Published in final edited form as:

Am J Health Behav. 2014 March ; 38(2): 190–199. doi:10.5993/AJHB.38.2.4.

Religion and Health in African Americans: The Role of Religious Coping

Cheryl L. Holt, PhD, FAAHB,

Associate Professor, University of Maryland, School of Public Health, Department of Behavioral and Community Health, College Park, MD

Eddie M. Clark, PhD,

Professor, Saint Louis University, Department of Psychology, Saint Louis, MO

Katrina J. Debnam, PhD, MPH, and

Faculty Research Associate, Johns Hopkins Bloomberg School of Public Health, Department of Mental Health, Baltimore, MD

David L. Roth, PhD

Director, Johns Hopkins University, Center on Aging and Health, Baltimore, MD

Abstract

Objectives—To test a model of the religion-health connection to determine whether religious coping plays a mediating role in health behaviors in a national sample of African Americans.

Methods—Participants completed a telephone survey (N = 2370) assessing religious involvement, religious coping, health behaviors, and demographics.

Results—Religious beliefs were associated with greater vegetable consumption, which may be due to the role of positive and negative religious coping. Negative religious coping played a role in the relationship between religious beliefs and alcohol consumption. There was no evidence of mediation for fruit consumption, alcohol use in the past 30 days, or smoking.

Conclusions—Findings have implications for theory and health promotion activities for African Americans.

Keywords

religion; religious coping; African Americans; health behaviors; mediation

A growing body of research on the relationship between religious involvement and health has provided evidence for a generally positive role in health-related outcomes.^{1,2} Research has moved from the accumulation of additional evidence for the religion-health connection, to trying to explain why it exists. Religious involvement is conceptualized as “an organized system of [religious] beliefs, practices, rituals, and symbols.”^{3(p. 415)} Some segments of the

Correspondence Dr Holt; cholt14@umd.edu.

Conflict of Interest Statement

Nothing to report.

US population tend to be more religiously involved than others, for example, African Americans and women.^{4,5} The study of religious involvement and health among African Americans is particularly important because this group is disproportionately impacted by health conditions,⁶ an area termed health disparities or health inequities.

Religious Coping

Research has demonstrated an increased interest in the role of religious coping in explaining the relationship between religious involvement and health. Religious coping is defined as “the use of religious beliefs or behaviors to facilitate problem-solving to prevent or alleviate the negative emotional consequences of stressful life circumstances.”^{7(p. 513)} When confronted with life stressors, many people may use religious beliefs and practices for help in overcoming adversity.⁸ According to Pargament,⁹ religious involvement is associated with greater use of religious coping, especially positive religious coping.

Researchers have recognized religious coping as a multidimensional construct. Pargament et al¹⁰ propose a positive and negative religious coping framework. Positive religious coping methods include working with a higher power (eg, God) to cope with stressors and seeking the higher power out for guidance, otherwise known as collaborative religious coping. A review of published studies related to religious coping and psychological adjustment¹¹ demonstrates a moderate positive relationship between positive religious coping and stress-related growth, spiritual growth, positive affect, and higher self-esteem. In contrast, negative religious coping methods may have a detrimental impact on health outcomes. These religious coping methods are characterized by beliefs that God is using stressors as punishment for sins, or that the stressor is an act of the Devil.¹²

Though much of the research on religious coping has focused on mental health, several studies have examined its relationship with physical health outcomes. Religiosity can provide comfort during periods of stress,⁹ which if handled with positive religious coping, should have a positive impact on health behaviors (eg, diet, alcohol/tobacco), but if handled with negative religious coping, should have a negative impact on health behaviors. Positive religious coping was associated with better physical health outcomes (see reviews by George et al¹³ and Koenig et al¹). Similarly, negative religious coping has been associated with increased mortality.¹⁴

Religious Coping as a Religion-health Mediator

Religious coping is proposed as a potential mechanism through which religious involvement has an impact on health-related outcomes. A review of religion and health research noted that relative to non-Hispanic Whites, little research on religion and health has focused on African Americans.¹⁵ This is unfortunate because African Americans tend to have high levels of religious involvement and to experience a disproportionate burden of health conditions and illness. The religious coping aspect of the review also noted that research on this particular mechanism had given little attention to African Americans. One exception reported that collaborative religious coping was associated with lower blood pressure among African Americans but not among Whites.¹⁶ In a sample of African American men and women diagnosed with cancer, positive and negative religious coping were examined as

potential mediators of the relationship between religious beliefs/behaviors and physical and emotional functioning.¹⁷ Whereas no evidence for mediation was detected in this sample, negative religious coping was associated with poorer emotional functioning. These studies illustrate the role of religious coping in physical health-related outcomes among African Americans.

