

THE RELATIONSHIP BETWEEN RELIGION AND OLDER ADULTS' PHYSICAL
HEALTH

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The following faculty members have examined the final copy of this thesis for form and content, and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Arts with a major in Sociology.

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ABSTRACT

Many studies have argued that religiosity has a favorable effect on longevity, particularly for the older population. This had led to various social service agencies, health practitioners and religious communities to accommodate the religious needs of the older population (Barkan & Greenwood, 2003). The purpose of this study is to examine the influence of religiosity on physical health in older adults. Data from the Health and Retirement Study (HRS) were used to analyze the relationship between physical health in older adults and religiosity. Religiosity was measured by religious attendance and religious salience. Physical health was measured by respondents' self-rated health. The control variables included age, race/ethnicity, educational attainment, sex and marital status. Social support was also considered an intervening variable since researchers suggest social relationships are one of the bases of religion (Krause & Cairney, 2009). The strongest finding was that higher educational attainment was associated with better ratings of health. Of the religious variables, higher religious attendance was a better predictor of better health ratings. Feelings of isolation were associated with worse health, and also had a large effect on self-rated health. Health experts should communicate with the religious communities to accommodate the needs of the older population. Religious communities can also expand their various resources to the broader community.

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CHAPTER 1

INTRODUCTION

There is a general agreement about religion having beneficial effects on older adults' well-being (Barkan & Greenwood, 2003). It has been consistently shown that religious people tend to have more favorable health compared to non-religious people (Son & Wilson, 2011). This had led to various social service agencies, health practitioners and religious communities to accommodate the religious needs of the older population (Barkan & Greenwood, 2003). Research has generally indicated mixed results as to whether or not religiosity has a direct influence on health. Some researchers have stated that it is not religion itself that benefits health directly, but the underlying forces of religion tends to benefit religious people, particularly older people. If religion does not boost health, than it has a protective effect on health and can keep it from declining any further (Benjamins, 2004).

In the United States, the average older adult has more than three functional limitations, which increases with age (Benjamins, 2004). Functional limitations can have negative consequences for older people because it negatively affects their ability to care for themselves and limits their social interaction. The older population is expected to grow significantly by 2050. Experts expect the population to grow from 43.1 million as it was in 2012 to 83.7 in 2050 (Ortman, Velkoff & Hogan, 2014).As people age, they tend to use religiosity as a coping mechanism for health decline as an alternative to pharmaceutical methods (Sun et al., 2013) Research also suggests that religious older people have lower rates of mortality than non-

religious older people (Fitchett et al., 2013). The religious community is seen to provide opportunities for older adults to become physically and socially active, delaying the onset or worsening of frailty (Park et al., 2008). Religion is a social institution that attempts to provide explanations to the purpose of life to individuals. Religion is something that is meaningful to people and has the potential to have impacts on the various aspects of life like marriage, educational choices, social networking and so forth. The religious community consolidates various resources like financial, educational, spiritual and social support that is constructive to an individual's overall health.

The purpose of this study is to examine how religiosity affects the physical health of older adults. Religiosity will be measured by worship service attendance and religious salience. Social support will be considered as a mediator between religiosity and health since it is often seen to be the basis of religion. Self-rated health will be used as a measurement of physical health. A review of the literature of the relationship between religiosity and physical health will be discussed, providing information on how the mechanisms of religion like social support can be beneficial to older people's health. Other variables in this study that have been known to affect health will also be discussed in the review. A logic model will be provided to explain how the previous literature has been used to form hypotheses of this study. Analyses of the data and results will be discussed to determine what they mean and if they are consistent with the research on religion and health. Lastly, the implications of the findings will be reviewed to suggest what the religious and health communities can do to ensure the older population receives the best help that can be provided.

CHAPTER 2

LITERATURE REVIEW

2.1 Theoretical Background

Emile Durkheim thought religion had the power to bring people together (Durkheim, 1912). Durkheim wrote that all religions contained three elements: there are beliefs situated around things considered holy or supernatural (also known as sacred), which are separate from everyday things; there are practices based on things considered holy or supernatural; lastly, every religion contained a sense of community, which meant people banded together around the same religious beliefs and practices. The creation of holiness comes from the collective effort of everyone's feelings towards something (Durkheim, 1912). The moral community formed from shared beliefs and practices is called a church (Durkheim, 1912). Religious groups share a collective conscience about the sacred and come together to unify to affirm its existence. This kind of social interaction strengthens the bonds among believers, and is seen in joyous rituals like weddings and mourning rituals such as funerals. The collective social forces of religion help to cope with the joyous aspects and hardships of an unpredictable life (Durkheim, 1912).

Although religion attempts to help people make sense of the world, it comes with its own set of expectations about behaviors and act as guidelines for acceptable actions. Specifically, religious involvement's impact on an individual's life influences behaviors and act as social control within the religious community. Religious communities provide insights that are perceived to be moral and ethical that translates into religious norms that touch on different aspects of life like marriage and child-rearing. Religious involvement may reduce exposure to

deviant behaviors and unhealthy lifestyles like illegal activities. These guidelines act as a form of social control that may maintain favorable overall health. Specifically, religious involvement may produce beneficial health outcomes. Religious involvement like attending worship services may increase health regulation which is tied to disease risk. For example, this kind of health regulation may discourage negative health behaviors like smoking, excessive alcohol intake and substance use/abuse (Ellison & Levin, 1998). Religious communities may also discourage risky sexual behaviors and may even regulate diet like avoiding certain meats, which could also benefit health (Ellison & Levin, 1998).

There is some evidence that suggests that part of the link between religion and health is from the social ties and resources that religious communities provide (Ellison & Levin, 1998). People who regularly attend worship services tend to have denser social ties and more access to social resources than people who infrequently attend worship services (Ellison & Levin, 1998). Meaningful relationships tend to develop among frequent worship attenders that may benefit them in secular settings, like networking for better employment (Ellison & Levin, 1998).

Older adults seem to be more religious than their younger counterparts, whether it is strength of belief in a higher power or religious involvement (Barkan & Greenwood, 2003). They attend religious services more often, pray and read Holy texts more frequently as well (Barkan & Greenwood, 2003). Because of older adult's higher religiosity than the younger cohorts, older people may benefit more from religious institutions, which is why research on religion and older age is significant. Older people may socially network in their religious establishment, which can have social and useful support that ends up increasing their self-esteem and religious identity.

