4)
- ❍ Hinduism (5)
- ❍ Islam (6)
- ❍ Judaism (7)
- ❍ Other (8) _____

If Christianity Is Not Selected, Then Skip To End of Survey

7) Which Christian denomination/tradition do you currently identify with most?

- ❍ Catholic (1)
- ❍ Orthodox (2)
- ❍ Mormon (3)
- ❍ Jehovah's Witness (4)
- ❍ Seventh Day Adventist (5)
- ❍ Traditional Protestant (e.g., Presbyterian, Baptist, Episcopalian, etc.) (6)
- ❍ Charismatic Protestant (Pentacostal, Apostalic) (7)
- ❍ Other (8) _____

8) Would you describe yourself as an evangelical/fundamentalist Christian?

- ❍ Yes (1)
- ❍ No (0)

9) Are you currently a member of a church or a Christian fellowship group?

- ❍ Yes (1)
- ❍ No (0)

10) Do you hold an official leadership position in your church (e.g., clergy, deacon, choir director, Sunday school teacher, etc.)?

- ❍ Yes (1)
- ❍ No (2)

11) About how much money do you tithe/offer to the church or religious organizations each year? Round to the nearest $100. For example, $150 would round to $200.

Enter Amount Here (1)

Appendix I

Multidimensional Christian Religiosity/Spirituality Inventory (MCRSI)

Instructions: The items in this inventory will ask a series of questions about your current spiritual beliefs and religious behaviors. Please answer as openly and honestly as you can. When answering questions, do not select answer choices that reflect what you think you should believe or how you think you should behave. Please select answer choices that accurately and truthfully represent your current beliefs and behaviors.

1) The way I view the world is based on my faith

- ❍ Disagree Strongly (0)
- ❍ Disagree Moderately (1)
- ❍ Disagree Slightly (2)
- ❍ Agree Slightly (3)
- ❍ Agree Moderately (4)
- ❍ Agree Strongly (5)

2) My values are derived from my faith

- ❍ Disagree Strongly (0)
- ❍ Disagree Moderately (1)
- ❍ Disagree Slightly (2)
- ❍ Agree Slightly (3)
- ❍ Agree Moderately (4)
- ❍ Agree Strongly (5)

3) My faith is not an important part of my identity

- ❍ Disagree Strongly (5)
- ❍ Disagree Moderately (4)
- ❍ Disagree Slightly (3)
- ❍ Agree Slightly (2)
- ❍ Agree Moderately (1)
- ❍ Agree Strongly (0)

4) Most people know me as a person who is serious about my faith

- ❍ Disagree Strongly (0)
- ❍ Disagree Moderately (1)
- ❍ Disagree Slightly (2)
- ❍ Agree Slightly (3)
- ❍ Agree Moderately (4)
- ❍ Agree Strongly (5)

5) I follow my faith because I believe in its values and principles

- ❍ Disagree Strongly (0)
- ❍ Disagree Moderately (1)
- ❍ Disagree Slightly (2)
- ❍ Agree Slightly (3)
- ❍ Agree Moderately (4)
- ❍ Agree Strongly (5)

6) I follow my faith because I love God

- ❍ Disagree Strongly (0)
- ❍ Disagree Moderately (1)
- ❍ Disagree Slightly (2)
- ❍ Agree Slightly (3)
- ❍ Agree Moderately (4)
- ❍ Agree Strongly (5)

7) Because of my faith, I forgive myself for things I have done wrong

- ❍ Disagree Strongly (0)
- ❍ Disagree Moderately (1)
- ❍ Disagree Slightly (2)
- ❍ Agree Slightly (3)
- ❍ Agree Moderately (4)
- ❍ Agree Strongly (5)

8) Because of my faith, I forgive those who hurt me

- ❍ Disagree Strongly (0)
- ❍ Disagree Moderately (1)
- ❍ Disagree Slightly (2)
- ❍ Agree Slightly (3)
- ❍ Agree Moderately (4)
- ❍ Agree Strongly (5)

9) I know that God forgives me

- ❍ Disagree Strongly (0)
- ❍ Disagree Moderately (1)
- ❍ Disagree Slightly (2)
- ❍ Agree Slightly (3)
- ❍ Agree Moderately (4)
- ❍ Agree Strongly (5)