The Present Study

The purpose of the present study was to test a theoretical model of the religion-health connection, specifically focusing on the mediator of religious coping, to determine whether this construct plays a mediating role in a variety of health behaviors in a national sample of African Americans. Previous research suggests that although religious coping has been proposed as a religion-health mediator, there has been little empirical research testing its mediational role in the context of physical health-related outcomes, and even less among African Americans. Health behaviors such as tobacco use, alcohol use, and diet are potentially related to stress, are the basis for much of chronic disease, and have been the target of intervention efforts. Religious coping is an important function of religious involvement, in the context of health. Learning more about if and how religious coping plays a role in health behaviors related to chronic disease has the potential to inform community- and faith-based interventions that serve African-American communities.

It is recognized that religious involvement is multidimensional in nature.¹⁸ However there is little guidance in theory or literature as to whether the private/belief aspects or public/behavioral aspects of religious involvement would be: (1) associated with religious coping; and (2) engaged in a meditational relationship with religious coping and health-related outcomes. It was hypothesized that: (1) religious beliefs and behaviors would be positively associated with positive religious coping, and negatively associated with negative religious coping; (2) religious beliefs and behaviors would be associated with more healthy behaviors (eg, more fruit and vegetable consumption, less alcohol use and smoking); (3) whereas positive religious coping would be associated with more healthy behaviors, negative religious coping would be associated with less healthy behaviors; (4) positive religious coping would play a positive mediational role in the relationships between religious beliefs/behaviors and the health behavior outcomes; and (5) negative religious coping would play a negative mediational role in the relationships between religious beliefs/behaviors and the health behavior outcomes.

METHOD

Telephone Survey Methods

The Religion and Health in African Americans (RHIAA) study is a national survey designed to test a theoretical model of the religion-health connection, comprised of a series of mechanisms. Religious coping is examined in the present analysis, which is part of a larger theory-testing initiative being conducted in the overall RHIAA study. The RHIAA data collection methods were reported previously.¹⁹ Using probability-based methods, a professional sampling firm generated a call list of households from all 50 United States, drawing from publicly available data such as motor vehicle records. Professional

interviewers dialed telephone numbers from this call list. When the interviewers identified an adult who lived at the household being contacted, they introduced the project. The project was described as a study of “health and wellness in the African-American community,” so as not to be immediately rejected by individuals who do not identify as religious or spiritual. If the contact expressed interest, a brief eligibility screener was administered to determine whether they self-identified as African American and age 21 or older. Interested and eligible contacts heard an informed consent script and provided verbal assent. Eligible individuals were African Americans, age 21 and older, who had no cancer history. Cancer diagnosis was an exclusion criterion due to collection of screening data for other RHIAA study analyses. Upon completion of the 45-minute interview, participants were mailed a \$25 gift card.

Measures

Religious involvement—An established Religiosity Scale previously validated with African Americans was used to assess religious beliefs (eg, “I feel the presence of God in my life.”; “I have a close personal relationship with God.”) and behaviors (eg, church service attendance, involvement in other church activities; “I talk openly about my faith with others.”; “I often read religious books, magazines, or pamphlets”).^{20,21} The 9 items are assessed in 5-point Likert-type format, with the exception of 2 monthly service attendance items assessed in 3-point format (0; 1–3; 4+). Scores range from 4–20 for beliefs and 5–21 for behaviors, with higher scores indicating higher religious involvement. Internal reliability of the beliefs ($\alpha = .89$) and behaviors ($\alpha = .73$) subscales was reasonable to high in the present sample.

Religious coping—The Brief RCOPE is widely used to assess religious coping (NIA working group).²² This instrument uses 3 items to assesses each positive (eg, “I work together with God as partners to get through hard times.”) and negative (eg, “I wonder whether God has abandoned me.”) religious coping, with items assessed in 4-point format (“not at all...a great deal”). The 3 items that loaded most high on their respective factors were selected to create this short form, for a total of 6 items (NIA working group).²² Previous psychometric studies have indicated that the Brief RCOPE yields 2 factors, with high internal consistency, and evidence of discriminant and criterion-related validity.¹⁰ The reliability for the Brief RCOPE was also reasonable in the present sample, given its brevity²³ ($\alpha = .75$ for positive religious coping; $\alpha = .52$ for negative religious coping).

Health behaviors—To assess fruit and vegetable consumption, an adaptation of the National Cancer Institute’s 5-A-Day Survey was used.²⁴ This instrument was validated with the study population.²⁵ It consists of 7 items that assess fruit consumption and 5 that assess vegetable consumption (eg, In a typical week, about how many times do you have...a piece of fresh fruit, like an apple, orange, banana, or pear). Fifteen different fruits and 18 vegetables are assessed specifically within these items, and “other fruit” and “other vegetable” items are included as well. The response scale varies from 0 to 8 or more servings per week. Consumption is assessed by asking participants to think about a typical week, and servings per day can be computed by summing all items and dividing by 7. The test-retest reliability over a 2-week period (intraclass correlation coefficient) for the both the fruit ($r = .52$, $p < .001$) and the vegetable ($r = .60$, $p < .001$) portions were adequate.²⁵

Alcohol and tobacco use were assessed using the appropriate modules from the Behavioral Risk Factor Surveillance System (BRFSS). This is an established interview, administered nationally, that has been tested and is appropriate for the study population. It has demonstrated adequate test-retest reliability over a 21-day period in a sample of African Americans.²⁶ The module on alcohol consumption included an initial question on any alcohol use in the preceding 30 days. For those who answered “yes,” additional items assessed binge and other heavy drinking (“Considering all types of alcoholic beverages, how many times during the past 30 days did you have 4/5 or more drinks on an occasion?”; “During the past 30 days, what is the largest number of drinks you had on any occasion?”). The tobacco use item assessed whether the individual smoked cigarettes every day, some days, or not at all.