2.2 Worship attendance

Worship attendance is associated with positive health behaviors (Caldwell & Takahashi, 2014). The relationship between attendance and health behaviors may be linked to church support, which may have an influence over health-related behaviors. For example, Maureen Benjamin's (2005) study found that religious attendance was strongly related to the use of cholesterol screenings. Religious attendance can have at least a moderate effect on health and life satisfaction. Researchers suggest that the positive effect comes from the religious communities' promotion of social resources (Barkan & Greenwood, 2003). George Fitchett and colleagues (2013) found that respondents who frequently attended religious services had better levels of instrumental activities of daily living than those who attended services infrequently. An instrumental activity of daily living is a type of functional ability that encompasses self-care activities that allows someone to live independently in their community, like shopping or handling finances (Upchurch & Mueller, 2005). On the one hand, frequent service attenders also reported higher levels of physical performance than their infrequent attender counterparts, which may suggest people who have better physical freedom are able to get to church on their own. Those who are unable to care for themselves or lack support may be unable to attend services. On the other hand, religious attendance provides an environment where people are constantly in contact with one another. This can foster valuable social relationships or companionships (Krause & Cairney, 2009). These relationships encourage a sense of belonging in their congregation. Having social support within the church acts as a haven in the complex organization of congregations. Certain church activities evoke strong emotions for example, funerals, weddings or baptisms, and give opportunities for people to bond with those who help them work through emotions (Krause & Cairney, 2009). Attending church also gives older

people the opportunity to help others, which has been shown to benefit health, especially among those who are deeply religious (Krause & Carney, 2009).

Religious attendance is negatively related to the number of functional limitations individuals suffer from (Benjamins, 2004). Researchers also found that health behaviors were the strongest predictor of functional limitations. Positive health behaviors can be a preventive measure in relation to negative health outcomes, and some religious institutions may have access to information or services about these. Religious attendance may benefit general body functioning (Hill et al., 2014). In this study, attendance was related to how well the body functions. Higher attendance is also linked to well-to-lower levels of blood pressure, lower body-mass index and lower odds of being underweight (Hill et al., 2014).

2.3 Religious salience

Religious salience represents the subject feeling of one's faith having a central or the decisive role in one's life (Petersen & Roy, 1985). People with religious salience are very committed to their faith and actively attempt to apply faith into a lifestyle. Religious salience has been shown to have an effect on health behaviors which in turn have an effect on health outcomes. Son and Wilson (2011) found that the way of thinking (positive or negative attitude) had mediating effects on the relationship between religious salience and physical health. Religious beliefs may encourage higher self-worth through teachings that a higher power is there to care for them and help to manage negative emotions or situations. Encouraging positive emotions and the ability to effectively deal with stressful or negative emotions is good for health and provides opportunities to become faithful to one's beliefs. Religious salience may not always have protective abilities against health outcomes. In fact, religious salience can be positively

related to the number of functional limitations (Benjamins, 2004), or restrictions on performing basic physical or mental tasks (Brown, O’Rand & Adkins, 2012).

Chronic pain is commonly experienced by older adults (Park et al., 2012). It is also the primary reason older adults seek medical care (Sun et al., 2013). Rather than depend on medications or over the counter pills to reduce pain, older adults are likely to use non-pharmaceutical methods like religious coping to deal with pain (Sawyer, Bodner, Ritchie & Allman, 2006, cited by Sun et al., 2013). Fei Sun and colleagues (2013) wanted to see if one’s religiousness played a role in the perception of pain intensity over time. They found that although some people may not attend services because of pain, higher levels of religious salience may delay the increase in pain intensity (Sun et al., 2013). This could be because people of faith channel their negative emotions about their physical ailments into religious activities like prayer (Sun et al., 2013).

2.4 Social support

Ellison and Levin state that (1998) that religious involvement in one’s congregation can lead to developing long-term relationships that may potentially span the better part of the life course. This helps alleviate the need for more immediate reciprocity because help providers know that they will eventually receive assistance in the future should the need arise.

Church can be a place with access to social support and services/benefits in different aspects of life like counseling (Sun et al, 2013). One of the main components in the relationship between religion and physical health is social support. Researchers suggest that social relationships are the foundation of religion (Krause & Cairney, 2009). At the same time, as one ages, social connections may dwindle, especially when coupled with health decline and/or

retirement. People who enter their later lives tend to lose a lot of roles that unfortunately are not replaced by new roles (Krause & Cairney, 2009). Sex difference is prevalent in social networks. For example, for men, social support tends to be from spouses, whereas women's social ties tend to stem from children, relatives and friends (McFall & Davila, 2008). This suggests that women may benefit from church support more so than men. Becoming an active member in the church or participating in various church activities is argued to foster a sense of belonging, which can have long-term health effects. The intensity of social support can vary, depending on the denomination or religious sect (Scheitle & Adamczyk, 2010).

Neal Krause (2006) sought to find similarities and differences between the types of church support given to older adults and possible changes in health throughout time. He identified two types of church support: anticipated support, which Krause defined as belief that future support will be there when it is needed, and enacted support, which was described as actual assistance provided by the members of the church. He found that anticipated support was positively associated with better health ratings over time as well as feelings of personal control. Enacted support, however, was negatively related to health ratings and feelings of self-control. Feelings of self-control had a major effect on health ratings, which suggests perception is a major element in self-rated health (Krause, 2006).

Krause and Hayward (2014) looked at social support more closely, seeking to find the effects of Mexican Americans' satisfaction of received support from church members on their self-rated health. Mexican-American communities tend to tie the Church with personal identity, especially among the older population (Fernandez, 2007, cited by Krause & Hayward, 2014). The researchers found that those who were satisfied with their support from their church members tended to rate their health favorably. This tended to happen, however, among those

who were deeply committed to their faith, or have higher levels of religious salience (Krause & Hayward, 2014).

Salsman, Brown, Brechting and Carlson (2005) discussed how various aspects of positive psychology influence optimism, perception of health, resilience, hopefulness, religiousness/spirituality and meaning in one's life. Although the researchers noted that social support does not fall within the positive psychology umbrella, they stated that the belief that someone has social support has beneficial impacts on mental well-being, more so than actual support given. In fact, the researchers believed that perceived social support operated in a way similar to optimism's impact on health (Salsman, et. al, 2005). Knowing that help is there when one needs it may benefit well-being because brings about positive emotions that can combat stress, which can negatively affect health.

Developing and maintaining companionship at church may influence perception of health (Krause, 2010). Companionship was defined as a type of social relationship that develops from leisure activities (Rook, 1987, cited by Krause, 2010). Neal Krause (2010) found that older adults with a companion at their church rated their health more favorably than older adults who did not have a close friend at their church. He also found that those with close friends at their church tended to have fewer outpatient visits to physicians than those with no friends at their church unless changes in health occurred. All of these finding applied to the oldest-old population, or those age 85 and older (Krause 2010).

