Socioeconomic Status and Health: The Protective Role of Religiosity among African Americans

by

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Abstract

Several lines of evidence suggest that there is a significant relationship between religiosity, socioeconomic status (SES), and health. In the past, researchers have grown more interested in the protective factors of religiosity and spirituality on negative health outcomes; however, these studies have focused mostly on religious attendance as a way of measuring religiosity and focused on health outcomes limited to mental health. The current study adds to exiting literature by using a more spiritual-based measure of religiosity (daily guidance and coping) and examining how this form of religiosity is associated with physical health. The current study examined the associations between SES, religiosity, and health among African Americans and tested the moderating effects of daily guidance and coping (DGC), religious salience, and religious attendance for these participants (n = 295). Data from The Midlife in the United States (MIDUS) study (2012-2013) was used to test the current hypotheses. Results indicated that the relationship between SES and health was moderated by DGC and religious salience.

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INTRODUCTION

Historically, religious institutions have made it possible for individuals and communities to have a sense of hope in situations where there has been an abundance of disadvantage (Rose, 2000). For many African American communities, churches and religious participation have served as a staple for meeting "political", "economic", and "social" needs in the face of persistent structural hardships (Harris & Ulmer, 2017). Although religious institutions have served as an instrumental part of the African American community from the ending of slavery up into the civil rights movements in the 50's and 60's, recent public discourse has generated competing claims about whether religious institutions are still beneficial to the health of African Americans.

When examining the relationship between health and religiosity, it is disputed whether religious institutions negatively affect the African American gay community. A recent study on Black/African American cisgender queer emerging adult men found that the negative rhetoric associated with religiosity had more negative health effects on this population of individuals (Garrett-Walker & Torres, 2017). However, in some cases, religious institutions account for more community involvement and social support in African American communities (Ellison & Sherkat, 1995; Roger & Hatala, 2018).

Many studies document the association between income and health. For example, higher income has been consistently associated with longer life expectancy (Baldassari et al., 2016), and individuals from low-income levels are more likely to experience poor health outcomes than those from high-income levels (Chetty et al., 2016; Massing et al., 2004). Additionally, research has shown variation in health outcomes across various ethnic groups. For example, African Americans are more likely to experience poor health outcomes associated with lower income in

comparison to those of European decent (Carmichael et al., 2017). The occurrence of cardiovascular disease has been studied among different racial groups. Researchers found that, although cardiovascular mortality rates are decreasing in the U.S., African Americans experience a slower decrease in cardiovascular mortality rates across time and experience higher rates of mortality than White individuals (Singh, Siahpush, Azuine, & Williams, 2015). Although, it has been established that African Americans experience more health problems than individuals of European decent, very little research has examined the possible moderating role of religiosity among African Americans.

The intersectionality of race and class faced by African Americans from low-income levels can create an overlapping and interdependent system of discrimination and disadvantage that is harmful to both physical and mental health (Slopen et al., 2010). However, there are several factors, such as religious or spiritual affiliation, that may serve as protective factors for these negative health outcomes (Chen, Miller, Lachman, Gruenewald, & Seeman, 2012). The term *religiosity* has been used to refer to the "interpersonal" and "institutional" aspects of spirituality that are derived from participating in a formal religious group's policies, ideals, traditions, with co-members of a tradition. However, *spirituality* has been used to refer to the "intrapsychic" experiences of religiosity/spirituality that relate to an individual's sense of connection with something transcendent; integration of self; and feelings of awe, gratitude, compassion, and forgiveness (Greenfield, Vaillant, & Marks, 2009). There has not been many studies that look at the difference in between religiosity and spirituality. In the current study, the variables used to examine the moderating effects of religiosity do not look at both religiosity and spiritualty separately due to the nature and design of the religiosity measures. For instance, daily guidance and coping uses items that inquire about both religiosity and spiritualty; however, this

measure is examined as being spiritual. Reference to religiosity throughout the current study refers to either *religiosity* or *spiritualty*; however, the nature of each religiosity measure will be further expanded upon.