Demographics—A standard demographic module assessed participant characteristics including sex, age, relationship status, educational attainment, work status, and household income before taxes.

Statistical Methods

Analyses reported here were conducted using maximum likelihood estimation methods and were performed using Mplus (version 6.1).²⁷ A modification of the traditional 2-step approach²⁸ was used where confirmatory factor analysis models were run first that specified the observed items to be indicators of underlying latent constructs. Second, structural models were run testing the significance of the mediated and unmediated effects of religious involvement on the health behavior outcomes. In the confirmatory factor analysis measurement models, fit statistics were evaluated and correlated measurement residuals were considered between indicators within factors in accord with modification indices to obtain measurement models with adequate fit. The root mean square error of approximation (RMSEA) was the primary fit criterion, with an RMSEA of 0.05 or less an indication of excellent fit.

Figure 1 illustrates the general depiction of the structural models. The positive and negative religious coping mediators were examined in relation to 6 different outcome variables (fruit servings per day, vegetable servings per day, drinking behavior (yes/no), largest number of drinks, number of binge drinking days, and current smoking status). The analyses for the largest number of drinks and number of binge drinking days were run on the subset of participants who reported some alcohol use. In all models, 4 exogenous covariates – age, sex, education, and self-rated health status – were included as predictors of the religious involvement factors, mediating factor, and health behavior outcome variable. The standardized estimates from these models relevant to the mediated or indirect ($a*b$) and unmediated or direct (c paths) effects were tested for statistical significance. These standardized estimates also constituted effect size measures that were compared across outcome measures to aid in the interpretation and integration of the findings across analyses.

RESULTS

A total of 12,418 individuals were asked to participate, and 2370 agreed to do so. The overall response rate is calculated as accepted/[accepted + non-interviewed], which is 19%.

Of those contacted who did not participate (N = 10,048), 8240 refused prior to a determination of eligibility, 1658 were not eligible (81 were under age 21, 444 did not provide an age for screening purposes, 878 were not African American, 224 reported a history of cancer, and 5 refused to respond to the cancer history question). Twenty-six individuals were not capable of participating in the telephone interview. Only 150 were eligible but refused to participate, making for an upper bound response rate of 94% (2370/2520). Table 1 provides a description of the study sample.

Relative to the US black population, the current sample was older than the US median age of 32.7 years (current median = 54.0); contains fewer men (current = 38.2%; US = 47.7% male); was more educated (current % attended 4+ years of college = 26%; US = 18.4%);²⁹ and was as likely to report attending religious services at least once per week (current = 50.6%; US = 53%).³⁰ The sample was comparable to other African Americans³¹ in alcohol use and smoking (Table 2). Our participants were relatively high in religious involvement, as evidenced by their scores on the religious behaviors and beliefs subscales (Table 2). Scores on the positive religious coping subscale were considerably higher than those on the negative religious coping subscale (Table 2).

Measurement models

The results of the 2-factor measurement model (beliefs and behaviors) for religious involvement items have already been published for this sample.²¹ After allowing for 2 correlated residuals – one between the first 2 items that both load on the religious beliefs factor and both reflect the concept of closeness with God, and one for 2 consecutive items that both load on the religious behaviors factor and both reflect attendance at religious services – excellent fit was observed for the religious involvement measurement model ($\chi^2 = 138.57$, $df = 24$, $RMSEA = .045$).²¹

This religious involvement measurement model was then expanded by adding items and factors for the religious coping model. The 3 positive religious coping items formed one factor and the 3 negative religious coping items formed another. Together with the 2-factor religious involvement model (beliefs and behaviors), this overall measurement model provided a reasonable fit to the data ($\chi^2 = 785.27$, $df = 126$, $RMSEA = .05$, comparative fit index [CFI] = .95, Tucker Lewis Index [TLI] = .94). All items had reasonable and significant loadings on the appropriate factors. No additional modifications were considered.

Structural models

Table 2 summarizes the effects of the 2 religious involvement factors on the mediating latent variable of religious coping and the 6 health behavior outcome variables. Standardized estimates are reported before and after accounting for the demographic covariates (age, sex, education, self-rated health) and the other religious involvement factor. When available, comparison data are provided for the health behavior variables from the BRFSS 2010 sample.³¹ Table 3 reports findings of the structural equation models that were conducted to test the mediation hypotheses. The standardized path estimates in Table 3 for the a, b, and c paths correspond to those effects shown in Figure 1 for each mediator and each health behavior analyzed separately. Table 3 also reports the overall RMSEA from each model

after including the outcome variable and the 4 exogenous covariates. Because the a_{12} , a_{11} and a_{21} and a_{22} paths represent the effects of religious beliefs and religious behaviors, respectively, on the mediator, these estimates are consistent and change little from one health behavior outcome to another within a certain mediator variable. Regarding these “a” paths, religious beliefs were associated with higher levels of positive religious coping, and lower levels of negative religious coping ($p < .001$). Religious behaviors were associated with more positive religious coping ($p < .001$) but the association with negative religious coping was not significant.