The lack of actual or perceived social support may affect health as well. The perception that one is socially isolated (subjective lack of social resources like companionship or support) and social disconnectedness, or a lack of contact with others, are seen as health risks, especially for older people (Cornwell & Waite, 2009). Cornwell and Waite (2009) found regardless of

presence and absence of the perceptions of loneliness or lack of social support, social disconnectedness was associated with worse physical health (Cornwell & Waite, 2009). Regardless of the level of social disconnectedness, if one believed he or she lacked social resources, the perception could negatively affect his or her physical health. In terms of mental health, Cornwell and Waite (2009) found that socially disconnected older adults who felt isolated tended to have worse mental health than those who had opposite feelings. The researchers also found that social disconnectedness, or lacking contact with other people, was correlated with poor physical health. Perception of social disconnectedness was even thought to negatively affect physical health (Cornwell & Waite, 2009). Loneliness is strongly associated with mental health and social isolation was strongly associated with declining physical health (Coyle & Dugan, 2012).

2.5 Marital Status

Differences in health over time exist between marital statuses. Specifically, research has suggested that marriage has a protective effect on health outcomes, particularly for men (Liu & Umberson, 2008). Marriage may benefit health due to access to social and mental support, foster feelings of personal control and is seen as additional social support (Liu & Umberson, 2008). There is research that suggests that married people tend to overrate their health (Zheng & Thomas, 2013). In later life, men are twice as likely to be married as women, while women are more likely to be widowed (McFall & Davila, 2008). Women were also more likely to monitor their spouse's health compared to men, which could be one of many explanations as to how marriage benefits men more than women regarding health outcomes (McFall & Davila, 2008). For example, health screenings are higher for married men as well as those who attended church.

Health screenings were higher for women with strong social ties to friends, children and relatives, but there was no association between their marital status and health screening (McFall & Davila, 2008).

2.6 Race and Ethnicity

Research has generally suggested that there are racial and ethnic differences in health outcomes. Minority older adults generally tend to rate their health poorer than their White counterparts (Park et al., 2012). Although educational attainment narrows the gap between minorities and Whites' health outcome, members of minority groups (like Black people) still tend to rate their health lower than Whites (Cummings & Jackson, 2008). Regardless of socioeconomic status, Black women have the poorest health outcomes compared to Black men, White women and White men (Cummings & Jackson, 2008). Although racial/ethnic minorities' and Whites' functional limitations increase and health decline altogether with age, there were still health trajectory disparities between racial minorities and Whites. Specifically in one study, there were gaps in the path of health between Blacks and Whites, but a larger gap between Latinos and Whites (Cummings & Jackson, 2008). The differences between minorities and whites are sharper when focusing on serious health conditions (Brown, O'Rand & Adkins, 2012). There is a complex intertwining of demographic, socio-economical, psychological, biological and physical environment factors that play into risk factors of developing serious conditions.

It is not race itself that has the impact, but rather social and demographic factors impact on race (Yao & Robert, 2008). Racial discrimination has been shown to have a negative effect on health behaviors on racial and ethnic minorities. Minority groups tend to have more chronic

illnesses than their White counterparts. Researchers believe this is the case because minority groups have a higher likelihood of being exposed to various risk factors like poor housing, access to quality health care and social conditions like discrimination (Brown, O’Rand & Adkins, 2012). Stereotyping and discrimination of minority patients may explain unequal medical treatment and inadequate healthcare quality. Exposure to discrimination may lead to development of unhealthy behaviors like binge drinking or smoking (Caldwell & Takahashi, 2014). Racial segregation in neighborhoods can affect access to adequate health care, may have unequal distribution of resources and housing can impact health throughout time. If one has a chronic illness or disability and lives in inadequate housing without neighborhood health resources, conditions may worsen (Yao & Robert, 2008).

The meaning of religion may also differ across racial/ethnic groups. For some racial/ethnic group, the Church as has provided a sense of psychological well-being and dignity in times of discrimination and overt racism in the United States (Krause & Hayward, 2014). Historical social issues that have affected racial minorities have made the church the centerpiece in social ties and culture for minority groups like African-Americans and Mexican-Americans (Ajibade et al., 2015; Krause & Hayward, 2014). Some researchers have suggested that religion has a buffering effect on minority health, especially among older minority people (Krause & Hayward, 2014).

2.7 Socioeconomic status

Socioeconomic status is a very strong predictor of health outcomes. Although this is the case, socioeconomic status is a multidimensional concept; it entails level of education, household income, household wealth, value of investments in stocks and so forth (Smith, 2007). Similar to

married people, socioeconomically advantaged people tend to overestimate their health. This may be because individuals from different education and income levels may evaluate their health differently when answering self-rated health items (Dowd & Zajacova, 2007). People with higher socioeconomic statuses also tend to engage in more positive health behaviors like eating healthy foods and exercising than socioeconomically disadvantaged people. Adequate health care is more accessible to higher SES groups as well (Dowd & Zajacova, 2007). The gap between socioeconomic status and health widens as people age. Changes in income over time mediate the relationship between age and health (Kim & Durden, 2007). Although research has shown that long-term poverty negatively affects health, it has also shown that drops in income are detrimental to health as well. The causes of income drop can range from unemployment, retirement, becoming a parent, divorce or separation (Benzeval & Judge, 2001). However, level of education is argued to be the primary influence over health outcomes (Smith, 2007).

2.8 Sex

There are sex differences in health outcomes between men and women. Women report higher levels of functional decline than men (Hybels et al., 2014). Specifically, women experience worse chronic conditions, pain, functional limitations and issues with instrumental activities of daily living (Pudrovskaya, 2014). Despite this, other research states women report better self-rated health than men (Rohlfesen & Kronenfeld, 2014). Research, however, has noted that women tend to overrate their health. This could suggest that men and women use different measures for determining how well they are. Sex does not inherently create health differences, but rather the social stratification between males and females. Females specifically are disadvantaged from the stratification system that also influences their health (Rohlfesen &

Kronenfeld, 2014). Issues particularly dealing with retirement and unemployment influence people's health as they age (Rohlfesen & Kronenfeld, 2014). Situations like transitioning from employment to unemployment or retirement status affect income, which in turn affect men's health status more than it does women. The start of health conditions during middle to later life also seems to affect health status of men more than it does women (Rohlfesen & Kronenfeld, 2014).

CHAPTER 3

MODEL AND HYPOTHESES

This study explores variables that previous studies have shown to affect physical health, particularly of older adults. Physical health is the dependent variable. The independent variables are religious attendance and religious salience, which serve as the religiosity model segment in the study. Race/ethnicity, educational attainment, sex and age are the control variables and serve as the demographic model segment. Social support, social isolation and marital status are the intervening variables which also serve as the social support model segment.