Several studies have illustrated the association between religiosity and better health outcomes, including global self-ratings of health (Chattopadhyay, 2007); overall functional health and disability limitation (Elkonin, Brown, & Naicker, 2014); physical symptomatology (Greenfield et al., 2009); the incidence and prevalence of cancer, both overall and site specific (Sutton & Parks, 2013); and the incidence and prevalence of coronary heart disease, hypertension, and cerebrovascular disease (Roger & Hatala, 2018). Not only do religious people experience better physical health, they are also less likely to experience negative psychological states (Krause, 2015). It has also been established that, mental and physical health have a direct influence on each other. Individuals who attend religious services regularly may have more psychosocial resources than individuals who rarely attend religious services, which has a positive effect on physical health (Son & Wilson, 2011).

African Americans are more likely to experience socioeconomic disadvantage due to the influence of structural disadvantage like racism, high poverty concentration, and the lack of access to adequate health care (Kim, Harty, Takahashi, & Voisin, 2018). Many empirical articles have illustrated the negative health outcomes experienced by individuals living in disadvantaged neighborhoods, but there is a need for research that seeks to promote resiliency through the identification of protective factors associated with better health. The current study draws upon literature that examines religious involvement as a protective factor for negative health outcomes while also addressing several gaps in the extant literature. One gap that the current research study addresses is how religiosity is evaluated as a moderator. Most research studies use religious

attendance to gauge the amount of religious/spiritual involvement an individual has (Levin & Markides, 1986; Oleckno & Blacconiere, 1991; Strawbridge, Shema, Cohen, & Kaplan, 2001); however, this type of measurement does not examine the role of spiritual practice, or how often someone uses and engages in religious or spiritual guidance in their daily life. Additionally, the current study will address the gap in literature that sheds light on the physical health outcomes that could be associated with income. Many research studies have established how religiosity can serve as a protective factor for negative mental health outcomes (Bear, Garroutte, Beals, Kaufman, & Manson, 2018; Kasen, Wickramaratne, Gameroff, & Weissman, 2012; Yoon et al., 2018), but there is a need to examine if these findings are parallel with physical health outcomes (Son & Wilson, 2011). It is hypothesized that religiosity would moderate associations between socioeconomic status (SES) and health. To examine the current hypothesis, three religiosity measures were used. Daily guidance and coping, or how often someone seeks religious advice and comfort, was used as the main religiosity measure due to the spiritual nature of the variable. Religious salience- the relative importance of religion in one's personal life-, and the frequency of religious attendance were also used to further examine the moderating effects of religiosity on the relationship between SES and health.

REVIEW OF LITERATURE

The purpose of the literature review is to examine existing research concerning African Americans' health outcomes, income, and religiosity/spirituality. This review will specifically outline a theoretical framework suggested by Emile Durkheim ([1912] 1995) and several conceptual models presented by researchers that used his original theory in their studies. Furthermore, a summary of research findings relating to the relationship between income and health among African Americans will be provided. Also, the literature review will examine studies investigating the possible moderating role that religiosity plays in the association between socioeconomic status and negative health outcomes. Finally, an explanation of the innovation of the current research study and how it relates to past research will be explained.

Theoretical Background

Several scholars have theorized about the potential benefits of religiosity and spirituality to well-being. These perspectives provides a solid foundation for the notion that religiosity and spirituality would show associations with health (Greenfield et al., 2009). The explanation of how religion might have positive effects on health has been linked by social and psychological outcomes (or resources), such as self-esteem, healthy behaviors and lifestyles, and social support, that ultimately lead to better health. Emile Durkheim's ([1912] 1995) theoretical framework suggests that the social component of religiosity and religious participation—net of its potential association with individuals' spirituality—might lead to better psychological well-being. Durkheim notes, for example, that religious participation may protect individuals from *egoism* (when an individual is insufficiently connected to broader social groups) and *anomie* (when an

individual is insufficiently constrained by social institutions). Others have also suggested that, irrespective of egoism or anomie, the emotional and instrumental support afforded by social connections arising from religious participation may itself have beneficial health effects (Chattopadhyay, 2007; Roger & Hatala, 2018). Religiosity or spirituality do not have to be related to a social component for it to serve as a protective factor. For example, "trust in God" has been found as a moderator to explain why religiosity and spirituality is associated with better health (Krause, 2015).