The results reported for the “c” paths are similar to the unmediated effects previously reported for this sample.¹⁹ Religious beliefs were negatively associated with fruit consumption ($p < .001$). These patterns are indicative of a suppressor effect,^{32,33} caused by the high correlation between religious beliefs and behaviors. Religious beliefs were associated with greater likelihood of alcohol use in the past 30 days, whereas religious behaviors were associated with lower likelihood. Days of 4 or 5 alcoholic drink consumption and largest number of drinks showed no association with religious beliefs, and a negative association with religious behaviors. Finally, smoking status was positively associated with religious beliefs and negatively associated with religious behaviors. These patterns of opposite direction of associations are likely due to the suppressor effect.

With regard to the “b” paths, which are the relationship between the mediators and the health behavior outcomes, these were not significant for fruit consumption, but for vegetable consumption positive religious coping was associated with more consumption, whereas negative religious coping was associated with less consumption ($p < .001$; $p < .05$, respectively). For alcohol use in the past 30 days, the paths were not significant. Negative religious coping was associated with more days of 4 or 5+ drinks consumed and largest number of drinks on any drinking day, whereas positive religious coping was not associated. Positive and negative religious coping were not associated with smoking status.

The mediation analysis suggested that there was no evidence for mediation in the fruit consumption model, but both positive and negative religious coping mediated the relationship between religious beliefs and vegetable consumption. In addition, positive religious coping mediated the relationship between religious behaviors and vegetable consumption. In the alcohol consumption in the past 30 days model, there was no evidence of mediation. However, negative religious coping mediated the relationship between religious beliefs and days of 4 or 5+ alcoholic drinks consumed. The same was true in the largest number of drinks model. Finally, there was no evidence of mediation in the smoking status model.

DISCUSSION

This study examined the role of religious coping as a mediator of the relationship between religious involvement and health behaviors among African-American adults. Because previous research had produced mixed findings and mainly focused on mental health-related outcomes, the current emphasis on modifiable health behaviors contributes uniquely to the current research on *why* the religion-health connection exists. The focus on African

Americans, in the face of health disparities or inequities, enhances the public health significance of the study. Findings will be discussed starting with the “a” paths from religious involvement to the mediators, then the direct “c” paths from religious involvement to the outcomes, then the mediation “b” paths, as shown in Figure 1.

Religious Involvement and the Mediators

These analyses examined Hypothesis 1, which was supported. Individuals high in religious beliefs tended to report high levels of positive and low levels of negative religious coping. Such a finding would be expected, as positive religious coping involves partnering with God and looking to God for strength and support, in the adaptive and collaborative style described by Pargament et al.¹² However, negative religious coping involves negative religious beliefs like abandonment by God and feeling that God has punished a person for sin or lack of belief, which has more recently been referred to as “spiritual struggle.”³⁴ Spiritual struggle beliefs also appear to be less prevalent than positive religious coping beliefs. In contrast, Ai et al.³⁵ reported that negative religious coping was not associated with religiousness. The current study analyzed religious involvement as containing multiple factors, and illustrates the importance of modeling religious involvement as a multidimensional construct.¹⁸

Those high in religious behaviors also reported high levels of positive religious coping, and low levels of negative religious coping in the unadjusted analyses. However, when controlling for religious beliefs, the relationship between religious behaviors and negative religious coping becomes non-significant. Perhaps this is because the religious coping constructs reflect religious beliefs, and the variance is taken up by the relationship with religious beliefs in the controlled model. Negative religious coping beliefs are controversial, and even asking survey questions in this content area can make survey participants, particularly in this demographic, uncomfortable.³⁶ The field is still learning how to assess spiritual struggle beliefs and what they mean. Participants often will indicate that they have heard about such beliefs from “others” but they themselves do not endorse such ideas. Related to negative religious coping and spiritual struggle is the concept of anger toward God. This idea was found to be expressed in response to negative life events, and more likely to be reported among younger people and those who are less religious.³⁷ Anger toward God was also less likely to be expressed among African Americans relative to other groups. Anger toward God was associated with poorer adjustment to bereavement, and having a diagnosis of cancer.³⁷