3.1 Research Questions

1. In what ways does religiosity influence the health of older adults?
2. Which measures of religiosity is a stronger predictor of health variations?
3. Is social support a mediating variable in the relationship between religion and health?
4. Do religiosity and social support have separate effects on health?

Figure 1 shows how the variables influence physical health as well as the relationship between the variables.

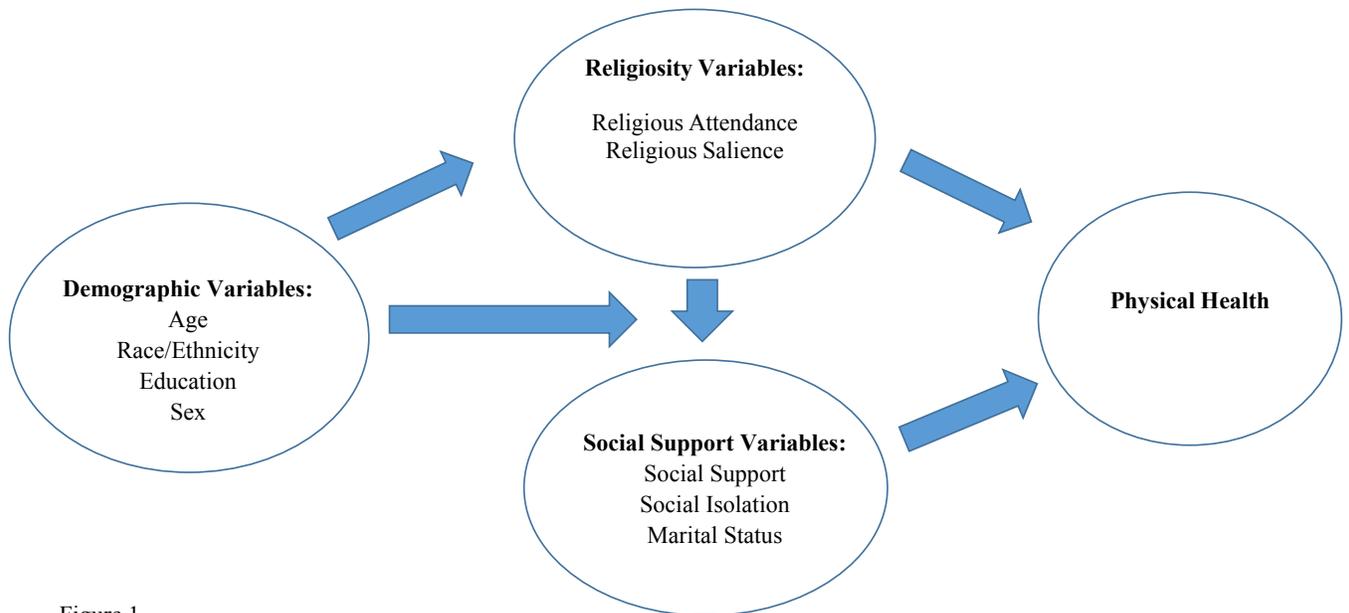


Figure 1

Religiosity refers to the different aspects of expressing one’s faith. It is typically used as a measurement to examine how religion influences different aspects of life such as family structure, health habits and so forth. For the purpose of this study, religiosity will be measured by religious attendance and religious saliency. Social support will be measured by feelings of social support, feelings of social isolation and marital status. Educational attainment will act as a window for measuring socioeconomic status. Physical health will be measured by a self-rated health item.

Hypothesis 1: Higher religious attendance leads to better ratings of physical health.

Hypothesis 2: Higher levels of religious saliency lead to better ratings of physical health.

Hypothesis 3: Feelings of social support will be related to better ratings of health.

Hypothesis 4: Married people will rate their health better than non-married people.

Hypothesis 5: Feelings of social isolation will be related to worse ratings of health.

Hypothesis 6: Females will rate their health better than males.

Hypothesis 7: Age increase will be related to worse ratings of health.

Hypothesis 8: White non-Latino respondents will rate their health better than non-White individuals.

Hypothesis 9: Higher educational attainment will be related to better ratings on health.

CHAPTER 4

DATA AND METHODS

The data come from the Health and Retirement Survey (HRS). HRS is a nationally representative survey of noninstitutionalized, pre-retired and retired adults in their later years of life in the United States (HRS 2008). Researchers from the University of Michigan collected the data, which is publicly available on the HRS website. It is also sponsored by the National Institute of Aging and Social Security Administration. There were 17,217 interviews that were completed during Wave 9 (2008). Participants under the age of 55 years were excluded. Cases with missing data on any of the measurement items were excluded. Finally a relative weight was created by dividing the original weight by the mean of the original weighted variable. The relative weight was then applied to avoid producing false positives regarding statistical significance in large samples. Cases whose weight were less than or equal to zero were also excluded. The final sample size for this study was 6,236 respondents.

4.1 Variables

4.1.1 Dependent variables

The dependent variable is physical health. This will be measured by the subjective health item “Would you say your health is excellent, very good, good, fair, or poor?”, This was measured by a self-rated health question that was set up similar to the Likert scale where 1 is “excellent” and 5 is “poor.” This means a higher value indicates worse health.

4.1.2 Independent Variables

The independent variable is religion, which will be measured by two items. This will be measured by attendance at religious services and religious salience. The responses for the religious attendance variable were: 1 equaled “more than once a week”; 2 equaled “once a week”; 3 equaled “two or three times a month”; 4 was “more than once a year” and 5 was “not at all.” Religious salience was measured by the item: “How important God is to me”: 1 equaled “very important”; 2 was “somewhat important” and 3 was “not too important.” The “somewhat important” and “not very important” categories were combined, where the respondents were separated into two categories: “very important” and “not very important.” Combining the categories was done to compare highly religious people to low or not very religious people.

4.1.3 Support variables

Social support was measured by the item “how often do you feel you have someone to turn to?” Three categories were given: 1 was “often; 2 was “some of the time” and 3 was “hardly ever.” The “hardly ever” and “some of the time” categories were combined to compare those who often felt they had social support to those who did not feel that way very often. Zero was given to the “not very often” category and 1 was the value for “often.” Social isolation was measured by the item “how often do you feel socially isolated from other?” The responses were: 1 for “often”; 2 for “some of the time and 3 for “hardly ever.” The “hardly ever” and “some of the time” categories were combined to compare those who often felt they were socially isolated to those who often did not feel that way very . Zero was given to the “not very often” category and 1 was the value for “often.” The marital status variable was changed to compare married

people to those who were not married at the time of the study. The categories are: married and non-married.