Income and Health

The relationship between low socioeconomic status (SES) and poor health outcome or higher risk of disease has been consistently reported in many epidemiological studies across numerous race/ancestry groups (Gaye, Gibbons, Barry, Quarells, & Davis, 2017). High income has been associated with greater longevity (Chetty et al., 2016; Tapia Granados, 2013; White, 2002). Additionally, cardiovascular disease has been consistently linked to income (Massing et al., 2004). Additional health indicators, including smoking, obesity, metabolic syndrome, and alcohol use have all been associated with increased unemployment rates (Jackson, Gjelsvik, Garro, & Pearlman, 2013; Miller, Chen, Yu, & Brody, 2017; Nandi, Charters, Strumpf, Heymann, & Harper, 2013); thus, further illustrating the link between low-income and health.

Not only has income been associated with physical health, but mental health and income also show positive associations. Research has found that the inequality of mental health morbidity between and within ethnic groups has been linked to income (Mangalore & Knapp, 2012). Data from the National Health Interview Survey (NHIS) from 2009 to 2013 showed as

income increased, the percentage of adults with serious psychological distress deceased, further illustrating the association between income and mental health.

Religiosity

Most recently, a growing number of studies have shown that religiosity or spirituality, including prayer, attendance at religious services or just faith in God, benefits health in ways that science has not fully explained (Badanta-Romero, de Diego-Cordero, & Rivilla-García, 2018; Ding, 2012; Franzen, 2018). Both religiosity and spirituality have been found to be associated with health. Studies have found religious participation to be associated with reduced premature mortality and morbidity, lower levels of death anxiety, fewer symptoms of a depressed affect and lower somatic symptom scores (Krause, 2015; Lycett, 2015). In some cases, greater religious involvement has been found to be protective with regards to lower rates of delinquency, drug use, risky sexual behavior outcomes and higher rates of school engagement (Kim, Harty, Takahashi, & Voisin, 2018). Even the use of religious songs have been used by African American individuals to help cope with stressful life events (Hamilton et al., 2017).

One longitudinal study found that religious participation at baseline was associated with steeper ("healthier") diurnal cortisol slopes 10-years later (Tobin & Slatcher, 2016). With the recent growth in research on the effects of religiosity and spirituality on health, it is important to examine the degree to which these effects are present within a specific racial/ethnic group. For African Americans, examining religiosity and spirituality as protective factors serves as a basis for understanding if the presence of religious institutions still has an influence on individuals in disadvantaged communities.

Some studies have also found that religious involvement may be associated with adverse health outcomes. Although religious involvement has been found to associated with improved health outcomes for some people, it has been associated with greater obesity rates for older adults (Feinstein, Liu, Ning, Fitchett, & Lloyd-Jones, 2012). This association is confounded by demographic and other factors; however, it still occurs between young adulthood and middle age. Among African American Protestant men (AAPM), the association between frequent church attendance and obesity remained prevalent, especially in comparison to AAPM who did not participate in church activities (Taylor, Belay, Park, Onufrak, & Dietz, 2013). Most studies are finding that greater religiosity is associated with higher body weight (Yeary, Sobal, & Wethington, 2017).

Current Study

It has been established that Black/African American communities are disproportionately affected by illness, disease and socioeconomic disadvantage. Churches have served as vital community structures and "safe havens" for Blacks/African Americans from a time of American slavery to the Civil Rights era and beyond (Musgrave, Allen, & Allen, 2002; Sutton & Parks, 2013). In fact, Blacks/African Americans are most likely to report a formal, religious, or faith affiliation (an estimated 88%) when compared to 78% of Whites (Sutton & Parks, 2013). Both religiosity and spirituality may provide a significant framework for coping, surviving, and thriving in the daily lives of Blacks/African Americans living in the United States. In addition, Blacks/African Americans who do not regularly attend organized church services often have a faith-or spirituality-based framework by which they hold themselves and others accountable.

The current study adds to a growing literature on religiosity and health that concerns physical health outcomes. Most of the research has targeted mental health, where the possible influence of religiosity is examined on a psychological level of analysis; however, there has not been much attention paid to physical health where biological changes are involved (Son & Wilson, 2011). The current study also adds to the literature of religiosity and health by examining the effects of a less explored measure for religiosity, religious daily guidance and coping (DGC), which gauges personal religiosity and spirituality (Bradshaw & Ellison, 2008). DGC measures how often someone uses religiosity in decision-making and how often someone seeks comfort through religiosity. The current study uses self-rated health because of how little it is used in research concerning the association between religiosity and health and its significance as a global measure of health. Musick and Worthen (2010) observe that the connection between religion and self-rated health "has not been well documented since 2000," adding that it "deserves more attention in the literature" (p. 250). Previous researchers have noted the significance of focusing on the effects of religiosity on physical health. Oman and Thorenson (2005) describe the relation between religion and physical health as "robust." Myers (2008) declares that "religious involvement rivals nonsmoking and exercise effects" as a predictor of physical health and longevity (Ding, 2012).

