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Longitudinal effects of religious involvement on religious coping and health behaviors in a national sample of African Americans

Cheryl L. Holt [a, *], David L. Roth [b], Jin Huang [b], Crystal L. Park [d], Eddie M. Clark [c]

[a] University of Maryland, School of Public Health, Department of Behavioral and Community Health, United States
[b] Johns Hopkins University, Center on Aging and Health, United States
[c] Saint Louis University, Department of Psychology, United States
[d] University of Connecticut, Department of Psychological Sciences, United States

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ABSTRACT

Many studies have examined associations between religious involvement and health, linking various dimensions of religion with a range of physical health outcomes and often hypothesizing influences on health behaviors. However, far fewer studies have examined explanatory mechanisms of the religion-health connection, and most have overwhelmingly relied on cross-sectional analyses. Given the relatively high levels of religious involvement among African Americans and the important role that religious coping styles may play in health, the present study tested a longitudinal model of religious coping as a potential mediator of a multidimensional religious involvement construct (beliefs; behaviors) on multiple health behaviors (e.g., diet, physical activity, alcohol use, cancer screening). A national probability sample of African Americans was enrolled in the RHIAA (Religion and Health In African Americans) study and three waves of telephone interviews were conducted over a 5-year period (N = 565). Measurement models were fit followed by longitudinal structural models. Positive religious coping decreased modestly over time in the sample, but these reductions were attenuated for participants with stronger religious beliefs and behaviors. Decreases in negative religious coping were negligible and were not associated with either religious beliefs or religious behaviors. Religious coping was not associated with change in any of the health behaviors over time, precluding the possibility of a longitudinal mediational effect. Thus, mediation observed in previous cross-sectional analyses was not confirmed in this more rigorous longitudinal model over a 5-year period. However, findings do point to the role that religious beliefs have in protecting against declines in positive religious coping over time, which may have implications for pastoral counseling and other faith-based interventions.

The study of religious involvement and health has produced a body of literature of sufficient scope as to be reviewed in two editions of an exhaustive volume, the *Handbook of Religion and Health* (Koenig et al., 2012; Koenig et al., 2001) and a more specific one reviewing population-based research in the US, *Religion Families and Health* (Ellison and Hummer, 2010). Much of this research has reported salutary associations between religious involvement and health-related outcomes. For the present purpose, we define religious involvement as partaking in "an organized system of [religious] beliefs, practices, rituals, and symbols" (Thoresen, 1998, p. 415). Given that most contemporary research on religion and health recognizes religious involvement as a multidimensional construct (Hill and Hood, 1999) we utilize a model of religious involvement that includes both religious beliefs (e.g., personal relationship with God or other higher power) and behaviors (e.g., service attendance) (Lukwago et al., 2001; Roth et al., 2012).

The church and religious involvement have historically played an important role in African American life (Lincoln and Mamiya, 1990). The church is more than a worship center, but has taken a lead role in providing resources and support for African Americans since the time of slavery. African Americans are therefore historically high in religious involvement (Taylor et al., 2003). This group also experiences a disproportionate burden of many chronic diseases and adverse health outcomes (Williams, 2012). There is also quite a bit of evidence that religious involvement is linked to

* Corresponding author. University of Maryland, School of Public Health, Department of Behavioral and Community Health, 1234W Public Health Building (255), College Park, MD 20742, United States.
E-mail address: cholt14@umd.edu (C.L. Holt).

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health-related outcomes, particularly in African Americans (Ellison and Hummer, 2010). Therefore, it is important to develop a deeper knowledge of the religion-health connection in African Americans in light of the potential implications for better understanding health disparities and informing public health interventions, including those delivered in faith-based settings.

Given these strong and persuasive links between religious involvement and health, researchers have begun to empirically examine *reasons for*, or mechanisms of, these observed associations, often through mediation analyses. Several explanatory mechanisms of the "religion-health connection" have been proposed, including that religiously involved people may have better mental health, which in turn impacts their physical health outcomes (Ellison and Levin, 1998; Levin and Vanderpool, 1989; Oman and Thoresen, 2002) or that religion may facilitate positive self-perceptions (Chatters, 2000; Ellison and Levin, 1998; Levin and Vanderpool, 1989), provide a protective source of social support (Chatters, 2000; Ellison and Levin, 1998; George et al., 2000; Levin and Vanderpool, 1989; Musick et al., 2000; Oman and Thoresen, 2002), promote beliefs about living healthier lifestyles or avoiding risky health behaviors (Chatters, 2000; Ellison and Levin, 1998; George et al., 2000; Levin and Vanderpool, 1989; Musick et al., 2000; Oman and Thoresen, 2002), or provide a sense of meaning in life (George et al., 2000; Musick et al., 2000). Cross-sectional evidence suggests that viewing illness as punishment from a higher power can also play a negative role in the religion-health association (Holt et al., 2014b).