4.1.4 Control variables

The control variables will be those that have been arguably viewed to be associated with religiosity: sex, race/ethnicity, age, and socioeconomic status. Age was a continuous variable, but the sample was restricted to respondents who were ages 55 and over. Socioeconomic status will be measured by the highest education degree obtained. The “GED” and “high school diploma” categories were combined. “Some college/unknown” and “two year degree” categories were also combined to create the “some college/two year degree” category. Lastly, the “Master’s degree” and “professional degree” were combined to create the “Master’s or higher” category. The new codes for this variable ranged from: 1 equaled “less than a high school degree” and 5 equaled “Master’s degree or higher.”

The race and ethnicity and Hispanic ethnicity variables were combined into one race/ethnicity variable. The ethnicity question asked respondents if they considered themselves Hispanic or Latino, which was a binary variable (1 for yes and 2 for no). The race variable categories were: White/Caucasian, Black/African-American and Other. For example, if the respondent answered “1”, identifying as white on the race variable and “2”, identifying as non-Latino from the ethnicity variable, the new race/ethnicity variable recoded the respondent as “white, non-Latino.” The categories created for the new variable are White non-Latino and non-White. Since more than three-quarters of the sample was White, it was decided to simply compare White and minority health ratings. Sex was recoded from 1 for females and 2 for males, to 0 for males and 1 for females.

CHAPTER 5

RESULTS

5.1 Univariate analysis

Descriptive statistics are shown in table 2. Table 1 shows the responses from the self-rated health item. Almost 11% of the sample reported excellent health; 31% of the sample reported their health as being very good; about 31% reported good health; 19% of respondents reported having fair health and around 8% reported having poor health.

About 14% of respondents said they attended service more than once a week while a quarter of the sample attended once a week (Table 1). Eleven percent attended service 2-3 times a month, 21% attended more than once a year and 28% did not attend at all. The majority of the respondents (63%); reported their religion to be very important to them; nearly 37% of the sample reported their religion as not very important.

Table 1 also shows the frequency of feelings of isolation. Thirty-five percent said they felt isolated some of the time or often; almost two-third of respondents reported hardly ever feeling isolated (65.2%). Social support was measured by the item referring to how often respondents felt they had someone to turn to. Almost two-third of respondents reported they often felt they had someone to turn to (63.3%); about 37% did not often feel they had someone to turn to. Table 1 also shows the marital status of the respondents. More than half of the sample was married (60%). Forty percent of the sample was not married, which includes divorced, annulled, widowed, never married and other.

Table 1 shows the sex distribution of the respondents. The variables were recoded so it would be “0” for males and “1” for females. About 44.4% of the sample was male, and 55.6% of the sample was female. Table 1 shows the race/ethnicity of the respondents. 84% of the sample identified as White non-Latino; 16% identified as non-White.

About 16% of the sample had less than a high school diploma; more than half the sample’s highest level of education was a high school diploma or equivalent (54.%). Nearly 5% obtained an Associate or some college; 14% received a Bachelor’s degree and about 11% had a Master’s degree or higher.

Table 2 presents the mean, median, range, standard deviation of the variables. Age was restricted to ages 55 and above. The mean age (Table 2) of the sample was around 67.25 years, with a standard deviation of nearly 9.54 years. The median was 65 years and the mode was 58 years. Age ranged between 55 to 107 years, with the range being 52 years.

5.2 BIVARIATE ANALYSIS

5.2.1 T-Tests

An independent samples T-test (Table 3) was conducted for the relationship between religious salience and health. Very religious people reported worse health than not very religious people by only .03 points. There was no statistical difference.

Another independent samples T-test was conducted on feelings of social support. Those who had feelings of social support reported better health than those without feelings of support by .38 points. This was statistically significant. A Cohen’s *d* is a test to determine whether or not statistical significance from the independent samples T-tests is meaningful differences, or if they are simply significant due to the large sample size. The Cohen’s *d* test for feelings of social

support was $-.35$, which means there is a meaningful difference between those with feelings of social support and those who did not have feelings of social support.

An independent samples T-test was conducted on the relationship between marital status and self-rated health. Non-married people reported the worse health than married people by $.35$ points. This was statistically significant. The Cohen's d value was $-.31$, which means there is meaningful difference between married and non-married people's health.

An independent samples T-test was conducted for the relationship between feelings of social isolation and health. Those with feelings of social isolation reported significantly worse health than those without feelings of social isolation by $.46$ points. This was statistically significant, and the Cohen's d value was $.40$, which means the differences between the two groups are not due to sample size.

An independent samples T-test (Table 11) was conducted for the relationship between sex and health. Women's ($n=3,467$) health was worse by only $.01$ points than men ($n=2,769$), and there was no statistical significance.

Another independent sample T-Test was conducted for the relationship between race/ethnicity and health. Whites ($n=5,237$) rated their health higher than non-Whites ($n=999$) by $.54$ points. This was statistically significant, and the Cohen's d was $-.5$, implying there is a meaningful difference in health between Whites and non-Whites.

5.2.2 Correlations

Pearson's r correlations were conducted to examine linear relationships between the independent variables and health. Better health was significantly but weakly associated with higher frequency of religious attendance (Table 4) ($R=.105$, $p<.001$). Higher education was

moderately and significantly associated with better health ($R=-.303$, $p<.001$). Increase in age was not related to higher religious attendance, but was statistically significant ($R=-.081$, $p<.001$).

Worse health was significantly, but weakly associated with age ($R=.109$, $p<.001$).

5.3 MULTIVARIATE ANALYSIS

5.3.1 Tests for Assumptions:

The dependent variable, self-rated health, was normally distributed. To check for whether or not the variables are related to one another, a Pearson correlation was conducted on the independent, intervening and control variables. None of the independent variables were correlated over .70 with any other independent variable, which means none of the variables are highly similar to one another. Tests were conducted to examine if outlier values were greatly affecting regression results. The maximum found in the Mahalanobis distance test was 24.8 and the maximum for the Cook's distance test was less than one, which means no outliers, if any, affected the regression results. There were no outliers to report or remove.

5.3.2 Simple Regression:

Table 5 shows an ordinary least squares regression analysis, which was conducted to evaluate how well the variables religious salience, religious attendance, race/ethnicity, age, marital status, social support, social isolation and education predicted perception of health. Again, self-rated health was coded so that a higher value indicates worse health.

As religious attendance decreased, self-rated health decreased by .089 points. For religious salience, very religious people rated their health worse than non-very religious by .078 points. Those who reported that they did not often feel they had social support had .155 points

worse health than those who felt they often had social support. Married people rated their health .183 points better than non-married people. Those who had feelings of social isolation scored their health .347 worse than those who did not feel socially isolated.

Females rated their health better than men by .055 units. For each yearly increase in age (Table 5), health decreased by .010 points. Non-White people rated their health .411 worse than their White counterparts. For each level increase in education, self-rated health was better by .215 points.