Research has shown that individuals that identify with a minority status have demonstrated "psychological strength" when faced with race-related hardships (Ryff, Keyes, & Hughes, 2003). However, the idea that people of color may be resilient to mental and physical illness is a comparatively new phenomenon that needs to be further explored (Wallace, 2012). The current study aims to shed light on resiliency of African Americans. Although some studies have shown that religiosity and spiritualty can serve as protective factors for negative health

outcomes, very little of this research has focused on African Americans. This is surprising given the widely acknowledged importance of religion and spirituality within many African American communities (Harris & Ulmer, 2017). Traditionally, people of color, especially African Americans, are underrepresented in mental and physical health research.

METHOD

Participants

The current study uses data from the Milwaukee Refresher sample of the Midlife in the United States (MIDUS) study (2012-2013) (n = 295). MIDUS is a national, longitudinal study of behavioral, psychological, and social factors that may be consequential for health over the life course (Radler & Ryff, 2010). The MIDUS Milwaukee Refresher survey employed the same comprehensive assessments (demographic, psycho-social, and physical and mental health) as those assembled on the existing MIDUS sample. The survey data collection (Project 1) consisted of an in-person interview (CAPI) followed by a self-administered questionnaire. From 2012 to 2013, the MIDUS Milwaukee Refresher study recruited a sample of 508 Milwaukee African American adults, aged 25 to 64. Milwaukee is known as the main cultural and economic center of the Milwaukee metropolitan area and is the largest city in Wisconsin. An original sample size of 508 participants was reduced to 295, after adjusting for the 213 participants who had missing data for the self-administered questionnaire. The average age of the 295 participants from this sample was 45 years (SD = 11.0), with 37.3 percent of the sample identifying as male. The percent of missing data for each variable is reported in Table 4.

Measures

SES: There are several different indices of socioeconomic status (SES), which makes it a multifaceted assortment of resources. Additionally, SES been linked to several health outcomes, including illness, disability, and premature death (Link & Phelan, 1995). To evaluate participants' SES, an income-to-needs ratio--a per capita index, adjusted annually for costs of living--was calculated. A family's income-to-needs ratio accounts for everyone in a household

who is supported by the family's income, and it serves as a standard measure of a family's monetary status (U.S. Census Bureau, 2013; El-Sheikh, Keiley, Bagley, & Chen, 2015). To calculate the income-to-needs ratio, household income (total income from wage, pension, social security, and other sources) was divided by the federal poverty threshold for that family size based on the 2012 income distribution. Using household income to examine all of the people in the household provides a better estimate of the needs within the household as opposed to the needs of the individual, and household income has been directly associated with health outcomes (Galobardes, Shaw, Lawlor, Lynch, & Smith, 2006). A ratio equal to or less than 1.0 is defined by the US Census Bureau as "poverty" (Javanbakht et al., 2016). 50 percent of the sample for the current study fall at the negative end of the income distribution, 31.9 percent are between 0 and below 1, and 18.1 percent fall at the upper end of the income distribution (above 1); however, the entire income distribution is considered in examining SES. The composite score of the income-to-needs measure was logged to correct for the positive skew of the distribution and later standardized (*sk* = .30).

Religiosity: Religiosity was measured by three different scales: 1) religious attendance, 2) religious salience, and 3) daily guidance and coping (DGC). Religious salience and DGC were added into the study as a means of examining the psychological effects of religiosity and spirituality on health. To assess **religious attendance** participants were asked to report how frequently they attend religious or spiritual services (1 = *never* to 6 = *once a day or more*. A six-item composite sum score was created to measure **religious salience** (Cronbach's alpha = 0.86; each item is coded 1 = *not at all* to 4 = *very*). Religious salience is defined as the relative importance of religion in one's personal life (Hoge & De Zulueta, 1985). Specific items were: (a) "How religious are you?" (b) "How important is religion in your life?" (c) "How important is it