Religious Involvement and Health Behaviors

Unadjusted and covariate adjusted analyses indicated that religious involvement, particularly the religious behaviors construct, was related to health behaviors. As previously reported,¹⁹ these findings generally support Hypothesis 2 and are consistent with expectations about a protective or salutary effect of religious involvement on health.¹ The direct effects from the mediation models indicate that religious behaviors are directly associated with greater fruit and vegetable consumption and lower likelihood of alcohol consumption in the past 30 days, lower days of binge drinking (days of 4/5 or more drink consumption), and lower rates of smoking after accounting for the coping mediating factors. This finding is consistent with

previous research suggesting that religious involvement is associated with higher fruit and vegetable consumption.³⁸ With regard to drinking, involvement in a religious community may be protective against alcohol consumption due to religious sanctions.^{39,40}

The direct paths indicate that religious beliefs, after accounting for the effects of religious behaviors and the inconsistent mediation effects, were associated with lower fruit and vegetable consumption, higher likelihood of alcohol consumption in the past 30 days, and higher rates of smoking. Although there was no association between religious behaviors and the heavy drinking outcomes (days of 4/5 or more drinks and largest number of drinks on any drinking day), this may be due to attenuated statistical power due to analysis restricted to the sub-sample of only those who indicated they drank in the past 30 days. Though the direct path relationships for religious behaviors are counterintuitive, they are also indicative of the aforementioned suppressor effect. The relationships illustrated in the unadjusted analyses (Table 2) show effects in the anticipated directions, consistent with predictions.

Mediators and Health Behaviors

Some interesting patterns emerged with regard to relationships between religious coping and the health behavior outcomes. In general, it was expected that positive religious coping would be associated with positive or adaptive health behaviors and negative religious coping would be associated with maladaptive or unhealthy behaviors. For example, Pargament et al.¹⁰ found that positive religious coping (ie, collaborative religious coping) was significantly correlated with physical health in a college-aged sample. In some cases, this was consistent with the current findings, specifically the positive associations with vegetable consumption. However, the same was not true for fruit consumption. In general, there was mixed support for Hypothesis 3. Such personal religious convictions as religious coping beliefs may be related to a type of behavior that people associate with health consciousness (eg, “eat your vegetables”). Fruit consumption may not cross the same threshold, and because fruits typically are not associated with the same taste and preparation barriers⁴¹ as vegetables, this behavior may not be as strongly linked with deeply held beliefs. Similarly, negative religious coping was associated with more heavy drinking but not with alcohol consumption in the past 30 days (yes/no). However, the same pattern was not evidenced for smoking. Smoking was analyzed as a binary variable (smoker; non-smoker). Perhaps negative religious coping beliefs are associated with engaging in these behaviors heavily as opposed to at all.

Mediational Findings

Analyses that examined Hypotheses 4 and 5 revealed mixed support for the mediational role of religious coping. Both positive and negative religious coping mediated the relationship between religious beliefs and vegetable consumption. This suggests that the relationship between religious beliefs and eating more vegetables was accounted for, at least in part, by positive and negative religious coping. It is noteworthy that mediation occurred more frequently for religious beliefs than for behaviors. With regard to mediation, it appears that religious beliefs, such as having a close personal relationship with God, and the religious coping beliefs, play a more important role in the associations with these health behavior outcomes than does the religious participation or behavior factor. However, when it comes

to the direct effects, religious behaviors did have robust associations with the health behavior outcomes. This suggests that both religious beliefs and behaviors play important roles in these outcomes, but perhaps in different ways.

Although there was no mediation for consumption of alcoholic beverages in the past 30 days, there was evidence for one heavy drinking outcome. As discussed previously, only negative religious coping served as a mediator between religious beliefs and the outcome. This again points to the importance of deeply held religious beliefs, in this case, in the negative. In sum, people who hold strong religious beliefs such as a close personal relationship with God, are less likely to engage in negative religious coping, but those who do engage in negative religious coping tend to display more heavy drinking behavior. Stated differently, holding strong religious beliefs reduces negative coping, which is positively associated with heavy drinking. Because religious beliefs reduce negative coping, holding these beliefs indirectly reduces heavy drinking.

Fabricatore et al⁴² found that collaborative (positive) religious coping mediated the relationship between religiousness and well-being and distress, but the same was not found for deferring (similar to negative) religious coping. This is a notable difference from the present study, but may be due to a difference in measurement. It was previously reported that religious struggle was related to alcohol use.⁴³ These findings are more similar to the present, highlighting the role of negative religious coping.

Limitations

Limitations restrict generalization of study findings. First, there is response bias inherent with the use of telephone survey methods. We estimated and reported the nature of this bias using a comparison to national data. Those who responded are likely to be older, female, and more educated, but importantly they are just as likely to attend religious services at least once per week. A more robust account of the mediational roles of religious coping might be determined if a more representative sample was obtained.

Second, this analysis was limited to the mediator of religious coping. There are certainly other factors such as social support and healthy lifestyle in accord with religious proscriptions, which may also account for the relationship between religious involvement and health outcomes. Because the relationships between these constructs are complex, interpret as constructs are added. The current analytical approach aimed for a clear understanding of fewer mediators, as opposed to a more inclusive but incomprehensible model. Third, the present data were cross-sectional, and therefore, conclusions about causality are inappropriate. There is the potential for reverse-causality, in which individuals who are more religiously involved are healthier; or, individuals who engage in unhealthy behaviors are more likely to hold negative religious coping beliefs, and may, in turn, disengage from religious participation. However, the analyses were controlled for self-rated health status. Longitudinal data would strengthen causal assumptions, and the RHIAA team is currently beginning such an initiative. Another avenue for future research would be to investigate the role of denominational factors in these mediational models.