Comparing the standardized betas, education had the largest standardized beta at -.240. With a standardized beta of .150, social isolation had a larger effect on self-rated health than the other variables, as well as identifying as non-White, which had a standardized beta of -.137. Lastly, religious attendance had a standardized beta of .117. All the variables showed statistical significance.

5.3.3 Partitioning the Variance

The variance was partitioned to determine how much of the variance is attributed to each variable. It provides information about how much of a role the variables play in predicting health. Although I argue religiosity and social support go hand in hand, partitioning the variance reveals separate effects of religiosity and social support. The adjusted R^2 is .179 ($p < .001$) (Table 5) for the OLS regression model containing three model segments, so nearly eighteen percent of variance in self-rated health is explained by all these variables combined. When the religiosity model segment was removed, the R^2 decreased to .138. The religiosity model segment accounted for 15% of the variance on perception of health. When the demographic structural model segment was removed, the R^2 decreased to .085. Therefore, the demographic segment has a

greater impact on self-rated health than the rest of the model segments. The demographic model segment accounts for 62% of the variance of perception of health, while the second segment accounts for 38% of the variance of self-rated health. Lastly, when the social support model segment was removed, the R^2 decreased to .168. This model segment accounted for 23% of the variance of self-rated health.

CHAPTER 6

DISCUSSION

The purpose of the study was to examine the effects of religion on older adults' health. The study used Durkheim's perspective on religion and social solidarity to explain how religion impacts health as well as review the literature for further explanation. Durkheim wrote how religion was a mechanism for social solidarity (Durkheim, 1912). This study further argues that social support is a mechanism within religion that helps explain the beneficial effects religion has on health of the older population. Research on religion's influence of older adult's health is important because older people tend to be more religiously involved than their younger counterparts, and have lower mortality rates than non-religious older people. This study examined hypotheses that were drawn from previous research on religion's impact on the health of older adults.

Hypothesis 1 stated that higher religious attendance leads to better ratings of physical health. Bivariate and multivariate tests revealed that higher religious attendance had a weak but positive relationship with better health. This is consistent with the previous literature that suggests attendance as the stronger religiosity measurement to predict positive health outcomes (Benjamin 2004; Benjamin, 2005; Caldwell & Takakashi, 2014; Fitchett et. al, 2013; Hill et. al, 2014; Upchurch & Mueller, 2005). It could be that healthier older people are more likely to attend worship services, so the causality direction of the relationship between religiosity and health is not certain. Older people with declining health or have limited mobility may not be able to attend worship service despite the desire to attend.

Hypothesis 2 stated that higher levels of religious salience lead to better ratings of physical health. Bivariate tests revealed no association between religious salience and health ratings. There was little to no difference between the very-religious and not-very-religious respondents. Multivariate analysis revealed a small but significant association between high religious salience and worse health. This is consistent with Maureen Benjamin's (2004) finding about higher religious salience being positively related to more functional limitations.

Hypothesis 3 stated that feelings of having social support would be related to better ratings of health. This was supported by analyses, which means social support was weakly associated with better health even after controlling for the other variables in multivariate analyses. Although the strength of the relationship between social support and health was weak, it was still significant. This suggests that having some sort of social support, or having feelings of social support is beneficial to health, or at least perception of health. Having some sort of social support may produce positive feelings, which may produce positive perception of one's health.

Hypothesis 4 stated that married people would rate their health better than non-married people. Bivariate tests revealed married people rated their health .35 points better than non-married people. Better health ratings for married people remained in the multivariate analyses, even after controlling for other factors. Both analyses supported the hypothesis, and were consistent with the literature suggesting married people reported better health than non-married people. It is possible that married people overestimate their health like other socially advantaged people (Liu & Umberson, 2008; Zheng & Thomas, 2013).

Hypothesis 5 stated that feelings of social isolation would be related to worse health ratings. This was also supported by the analyses, and was the one of the strongest findings in

predicting health ratings. This finding was consistent with the empirical research literature (Cornwell & Watie, 2009; Coyle & Dugan, 2012), which suggests that the perception of being socially isolated may be detrimental to overall health. This is also consistent with Durkheim's theory of how social cohesion is generally beneficial to people (Durkheim, 1912, cited in Cohen & Emirbayer, 2003).

Hypothesis 6 stated that females would rate their health better than males. This was not supported by bivariate analyses; there was hardly any difference in health ratings between males and females. However, multivariate analyses revealed females rated their health .05 points better than men and this difference was significant. The multivariate analyses support previous literature on gender differences in health (Rohlfen & Kronenfeld, 2014), which suggested that women rated their health better than men. It could possibly be consistent with literature that suggested that women tend to overrate their health more than men (Rohlfen & Kronenfeld, 2014). Hypothesis 7 stated that an increase in age would be related to worse health ratings. Bivariate tests revealed a weak positive relationship between age and worse health. This remained true in the multivariate analyses, suggesting age was not the biggest influence on health ratings, but was still significant.

Hypothesis 8 stated that White non-Latino respondents would rate their health better than non-White respondents. The bivariate tests revealed White non-Latino respondents rated their health a half point higher than non-Whites. Net of all the other variables, a race/ethnicity difference in health ratings remained and was one of the strongest findings. This was consistent with previous literature (Brown, O'Rand & Adkins, 2012; Cummings & Jackson, 2008; Park et al, 2014; Yao & Robert, 2008).

Hypothesis 9 stated that higher educational attainment would be related to better ratings in health. This was supported by the bivariate analyses, which means educational attainment is associated with better health ratings. This was the strongest finding net of all other factors in the multivariate analyses. This finding is consistent with the literature (Dowd & Zajacova, 2007). It could be possible that those who obtain higher levels of education apply skills like decision making, problem solving and crisis prevention from their studies/career to their personal life aspects like food intake and physician visits as well as higher likelihood to take preventive measures to their health (Smith, 2007).

Partitioning the variance revealed that demographic factors were the strongest predictor of health ratings. This is consistent with findings above because the strongest separate predictors were educational attainment and race/ethnicity. The demographic factors shape religiosity and social support since both of them differ by race, sex, socio-economic status and age. Although the religiosity explained the smallest portion of health ratings, it still was a significant finding, and shows that religion does have effects on health apart from social support. The social support model revealed that social support has a positive and major impact on health.

6.1 Limitations

This was a cross-sectional study, so causality between the variables and health cannot be determined. This study also used the public data version of the Health and Retirement Study, which did not allow the use of specific physical health-related questions, which may affect the strength of the study. Self-rated health was a general health-related question with an abundance of respondents, and relies on the respondents' general perception of their health status. Physical

health can be measured objectively by health records. The restricted data also had a limited number of religiosity variables with enough respondents to use in the study.