for you—or would it be if you had children now—to send your children for religious or spiritual services for instruction?" (d) "How closely do you identify with being a member of your religion?" (e) "How much do you prefer to be with other people who are the same religion as you?" and (f) "How important do you think it is for people of your religion to marry people who are the same religion?" Finally, **daily guidance and coping** is addressed with two questions (Cronbach's alpha = 0.81; each is coded 1 = *never* to 4 = *often*): (a) "When you have decisions to make in your daily life, how often do you ask yourself what your religious or spiritual beliefs suggest you should do?" and (b) "How often do you seek comfort through religious or spiritual means such as praying, meditating, attending a religious or spiritual service, or talking to a religious or spiritual advisor?" From a previous study, the Cronbach's alpha was .88 for religious salience and .85 for DGC, which is consistent with the current study (Bradshaw & Ellison, 2008). Each religiosity measure was reverse-scored so that higher values meant more religious involvement.

Self-Rated Health: Self-rated health was measured using an item from the self-administered questionnaire (SAQ) in the MIDUS data. The item measured the overall health of the participant and directly asked individuals to rate their current health on a scale from 0 to 10 where 0 means "*the worst possible health*" and 10 means "*the best possible health*." According to previous literature, the current item have been linked to mortality in the MIDUS cohort (Ferraro, Schafer, & Wilkinson, 2016; Fuller-Rowell, Curtis, Chae, & Ryff, 2018).

Additional Measures: Measures of sex (female or male), age (in years), marital status (single or relationship), and body mass index (BMI) (weight in kilograms divided by the square of height in meters) were included as covariates in the analyses. Table 1 depicts the percent of missing data for each variable used in the current study.

Analysis Plan

A series of regression models were fit to test the stated hypotheses. Analyses were conducted in two main stages. First, anticipating that SES is associated with health outcomes, DGC was added as a possible moderator (first as a covariate) for the relationship between the effects of SES on health. The second stage of the current analysis examined two additional religiosity measures to see if they had similar effects as the first religiosity measure. All five models included sex, age, BMI and marital status as covariates. Model 1 regressed self-rated health (SRH) onto SES with DGC added in as a covariate, Model 2 added the interaction between SES and DGC, Model 3 examined the first additional religiosity measures (religious salience) and its interactions with SES, Model 4 examined religious attendance and its interaction with SES, and finally, Model 5 added all the religiosity measures in as competing moderators.

RESULTS

Descriptive statistics for each variable is provided in Table 2, and bivariate correlations between study variables are shown in Table 3. Each religiosity measure was positively correlated. Also, SES was positively correlated with age, marital status, and self-rated health. BMI was negatively correlated with self-rated health.

Model Results

Main effects: SES and self-rated health. Results of Model 1 indicated that SES was positively associated with self-rated health (B = .22, 95% CI [.10, .34], $p < .001$, R^2 = .09) after accounting for sex, age, BMI, marital status, and daily guidance and coping (B = .06, 95% CI [-.07, .18], p = .38). As SES increases, individuals report higher scores of self-rated health. Additionally, 9.3% of the variability in self-rated health was explained by SES. Age (B = -.13, SE = .06, p = .033) and BMI (B = -.21, SE = .06, p = .001) were both significant and negatively associated with self-rated health. Interestingly, DGC was not significantly associated with self-rated health.

Moderation of SES-self-rated health associations. Model 2 results showed that the association between SES and self-rated health was significantly moderated by daily guidance and coping (B = -.14, 95% CI [-.26, -.03], p = .02) after accounting for sex, age, BMI, marital status. There is less variation in self-rated health scores when individuals from both low and high SES backgrounds have high DGC; however, when there is low DGC, self-rated health scores vary significantly. To help further explain the moderating effects of DGC on the association between

SES and health, six additional interaction terms were created and added into the model as competing moderators.

Additional religiosity measures. The current study uses three measures to examine the protective factors of religiosity/spirituality. DGC was used as the main measure of examination because of the nature of the variable. This variable examines the psychological effects of religiosity and directly measures how often someone uses religiosity throughout daily life. Model 3 examined the moderating effects of the first additional religiosity measure, religious salience. Religious salience was used to gauge a more personal religious and spiritual belief (Bradshaw & Ellison, 2008). Results indicated that the interaction between SES and religious salience was significant (B = -.13, 95% CI [-.25, -.01], p = .04, R^2 = .11). Finding a significant interaction between SES and religious salience further expands on the idea that religious importance and meaning are better predictors of health outcomes than how often someone attends a religious or spiritual service. Thus, further supporting the idea of religiosity and spiritualty being more protective than the frequency of church attendance (Abdel-Khalek, 2007).