Implications and Future Research

The current findings suggest that religious beliefs, such as having a close personal relationship with a higher power, are associated with greater vegetable consumption, and this may be due partly to the role of positive and negative religious coping. Negative religious coping appeared to play a role in the relationship between religious beliefs and greater alcohol consumption. These findings contribute to the literature on the religion-health connection, specifically making the case for religious coping as a mediator of that relationship. Because there had been little previous research on religious coping in a meditational role, and even less among African Americans, this study begins to contribute to informing that gap in the literature. Further, the findings echo previous research that suggests an important role of religious coping in health, particularly negative religious coping,¹³ and this holds true for both health risk and prevention behaviors. The current study provided an opportunity to examine physical health-related outcomes, whereas most previous research on religious coping has focused on mental health outcomes. Finally, this analysis highlights the importance of religious beliefs, their relationship with religious coping strategies, and the impact on health behaviors in African Americans.

These findings also have implications for health promotion activities directed toward African Americans. Those involved in church- or faith-based education or interventions could use the findings to inform their curriculum and potentially enhance efficacy. As an example, a health ministry activity that aims to reduce problem drinking may target maladaptive religious beliefs such as excessive guilt, feelings regarding punishment for sin, or feelings of abandonment by God. Faith communities are getting involved in health ministries that provide everything from cancer prevention education to HIV screening. It was recommended that HIV screening be offered to minority populations through alternative testing locations.⁵⁶ Ways to make faith-based interventions more effective, including use of evidence-based practices, will help reduce the health disparities that impact African American communities.

Human Subjects Statement

This work was supported by a grant from the National Cancer Institute, (#1 R01 CA105202) and was approved by the University of Maryland Institutional Review Board (#08-0328).

Acknowledgments

The team would like to acknowledge the work of OpinionAmerica, who conducted participant recruitment and data collection activities for the present study.

References

1. Koenig, HG.; McCullough, ME.; Larson, DB. Handbook of Religion and Health. New York: Oxford University Press; 2001.
2. Koenig, HG.; King, DE.; Carson, VB. Handbook of Religion and Health. 2. New York, NY: Oxford University Press; 2012.
3. Thoresen, CE. Spirituality, health, and science: the coming revival?. In: Roth-Roemer, S.; Kurpius, SR., editors. The Emerging Role of Counseling Psychology in Health Care. New York: WW Norton; 1998. p. 409-431.