The social support variable analyzed during this study was very general compared to the previous literature discussed at the beginning of the study. The kind of social support the respondents may have been receiving, therefore, could not be determined. Where the social support was coming from could also not be determined from this study, so support of the social support hypothesis remaining consistent with previous literature is unclear.

6.2 Future Studies

Future studies could explore if religiosity affects physical health using variables that directly measure various aspects of physical health. It would be helpful to explore what other factors have a large effect on physical health, such as preexisting conditions before reaching older age or health trajectories throughout an individual's life. Examining other measurements of religiosity like prayer should also be taken into consideration. Respondents' health habits is a mediating variable that previous research suggests is influenced by religion and could be examined by researchers who seek to find a link between religion and health. It would be interesting to examine what kinds of health behaviors the older population engaged in before entering their later years. Comparisons of the types of social support older people receive and health trajectories could be made to see if there are variations in health outcomes and/or older adult's satisfaction with the support they receive. Ethnic minorities' differences in social support and religiosity can be further explored to see if there are health variations between groups, and if religiosity is a protective factor among certain minority or majority groups. Lastly, further explanations as to why education and health are linked could be examined with more research.

CHAPTER 7

CONCLUSION

This study is an introduction as to what factors influence the health of the older population. Religion is a social institution that attempts to explain the meaning of life and make sense of the world, with a set of beliefs, practices and rituals, and is very significant in many people's lives (Durkheim, 1912). Religiosity was argued to be an indirect influence to overall health, with social support as the intervening factor (Durkheim, 1912; Ellison & Levin, 1998; Krause, 2006; Krause & Carney, 2009; Krause & Hayward, 2014). Durkheim believed religion was a source of social unity that positively benefitted people (Durkheim, 1912). Although it was originally argued that religiosity and social support are intertwined in the relationship between religiosity and health, this study has revealed that religiosity and social support have separate effects on health ratings. Health experts should look into communicating with the religious communities to help accommodate the health needs of their older population. Religious communities should also expand their resources to the communities in which they are located, especially in communities that are lacking social, financial and educational resources.

Experts should also be mindful of the relationship between education levels and health status to ensure a decrease in the gap between the health of people with high and low education (Smith, 2007). Older people with little education may not have or know about access to preventive health measures or strategies. Religious communities sometimes provide various educational services like GED classes or tutoring not only for their members, but for the general public as well. Providing access to health literacy could also be something religious communities

can provide to make sure the people they serve have knowledge about maintaining or having a healthy lifestyle.

Socially isolated older people and those who perceive themselves to be isolated are at risk and should be a concern to the health community (Cornwell & Waite, 2009). Policymakers could assign case workers to older people who lack social resources so that the older people have someone to assist them with getting access to mental and physical healthcare. Case workers could also assist socially isolated older adults with mobility becoming social aspects like transportation to various events or worship services or other social functions. by providing transportation to social functions. Communities with a large number of older people could also create social activities that is inclusive to older people so that social bonds may form among community members who may seek to care for their neighbors in need.

Lastly, racial/ethnic differences in health should be taken into consideration by health practitioners, especially since some racial minorities generally have worse health than their white counterparts net of socio-economic status and educational levels (Cummings & Jackson, 2008). Access to healthcare, as well as receiving quality of health care racial minorities receive would help to narrow the gap between white and minority people. Evaluating doctor-patient interaction would be helpful to determine if patients of all ethnicities are receiving the best care and treatment.

I believe the religious community can come together with health experts and social service organizations to help their older members, and even nonmembers thrive emotionally and physically. Religious communities have various sorts of resources that are very relevant to physical health and life satisfaction, which may help reduce the need of welfare and health intervention that tend to be costly.

REFERENCES

REFERENCES

- Ajibade, Adebayo; Hook, Joshua; Utsey, Shawn; Davis, Don & Tongeren, Daryl R.V. (2015). Racial/Ethnic Identity, Religious Commitment, and Well-Being in African Americans. *Journal of Black Psychology*, 1-15.
- Barkan, Steven & Greenwood, Susan (2003). Religious Attendance and Subjective Well-Being among Older Americans: Evidence from the General Social Survey. *Review of Religious Research*, 45, 116-129.
- Benjamins, Maureen (2004). Religion And Functional Health Among The Elderly: Is There A Relationship And Is It Constant? *Journal of aging and health* 16, 355-374.
- Benjamins Maureen (2005). Social Determinants Of Preventive Service Utilization: How Religion Influences The Use Of Cholesterol Screening In Older Adults. *Research of aging* 27,475-497.
- Benzeval, Michaela & Judge, Ken (2001) Income and Health: The Time Dimension. *Social Science and Medicine*, 52, 1371-1390.
- Brown, Tyson; O’Rand, Angela & Adkins, Daniel (2012). Race-Ethnicity and Health Trajectories: Tests of Three Hypotheses across Multiple Groups and Health Outcomes. *Journal of Health and Social Behavior*, 53, 359-377.
- Caldwell, Julia & Takahashi, Lois (2014). Does Attending Worship Mitigate Racial/Ethnic Discrimination in Influencing Health Behaviors? Results from an Analysis of the California Health Interview Survey. *Health Education and Behavior*, 41, 406-413.
- Cornwell, Erin Y. & Waite, Linda (2009). Social Disconnectedness, Perceived Isolation, and Health among Older Adults. *Journal of Health and Social Behavior*, 50, 31-48
- Coyle, Caitlyn & Dugan, Elizabeth (2012). Social Isolation, Loneliness and Health among Older Adults. *Journal of Aging and Health*, 24, 1346-1363.
- Cummings, Jason & Jackson, Pamela Baboy (2008). Race, Gender, and SES Disparities in Self-Assessed Health, 1974-2004. *Research on Aging*, 30, 137-168.
- Dowd, Jennifer B. & Zajacova, Anna (2007). Does the Predictive Power of Self-Rated Health for Subsequent Mortality Risk vary by Socioeconomic Status in the US? *International Journal of Epidemiology*, 36, 1214-1221.