Results for Model 4 illustrated a non-significant interaction between SES and religious attendance. Religious attendance was used to examine frequency of religious/spiritual practice in a formal group setting, as DGC and religious salience does not entirely explain the act of physically being a part of a religious institution. Finally, Model 5 shows that none of the religiosity measures are significant when added in as competing moderators, including the once significant interactions between SES and DGC and SES and religious salience. Figure 1 depicts the plotted interactions for each significant religiosity measure. The results reported for each model are standardized estimates and are shown in Table 4.

DISCUSSION

Socioeconomic Status and Religiosity. It was hypothesized that daily guidance and coping, religious salience and religious attendance would moderate the effects of socioeconomic status on health. Each religiosity measure was examined in a separate model. Results from the current analyses provided support for the hypotheses; however, religious attendance was the only religiosity measure that did not have a statistically significant interaction. These findings are consistent with previous research that suggest religious and spiritual practice and its importance have stronger moderating effects on health than just frequency of a religious service (Lycett, 2015; Oleckno & Blacconiere, 1991; Sutton & Parks, 2013).

Upon further examination of the significant interaction of SES and DGC, that interaction plot illustrates that DGC had a stronger protective influence on self-rated health at lower income levels compared to higher incomes. When there are high reports of DGC, the difference in self-rated health scores is minimal between low and high SES levels. When focusing on the two extreme ends of the graph, it shows that DGC had a stronger protective influence on self-rated health at lower income levels compared to higher incomes. Participants at low SES levels who report higher levels of DGC have higher scores of self-rated health compared to individuals that report low levels of DGC. When looking at the relationship between SES and health in Figure 1, there is a strong, positive relationship when DGC is low. Having high levels of DGC is protective.

Figure 1 also illustrates the significant interaction between SES and religious salience. Like the significant interaction plot between SES and DGC, the interaction plot for SES and religious salience indicates that those who are in lower SES levels and have high religious salience report better health compared to those who report having low religious involvement. To

summarize, in comparison to other low-income individuals, those who have high religious involvement report better health. However, these findings suggest that there is a need to further explore why religiosity significantly moderates the relationship between SES and health. Some research suggest that there are psychosocial factors, like community and friend support (Son & Wilson, 2011).

Limitations and Future Directions

Some limitations are important to note. Because of the cross-sectional nature of the current study, it is impossible to conclude that higher religious involvement leads to better health outcomes for individuals from low SES backgrounds; it is only possible to indicate the associations between these variables. Future research in this area should include longitudinal studies that would at least help to clarify the temporal relationships of socioeconomic status, religiosity, and health outcomes.

Another limitation of the current study is that the sample was drawn from a single metropolitan area in the Midwestern United States. Although the characteristics of Milwaukee, Wisconsin may be like many other metropolitan areas in the United States (e.g., in levels of racial segregated and racial health disparities), more research will be needed to examine whether the findings generalize to other contexts.

Although results suggest that high DGC and religious salience moderates the effects of SES on health in this African American sample, it is important to note that this study employed self-reported measures of health. It is possible that religious or spiritual people from lower socioeconomic backgrounds are less likely to report that they have bad health because of their faith or spiritual beliefs in focusing on the good in their lives. Health is a multi-faceted concept

such that multiple indicators to assess different aspects of health are needed. Future research should include more objective measures such as data derived from medical record reviews, physical activities, or number of chronic conditions.

Despite these limitations, the current study adds to the growing body of literature that assess religiosity and spirituality as protective factors for negative health outcomes. Results for the current study suggests that daily guidance and coping and religious salience are protective of negative health outcomes for African Americans. Additionally, the interaction between SES and religious salience and religious attendance explain some of the protective factors of religiosity and spirituality, along with measures such as confused and optimistic worldview. Overall, results of the current study support literature that suggests that, among American Americans, religiosity may buffer the adverse effects of socioeconomic disadvantage on physical health. To address health disparities, it will be important for clinicians, researchers, and public health professionals to understand the role that religion and spirituality plays in the health of African Americans communities. Once this importance has been established, health care providers and pharmaceutical companies can incorporate religious and spiritual practices into their services. By doing so, trust and understanding can be built between provider and patient.