4. Levin JS, Taylor RJ, Chatters LM. Race and gender differences in religiosity among older adults: findings from four national surveys. *J Gerontol.* 1994; 49(3):S137–S145. [PubMed: 8169348]
5. Taylor RJ, Chatters LM, Jayakody R, Levin JS. Black and white differences in religious participation: a multisample comparison. *J Sci Study Relig.* 1996; 35(4):403–410.
6. Pleis JR, Lethbridge-Çejku M. Summary health statistics for U.S. adults: National Health Interview Survey, 2006. *Vital Health Stat.* 2007; 10:235.
7. Koenig HG, Pargament KI, Nielsen J. Religious coping and health status in medically ill hospitalized older adults. *J Nerv Ment Dis.* Sep; 1998 186(9):513–521. [PubMed: 9741556]
8. Ellison CG, Taylor RJ. Turning to prayer: social and situational antecedents of religious coping among African Americans. *Rev Relig Res.* 1996; 38:111–131.
9. Pargament, KI. *The Psychology of Religion and Coping: Theory, Research, and Practice.* New York: Guilford Press; 1997.
10. Pargament KI, Smith BW, Koenig HG, Perez L. Patterns of positive and negative religious coping with major life stressors. *J Sci Study Relig.* 1998; 37(4):710–724.
11. Ano GG, Vasconcelles EB. Religious coping and psychological adjustment to stress: a meta-analysis. *J Clin Psychol.* 2005; 61(4):461–480. [PubMed: 15503316]
12. Pargament KI, Koenig HG, Perez LM. The many methods of religious coping: development and initial validation of the RCOPE. *J Clin Psychol.* Apr; 2000 56(4):519–543. [PubMed: 10775045]
13. George LK, Ellison CG, Larson DB. Explaining the relationships between religious involvement and health. *Psychol Inq.* 2002; 13:190–200.
14. Pargament KI, Koenig HG, Tarakeshwar N, Hahn J. Religious struggle as a predictor of mortality among medically ill elderly patients: a 2-year longitudinal study. *Arch Intern Med.* 2001; 161(15): 1881–1885. [PubMed: 11493130]
15. Ellison, CG.; Hummer, RA.; Burdette, AM.; Benjamins, MR. *Race, Religious Involvement, and Health: The Case of African Americans.* New Brunswick, NJ: Rutgers University Press; 2010.
16. Steffen PR, Hinderliter AL, Blumenthal JA, Sherwood A. Religious coping, ethnicity, and ambulatory blood pressure. *Psychosom Med.* Jul-Aug;2001 63(4):523–530. [PubMed: 11485105]
17. Holt CL, Wang MQ, Caplan L, et al. Role of religious involvement and spirituality in functioning among African Americans with cancer: testing a meditational model. *J Behav Med.* 2011; 34:437–448. [PubMed: 21222026]
18. Hill PC, Hood R. Advances in the conceptualization and measurement of religion and spirituality: implications for physical and mental health research. *Am Psychol.* 1999; 58(1):64–74. [PubMed: 12674819]
19. Holt CL, Roth DL, Clark EM, Debnam K. Positive self-perceptions as a mediator of religious involvement and health behaviors in a national sample of African Americans. *J Behav Med.* 2012 Nov 11. Epub ahead of print.
20. Lukwago SL, Kreuter MW, Bucholtz DC, et al. Development and validation of brief scales to measure collectivism, religiosity, racial pride, and time orientation in urban African American women. *Fam Community Health.* 2001; 24:63–71. [PubMed: 11563945]
21. Roth DL, Mwase I, Holt CL, et al. Religious involvement measurement model in a national sample of African Americans. *J Relig Health.* 2012; 51:567–578. [PubMed: 21416161]
22. Fetzer, I. National Institute on Aging Working G. . *Multidimensional Measurement of Religiousness/Spirituality for Use in Health Research.* Kalamazoo, MI: John E. Fetzer Institute; 1999.
23. Nunnally, JC.; Bernstein, IH. *Psychometric Theory.* New York: McGraw-Hill, Inc; 1994.
24. Block G, Hartman AM, Dresser CM, et al. A data-based approach to diet questionnaire design and testing. *Am J Epidemiol.* Sep; 1986 124(3):453–469. [PubMed: 3740045]
25. Kreuter MW, Skinner CS, Holt CL, et al. Cultural tailoring for mammography and fruit and vegetable consumption among low-income African American women in urban public health centers. *Prev Med.* 2005; 41:53–62. [PubMed: 15916993]
26. Stein AD, Lederman RI, Shea S. The Behavioral Risk Factor Surveillance System questionnaire: its reliability in a statewide sample. *Am J Public Health.* Dec; 1993 83(12):1768–1772. [PubMed: 8259816]

27. Muthén, LK.; Muthén, BO. Mplus User's Guide. 7. Los Angeles: CA1988–2012
28. Anderson JC, Gerbing DW. Structural equation modeling in practice: a review and recommended two-step approach. *Psychol Bull.* 1988; 103:411–423.
29. US Census Bureau. [Accessed January 8, 2013.] 2011 American Community Survey 1-Year Estimates. 2011. Available at: <http://factfinder2.census.gov>
30. Pew Forum US. [Accessed September 17, 2012.] A religious portrait of African-Americans. 2009. Available at: <http://www.pewforum.org/A-Religious-Portrait-of-African-Americans.aspx>
31. Centers for Disease Control and Prevention. [Accessed May 8, 2013.] WEAT: Web enabled analysis tool. Office of Surveillance, Epidemiology, and Laboratory Services Behavioral Risk Factor Surveillance System. 2010. Available at: http://apps.nccd.cdc.gov/s_broker/WEATSQL.exe/weat/freq_Year.hsqli
32. MacKinnon DP, Fairchild AJ, Fritz MS. Mediation analysis. *Annu Rev Psychol.* 2007; 58:593–614. [PubMed: 16968208]
33. MacKinnon DP, Krull JL, Lockwood CM. Equivalence of the mediation, confounding, and suppression effect. *Prev Sci.* 2000; 1:173–181. [PubMed: 11523746]
34. Pargament, KI.; Murray-Swank, N.; Magyar, G.; Ano, G. *Spiritual Struggle: A Phenomenon of Interest to Psychology and Religion.* Washington, DC: APA Press; 2005.
35. Ai AL, Park CL, Huang B, et al. Psychosocial mediation of religious coping styles: a study of short-term psychological distress following cardiac surgery. *Pers Soc Psychol Bull.* 2007; 33:867–882. [PubMed: 17483394]
36. Holt CL, Clark EM, Roth DL, et al. Development and validation of instruments to assess potential religion-health mechanisms in an African American population. *J Black Psychol.* 2009; 35:271–288. [PubMed: 19774107]
37. Exline EJ, Park CL, Smyth JM, Carey MP. Anger toward God: Social-cognitive predictors, prevalence, and links with adjustment to bereavement and cancer. *J Pers Soc Psychol.* 2011; 100:129–148. [PubMed: 21219078]
38. Holt CL, Haire-Joshu DL, Lukwago SN, et al. The role of religiosity in dietary beliefs and behaviors among urban African American women. *Cancer Control.* 2005; 12(Suppl 2):84–90. [PubMed: 16327755]
39. Musick MA, Blazer DG, Hays JC. Religious activity, alcohol use, and depression in a sample of elderly Baptists. *Res Aging.* 2000; 22:91–116.
40. Strawbridge WJ, Shema SJ, Cohen RD, Kaplan GA. Religious attendance increases survival by improving and maintaining good health behaviors, mental health, and social relationships. *Ann Behav Med.* 2001; 23(1):68–74. [PubMed: 11302358]
41. Hagdrup NA, Simoes EJ, Brownson RC. Fruit and vegetable consumption in Missouri: knowledge, barriers and benefits. *Am J Health Behav.* 1998; 22(2):90–100.
42. Fabricatore AN, Handal PJ, Rubio DM, Gilner FH. Stress, religion, and mental health: religious coping in mediating and moderating roles. *Int J Psychol Relig.* 2004; 14(2):97–108.
43. Drerup ML, Johnson TJ, Bindl S. Mediators of the relationship between religiousness/spirituality and alcohol problems in an adult community sample. *Addict Behav.* 2011; 36:1317–1320. [PubMed: 21868169]