10) I believe in an afterlife

- ❍ Disagree Strongly (0)
- ❍ Disagree Moderately (1)
- ❍ Disagree Slightly (2)
- ❍ Agree Slightly (3)
- ❍ Agree Moderately (4)
- ❍ Agree Strongly (5)

11) I believe that I will go to heaven when I die

- ❍ Disagree Strongly (0)
- ❍ Disagree Moderately (1)
- ❍ Disagree Slightly (2)
- ❍ Agree Slightly (3)
- ❍ Agree Moderately (4)
- ❍ Agree Strongly (5)

12) I have a personal relationship with God

- ❍ Disagree Strongly (0)
- ❍ Disagree Moderately (1)
- ❍ Disagree Slightly (2)
- ❍ Agree Slightly (3)
- ❍ Agree Moderately (4)
- ❍ Agree Strongly (5)

13) God is a father-figure to me

- ❍ Disagree Strongly (0)
- ❍ Disagree Moderately (1)
- ❍ Disagree Slightly (2)
- ❍ Agree Slightly (3)
- ❍ Agree Moderately (4)
- ❍ Agree Strongly (5)

14) I am helpless without God

- ❍ Disagree Strongly (0)
- ❍ Disagree Moderately (1)
- ❍ Disagree Slightly (2)
- ❍ Agree Slightly (3)
- ❍ Agree Moderately (4)
- ❍ Agree Strongly (5)

15) My future is in God's hands

- ❍ Disagree Strongly (0)
- ❍ Disagree Moderately (1)
- ❍ Disagree Slightly (2)
- ❍ Agree Slightly (3)
- ❍ Agree Moderately (4)
- ❍ Agree Strongly (5)

16) God created me for a purpose

- ❍ Disagree Strongly (0)
- ❍ Disagree Moderately (1)
- ❍ Disagree Slightly (2)
- ❍ Agree Slightly (3)
- ❍ Agree Moderately (4)
- ❍ Agree Strongly (5)

17) I don't find meaning in life through my faith

- ❍ Disagree Strongly (5)
- ❍ Disagree Moderately (4)
- ❍ Disagree Slightly (3)
- ❍ Agree Slightly (2)
- ❍ Agree Moderately (1)
- ❍ Agree Strongly (0)

18) God has the power to positively affect my health (e.g., cure illness, protect from sickness)

- ❍ Disagree Strongly (0)
- ❍ Disagree Moderately (1)
- ❍ Disagree Slightly (2)
- ❍ Agree Slightly (3)
- ❍ Agree Moderately (4)
- ❍ Agree Strongly (5)

19) God is not concerned about my physical health

- ❍ Disagree Strongly (5)
- ❍ Disagree Moderately (4)
- ❍ Disagree Slightly (3)
- ❍ Agree Slightly (2)
- ❍ Agree Moderately (1)
- ❍ Agree Strongly (0)

20) I believe that God has positively affected my health in the past

- ❍ Disagree Strongly (0)
- ❍ Disagree Moderately (1)
- ❍ Disagree Slightly (2)
- ❍ Agree Slightly (3)
- ❍ Agree Moderately (4)
- ❍ Agree Strongly (5)

21) Because of my faith, I love other people as much as I love myself

- ❍ Disagree Strongly (0)
- ❍ Disagree Moderately (1)
- ❍ Disagree Slightly (2)
- ❍ Agree Slightly (3)
- ❍ Agree Moderately (4)
- ❍ Agree Strongly (5)

22) I love God above all else

- ❍ Disagree Strongly (0)
- ❍ Disagree Moderately (1)
- ❍ Disagree Slightly (2)
- ❍ Agree Slightly (3)
- ❍ Agree Moderately (4)
- ❍ Agree Strongly (5)

23) Because of my faith, I frequently help others in whatever way I can

- ❍ Disagree Strongly (0)
- ❍ Disagree Moderately (1)
- ❍ Disagree Slightly (2)
- ❍ Agree Slightly (3)
- ❍ Agree Moderately (4)
- ❍ Agree Strongly (5)

Over the past 3 months, how often have you engaged in the following religious activities...