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APPENDICES

Appendix A – Tables

Table 1

Percent of Missing Data on Each Variable: Midlife in the U.S. Study (Milwaukee Refresher Data Collected in 2012)

Characteristics	%
Biological sex (1 = male)	0
Marital status (1 = relationship)	0
Age	0
Body mass index (BMI)	1.4
Socioeconomic Status (SES)	0.7
Daily guidance and coping	3.7
Religious salience	1.7
Religious attendance	1
Self-rated health	0

Table 2

Sample Discriptive Characteristics: Midlife in the U.S. Study (*n* = 295)
(Milwaukee Refresher Data Collected in 2012)

Characteristics	M +/- SD	%
Biological sex (1 = male)		37.3
Marital status (1 = relationship)		21
Age	44.87 +/- 10.1	
Body mass index (BMI)	31.72 +/- 8.71	
Socioeconomic Status (SES)	.99 +/- .65	
Daily guidance and coping	3.01 +/- .93	
Religious salience	2.98 +/- .73	
Religious attendance	3.17 +/- 1.61	
Self-rated health	2.92 +/- 1.19	

Table 3

Zero-Order Bivariate Correlations Among Study Variables

Variables	1	2	3	4	5	6	7	8	9
1. Male	---								
2. Age	-.02	---							
3. Body Mass Index (BMI)	-.28**	-.09	---						
4. Marital status	.19**	.05	.04	---					
5. Secioecominc status (SES)	.07	.17**	-.04	.28**	---				
6. Daily guidance and coping (DGC)	-.21**	.13*	.05	-.18**	-.04	---			
7. Religious salience	-.15*	.24**	.08	-.08	-.01	.58**	---		
8. Religious attendance	-.12*	.06	.04	.01	-.03	.48**	.55**	---	
9. Self-rated health	-.01	-.07	-.19**	-.04	.18**	.04	.02	-.02	---

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

Table 4

Self-Rated Health Regressed on Religiosity Variables

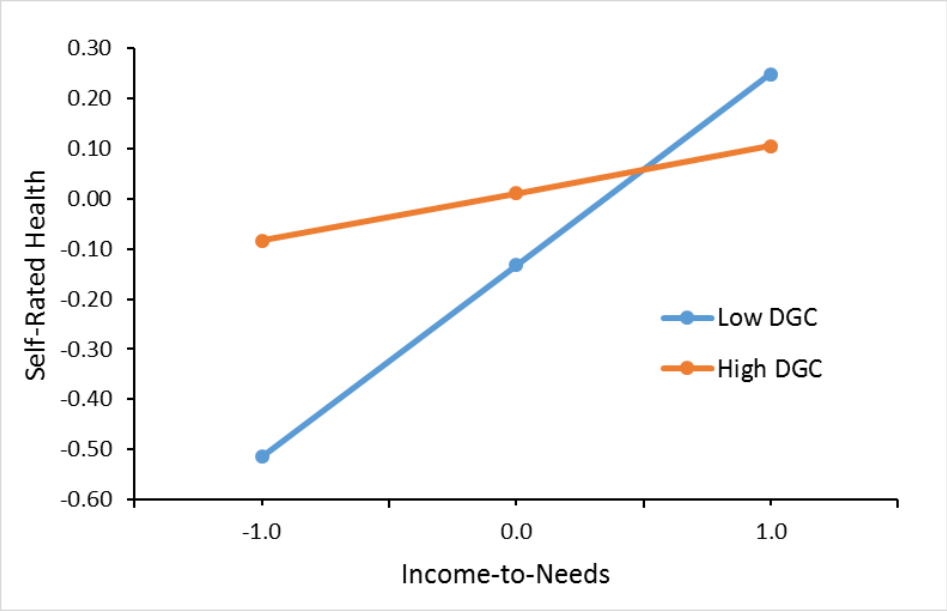
Variable	Model 1 *B* (SE) Main Effects	Model 2 *B* (SE) Daily Guidance and Coping	Model 3 *B* (SE) Religious Salience	Model 4 *B* (SE) Religious Attencane	Model 5 *B* (SE) All Competing Moderators
self-rated health					
(Constant)	-.06 (.08)	-.06 (.08)	-.03 (.08)	-.02 (.08)	-.06 (.08)
Sex	-.12 (.13)	-.13 (.13)	-.18 (.13)	-.18 (.13)	-.15 (.13)
BMI	-.21 (.06)***	-.22 (.06)***	-.23 (.06)***	-.22 (.06)***	-.23 (.06)***
Age	-.13 (.06)*	-.13 (.06)*	-.13 (.06)*	-.12 (.06)*	-.14 (.06)*
Marital status	-.05 (.06)	-.07 (.06)	-.07 (.06)	-.06 (.06)	-.06 (.06)
SES	.22 (.06)***	.24 (.06)***	.23 (.06)***	.22 (.06)***	.24 (.06)***
DGC	.06 (.06)	.07 (.06)			.07 (.08)
SESxDGC		-.14 (.06)*			-.12 (.07)
Religious salience			.06 (.06)		.07 (.08)
SESxRS			-13 (.06)*		-.05 (.08)
Religious attendance				-.01 (.06)	-.07 (.08)
SESxRA				-.09 (.06)	.01 (.08)