1. Religious coping

One important potential mediational pathway is that religion may promote better adaptation to stress (Ellison and Levin, 1998; Musick et al., 2000), specifically through religious coping (Holt et al., 2014a). Religious coping refers to bringing religious resources to bear in one's efforts to deal with stressful situations (Pargament et al., 1998). Religious coping has been associated with individuals' adjustment to major life stressors such as cancer or trauma as well as their management of less severe stressors (Pargament et al., 2000), and has been shown to predict health and well-being above and beyond secular types of coping (e.g., Park et al., 2009; Pargament et al., 2013). Importantly, different types of religious coping have been identified and hypothesized to be linked to different outcomes (Pargament et al., 2011). Most contemporary research distinguishes positive and negative religious coping. Positive religious coping reflects a confident and trusting connection with God (Hebert et al., 2009) and includes strategies such as seeking religious support and making benevolent religious reappraisals. Negative religious coping reflects a less secure relationship with God (Hebert et al., 2009) and includes strategies such as expressing religious discontent and making punitive religious reappraisals. Using positive religious coping to deal with specific stressors is sometimes (Pargament et al., 1998), but not always (Gerber et al., 2011; Sherman et al., 2009; Sherman et al., 2005), related to higher levels of well-being. More consistent findings have been reported for negative religious coping, which tends to be used much less frequently but is generally found to be strongly related to poorer mental and physical health (Exline and Rose, 2013).

Even though there has been much previous research demonstrating associations between religious coping and health, including theorized mediation of religious coping on religiousness-health links, only a handful of studies have examined whether religious coping accounts for the link between religiousness and health outcomes (Roesch and Ano, 2003). One previous study that tested the mediational effect of religious coping in the religion-health link was a cross-sectional analysis of our present sample of African Americans. We found that the relationship between religious beliefs and vegetable consumption was mediated by religious coping, such that positive coping was related to greater vegetable consumption while negative coping was related to less consumption (Holt et al., 2014a); and the relationship between religious behaviors and vegetable consumption was also mediated by greater positive religious coping.

To our knowledge, there are no existing longitudinal studies that have examined whether religious coping mediates the effects of religious involvement on physical- or mental health-related outcomes. Cross-sectional mediation models can be informative, but also have serious limitations concerning temporal and cause-and-effect interpretations. Furthermore, cross-sectional analyses have been shown to yield biased estimates of underlying longitudinal mediation mechanisms (Maxwell and Cole, 2007). The current prospective design has the advantage of being able to assess and control for known confounders relevant in religion-health research (Powell et al., 2003) and for baseline values, thus allowing us to examine change over time.

2. The present study

The present study aimed to examine religious coping as a mediator of religious involvement and a variety of health behaviors using longitudinal data from a national sample of African Americans. Some have argued that cross-sectional studies, particularly those that do not control for relevant covariates or confounders, lack the ability to rule out the possibility of reverse causality, whereby healthier people are either attracted to religious participation and/or are physically able to attend worship services (Maselko et al., 2012; Roth et al., 2016). All of this leads to the importance of investigations that model the relationships between religious involvement, psychosocial mediators such as religious coping, and health-related outcomes over time.

Given our previous cross-sectional research examining religious coping as a mediator of the religion-health connection, and informed by theory and research in religious coping (Pargament et al., 2011), we proposed a series of hypotheses based on the study conceptual model shown in Fig. 1. First, it was hypothesized that both religious beliefs (e.g., having a strong personal relationship with God) and religious behaviors (e.g., attendance and participation in church activities) would be predictive of stability, or potentially of modest increases in positive religious coping and decreases in negative religious coping over time (the "al" and "ah" paths in Fig. 1). Second, based on previous research linking religious coping and health outcomes (Pargament et al., 2011), we expected that positive religious coping would be associated with increases in adaptive health behaviors and decreases in maladaptive health behaviors over time, and that the opposite would be true for negative religious coping-that it would predict growth in poor health behaviors over time and attenuation in positive health behaviors (the b_{32} paths in Fig. 1). Detecting an effect of the mediator on change over time in the outcome would be a prerequisite for detection of mediation in the overall model (discussed below).

Third, consistent with our previous cross-sectional research (Holt et al., 2014a) we hypothesized that religious beliefs would have stronger linkages in the longitudinal religion-health behavior model than would religious behaviors. Fourth, based on our previous work examining the differential effects of positive and negative religious coping (Park et al., 2017), we expected that negative religious coping would have stronger associations with the health behaviors than would positive religious coping. Fifth, we anticipated that both positive and negative religious coping would serve as mediators of the association between religious