24) Prayer

- ❍ Never (0)
- ❍ Less than once a month (1)
- ❍ 1 - 3 times a month (2)
- ❍ Once a week (3)
- ❍ 2 -3 times a week (4)
- ❍ Once a day or more (5)

25) Read holy texts (e.g., Bible)

- ❍ Never (0)
- ❍ Less than once a month (1)
- ❍ 1 - 3 times a month (2)
- ❍ Once a week (3)
- ❍ 2 -3 times a week (4)
- ❍ Once a day or more (5)

26) Attended worship services at church

- ❍ Never (0)
- ❍ Less than once a month (1)
- ❍ 1 - 3 times a month (2)
- ❍ Once a week (3)
- ❍ 2 -3 times a week (4)
- ❍ Once a day or more (5)

27) Participated in religiously based/motivated charitable activities

- ❍ Never (0)
- ❍ Less than once a month (1)
- ❍ 1 - 3 times a month (2)
- ❍ Once a week (3)
- ❍ 2 -3 times a week (4)
- ❍ Once a day or more (5)

28) Participated in small group activities (e.g., Bible study, prayer group, etc.)

- ❍ Never (0)
- ❍ Less than once a month (1)
- ❍ 1 - 3 times a month (2)
- ❍ Once a week (3)
- ❍ 2 -3 times a week (4)
- ❍ Once a day or more (5)

29) Participated in official church responsibilities (e.g., singing in the choir, ushering, preaching, leading a church ministry/service, participating in a church board meeting, etc.)

- ❍ Never (0)
- ❍ Less than once a month (1)
- ❍ 1 - 3 times a month (2)
- ❍ Once a week (3)
- ❍ 2 -3 times a week (4)
- ❍ Once a day or more (5)

Appendix J

Brief R-COPE

Instructions: For the scale below, 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?

1) I think about how my life is part of a larger spiritual force.

- ❍ Not at all (0)
- ❍ Somewhat (1)
- ❍ Quite a bit (2)
- ❍ A great deal (3)

2) I work together with God as partners.

- ❍ Not at all (0)
- ❍ Somewhat (1)
- ❍ Quite a bit (2)
- ❍ A great deal (3)

3) I look to God for strength, support, guidance

- ❍ Not at all (0)
- ❍ Somewhat (1)
- ❍ Quite a bit (2)
- ❍ A great deal (3)

Appendix K

Religious Social Support

Instructions: For the following items, the word "congregation" refers to the local church or Christian fellowship group that you attend most regularly. Select the answer choice that is most true for you. Please select N/A if you don't have a regular church or fellowship group that you attend.

1) If I had a problem, the people in my congregation would provide spiritual or emotional support (e.g., prayer, religious counseling, etc.).

- ❍ Disagree Strongly (0)
- ❍ Disagree Moderately (1)
- ❍ Disagree Slightly (2)
- ❍ Agree Slightly (3)
- ❍ Agree Moderately (4)
- ❍ Agree Strongly (5)
- ❍ N/A (7)

2) If I had a problem, the people in my congregation would provide material support (e.g., service, gifts, financial assistance, etc.)

- ❍ Disagree Strongly (0)
- ❍ Disagree Moderately (1)
- ❍ Disagree Slightly (2)
- ❍ Agree Slightly (3)
- ❍ Agree Moderately (4)
- ❍ Agree Strongly (5)
- ❍ N/A (7)

3) If I knew that a member of my congregation was facing a difficult situation, I would provide them with comfort or support.

- ❍ Disagree Strongly (0)
- ❍ Disagree Moderately (1)
- ❍ Disagree Slightly (2)
- ❍ Agree Slightly (3)
- ❍ Agree Moderately (4)
- ❍ Agree Strongly (5)
- ❍ N/A (7)

Appendix L

Peer Group Salience of Religiosity/Spirituality

Instructions: The following items ask about the percentage of people in your life who are Christian. Please select the best answer choice.

1) How many of your close friends are Christian?

- ❍ None or a few (0)
- ❍ Somewhat less than half (1)
- ❍ About half (2)
- ❍ Somewhat more than half (3)
- ❍ All or most (4)

2) How many people in your family are Christian?

- ❍ None or a few (0)
- ❍ Somewhat less than half (1)
- ❍ About half (2)
- ❍ Somewhat more than half (3)
- ❍ All or most (4)

3) Of the 10 people you interact with most regularly, how many do you think are Christian?

- ❍ None or a few (0)
- ❍ Somewhat less than half (1)
- ❍ About half (2)
- ❍ Somewhat more than half (3)
- ❍ All or most (4)

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