* $p < .05$. *** $p < .001$

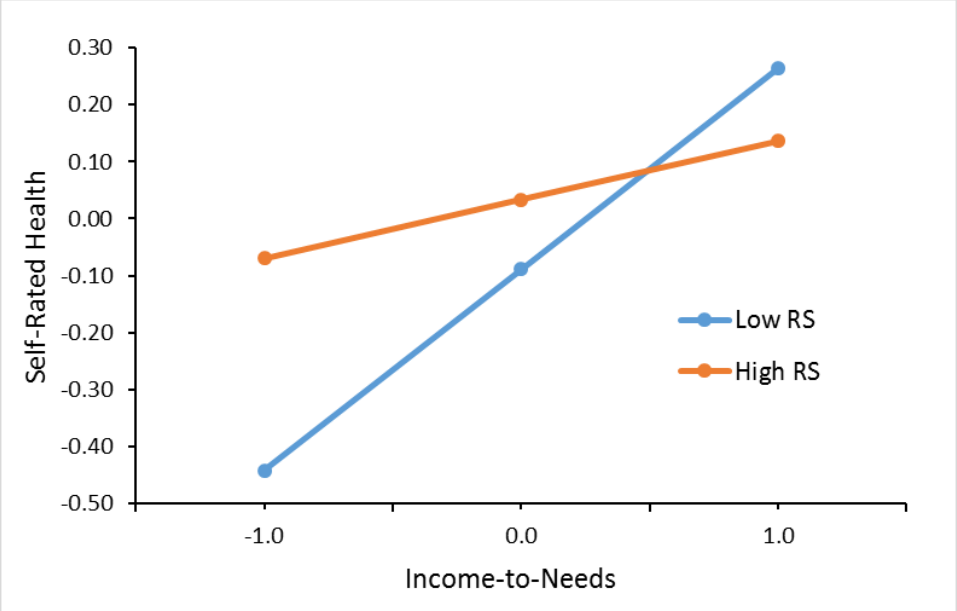
Appendix B – Figures

Figure 1 – Plotted Interactions of Self-Rated Health Regressed onto Reliosity Measures

Daliy Guidance and Coping



Religious Salience



Appendix C – Questionnaire Measures

Daily Guidance and Coping (R)

Answer how often for each of the following.

a. When you have decisions to make in your daily life, how often do you ask yourself what your religious or spiritual beliefs suggest you should do?
b. How often do you seek comfort through religious or spiritual means such as praying, meditating, attending a religious or spiritual service, or talking to a religious or spiritual advisor?

Coding: 1 = Often, 2 = Sometimes, 3 = Rarely, 4 = Never

Religious Salience (R)

The next questions are about being religious and being spiritual. Please think about what these words ―religious and spiritual― mean to you and answer the questions with those meanings in mind.

a. How religious are you?
b. How important is religion in your life?
c. How important is it for you—or would it be if you had children now—to send your children for religious or spiritual services for instruction?
d. How closely do you identify with being a member of your religion?
e. How much do you prefer to be with other people who are the same religion as you?

f. How important do you think it is for people of your religion to marry people who are the same religion?

Coding: 1 = Very, 2 = Somewhat, 3 = Not very, 4 = Not at all

Religious Attendance (R)

a. How often do you attend religious/spiritual services (frequency)?

Coding: 1 = Once a day or more, 2 = A few times a week, 3 = Once a week, 4 = 1-3 times per month, 5 = Less than once per month, 6 = Never