Figure 1.
Structural Model

Table 1

Participant Demographic Characteristics

Characteristic	Categories	N = 2370
Age, mean (SD)		53.63 (14.82)
Sex	Men	38.2%
	Women	61.8%
Relationship Status	Never married	13.3%
	Single	17.2%
	Married or living w/partner	36.9%
	Separated or Divorced	18.8%
	Widowed	13.8%
Education	Grades 1–8	2.7%
	Grades 9–11	9.4%
	Grade 12 or GED ^a	32.8%
	1–3 yrs college	29.3%
	4+ yrs college	25.7%
Work Status	Full-time	38.3%
	Part-time	11.8%
	Not currently	12.6%
	Retired	26.2%
	Receiving disability	11.2%
Income	< \$5,000	8.7%
	\$5,000–\$10,000	12.4%
	\$10,000–\$20,000	14.8%
	\$20,000–\$30,000	13.4%
	\$30,000–\$40,000	11.6%
	\$40,000–\$50,000	9.3%
	\$50,000–\$60,000	8.3%
	>\$60,000	21.4%

Note.

Numbers may not sum to 2370 or 100% due to missing data.

^aGED = General Equivalency Diploma

Table 2

Adjusted and Unadjusted Effects

Mediator/Outcome	Religious Beliefs (M=17.7, SD=2.8)	Current Sample	2010 BRFSS Data for African Americans ^a					
			Unadjusted	CV Adjusted	CV-Rel Adjusted	Unadjusted	CV Adjusted	CV-Rel Adjusted
Positive religious coping (latent factor)		M=10.1 SD=2.1	.642***	.618***	.491***	.575***	.536***	.191***
Negative religious coping (latent factor)		M=4.3 SD=1.8	-.234***	-.211***	-.180***	-.220***	-.172***	-.046
Fruit servings		M=2.44 SD=1.37	.057*	.038	-.115***	.191***	.149***	.230***
Vegetable servings		M=2.15 SD=0.97	.042	.023	-.059	.129***	.082**	.123**
Alcohol use (yes/no)		41.67% yes	-.100***	-.069**	.061	-.224***	-.151***	-.194***
Days 4/5 alcohol drinks		M=1.48 SD=4.05	-.048	-.038	.076	-.127***	-.120**	-.174**
Largest number of drinks		M=3.05 SD=2.83	-.101**	-.060	.025	-.181***	-.111**	-.129*
Smoking status		15.9% current	-.020	.000	.071	-.100***	-.057*	-.106**

*
p < .05

**
p < .01

p < .001

Note.

^a = data from the current study and BRFSS are not always directly comparable due to methodological variation

^b = BRFSS data is not limited to African Americans

The CV (covariate) adjusted effects are adjusted for age, gender, education, and self-rated health. The CV-Rel (covariate-religion) adjusted effects are those adjusted for age, gender, education, self-rated health, and the other religious involvement latent factor.

Table 3

Summary of Structural Models

Mediator	Health Behavior	b ₁	b ₂	Religious Beliefs a ₁₁	Religious Behaviors a ₁₂	RMSEA Direct (c ₁)	Indirect	a ₂₁	a ₂₂	Direct (c ₂)	Indirect
Religious coping	Fruit servings	.035	-.046	.493***	-.181***	-.140***	.026	.188***	-.046	.220***	.009
	Vegetable servings	.115***	-.089**	.494***	-.182***	-.131***	.073***	.187***	-.046	.096*	.026**
	Alcoholic drinks in 30 days (Y/N)	-.039	.040	.493***	-.183***	.087*	-.023	.189***	-.045	-.184***	-.009
Largest number of drinks	Days 4/5 alcohol drinks	.000	.108*	.494***	-.182***	.095	-.020	.187***	-.046	-.167**	-.005
	Smoking status	-.055	.050	.494***	-.181***	.106**	-.036*	.188***	-.045	-.091*	-.013
											.047

* = p < .05

** = p < .01

*** = p < .001

Note.

RMSEA = root mean square error of approximation