- Durkheim, E. (1912). The Elementary Forms of Religious Life. In I.J. Cohen; M. Emirbayer, Emile Durkheim: Sociologist of Modernity (pp. 84-90, 109-122). Malden: Blackwell Publishing.
- Ellison, Christopher & Levin, Jeffrey (1998). The Religion Health Connection: Evidence, Theory and Future Direction. *Health Education and Behavior*, 25, 20-26.
- Fitchett, George; Benjamins, Maureen; Skarupski, Kimberly & Mendes de Leon, Carlos (2013). Worship Attendance And The Disability Process In Community-Dwelling Older Adults. *Journals of Gerontology, Series B: Psychological Sciences and Social Sciences*, 68, 235-245.
- Garfield, Craig F; Isacco Anthony and Sahker, Ethan (2012). Religion and Spirituality as Important Components of Men's Health and Wellness: An Analytic Review. *American Journal of Lifestyle Medicine* 7, 27-37.
- Health and Retirement Study (HRS) (2008). Available from <http://hrsonline.isr.umich.edu/>
- Hill, Terrence; Rote, Sunshine; Ellison, Christopher & Burdette, Amy (2014). Religious Attendance and Biological Functioning: A Multiple Specification Approach. *Journal of Aging and Health*, 26, 766-785.
- Hybels, Celia; George, Linda; Blazer, Dan; Pieper, John; Cohen, Harvey & Koenig, Harold (2014). Inflammation and Coagulation as Mediators in the Relationships between Religious Attendance and Functional Limitations in Older Adults. *Journal of Aging and Health*, 26, 679-697.
- Krause, Neal (2010). Close Companions at Church, Health and Health Care Use in Late Life. *Journal of Aging and Health*, 22, 434-453.
- Kim, Jenyoung & Durden, Emily (2007). Socioeconomic Status and Age Trajectories of Health. *Social Science & Medicine*, 65, 2489-2502.
- Krause, Neal (2006). Church Based Social Support and Change in Health Over Time. *Review of Religious Research* 48 125-140.
- Krause, Neal & Cairney, John (2009). Close Companions at Church, and Health in Late Life. *Review of Religious Research*, 51, 181-200.
- Krause, Neal & Hayward, R. David (2014). Church-Based Social Support, Religious Commitment, and Health among Older Mexican Americans. *Journal of Social and Personal Relationships*, 31, 352-365.
- Lawler-Row, Kathleen & Elliot, Jeff (2009). The Role of Religious Activity and Spirituality in the Health and Well-being of Older Adults. *Journal of Health Psychology*, 14, 43-52.

- Levin, Jeff; Chatters, Linda & Taylor, Robert Joseph (2011). Theory in Religion, Aging and Health: An Overview. *Journal of Religion and Health*, 50, 389-406.
- Liu, Hui & Umberson, Debra (2008). The Times They Are a Changin': Marital Status and Health Differentials from 1972 to 2003. *Journal of Health and Social Behavior*, 49, 239-253.
- McFall, Stephanie & Davila, Marivel (2008). Gender, Social Ties and Cancer Screening Among Elderly Persons. *Journal of Aging and Health*, 20, 997-1011.
- Ortman, Jennifer; Velkoff, Victoria & Hogan, Howard (2014). An Aging Nation: The Older Population in the United States. Available from <http://www.census.gov/prod/2014pubs/p25-1140.pdf>
- Park, Nan Sook; Jang, Yung; Lee, Beom & Chiriboga, David (2012). Racial/Ethnic Differences in Predictors in Self-Rated Health: Findings from the Survey of Older Floridians. *Research on Aging*, 35, 201-219.
- Park, Nan Sook; Klemmack, David; Roff, Lucinda; Parker, Michael, Koenig, Harold; Sawyer, Patricia & Allman, Richard (2008). Religiousness and Longitudinal Trajectories in Elders' Functional Status. *Research on Aging*, 30, 279-298.
- Petersen, Larry & Roy, Anita (1985). Religiosity, Anxiety, and Meaning and Purpose: Religion's Consequences for Psychological Well-Being. *Review of Religious Research*, 27, 49-62.
- Rohlfen, Leah & Kronenfeld, Jennie Jacobs (2014). Gender Differences in Trajectories of Self-Rated Health in Middle and Old Age: An Examination of Differential Exposure and Differential Vulnerability. *Journal of Aging and Health*, 26, 637-662.
- Salsman, John; Brown, Tamara; Brechting, Emily & Carlson, Charles (2005). The between Religion and Spirituality, and Psychological Adjustment: The Mediating Role of Optimism and Social Support. *Personality and Social Psychology Bulletin*, 31, 522-535.
- Scheitle, Christopher and Adamczyk, Amy (2010). High Cost Religion, Religious Switching and Health. *Journal of Health and Aging*, 51, 325-342.
- Smith, James P. (2007). The Impact of Socioeconomic Status on Health over the Life-Course. *Journal of Human Resources*, 42, 739-764.
- Son, Joonmo & Wilson, John (2011). Religiosity, Psychological Resources and Physical Health. *Scientific Study of Religion*, 50, 588-603.
- Sun, Fei; Park, Nan Sook; Wardian, Jana; Lee, Beom S.; Roff, Lucinda; Klemmack, David; Parker, Michael, Koenig, Harold; Sawyer, Patricia & Allman, Richard (2013). Predicting the Trajectories of Perceived Pain Intensity in Southern Community-Dwelling Older Adults: The Roles of Religiousness. *Research on Aging*, 35, 643-662.

- Upchurch, Sandra & Mueller, William (2005). Spiritual Influence on Ability to Engage in Self-Care Activities among Older African Americans. *International Journal of Aging and Human Development*, 60, 77-94.
- Yao, Li & Robert, Stephanie (2008). The Contributions of Race, Individual Socioeconomic Status, and Neighborhood Socioeconomic Context on the Self-Rated Health Trajectories and Mortality of Older Adults. *Research on Aging*, 30, 251-273.
- York Cornwell, Erin & Waite, Linda (2009). Social Disconnectedness, Perceived Isolation, and Health among Older Adults. *Journal of Health and Social Behavior*, 50, 31-48.
- Zheng, Hui & Thomas, Patricia (2013). Marital Status, Self-Rated Health and Mortality: Overestimation of Health or Diminishing Protection of Marriage? *Journal of Health and Social Behavior*, 54, 128-143.

APPENDIX

Table 1. Characteristics of Respondents

<i>variable</i>	Response	Percent	<i>variable</i>	Response	Percent	
Self-rated health	Excellent	10.8	How often R feels isolated	Often	6.7	
	Very good	31.3		Not very often	93.3	
	Good	31.1	Gender	Male	44.4	
	Fair	19.1		Female	55.6	
Poor	7.8	Race/Ethnicity	White	84.0		
Religious Attendance	More than once a week		13.6	non-White	16.0	
	Once a week		25.4	Education	Less than HS diploma	16.2
	2-3 times a month		11.0		HS diploma/GED	54.0
	More than once a year	21.4	Some college/Associate		4.9	
Not at all	28.5	BA/BS	14.0			
Importance of Religion	Very important	64.3	MA or higher	10.9		
	Not very important	35.7	R feels they have people to turn to	Often	63.3	
	Marital Status	Often		63.3	Not very often	36.7
Not very often		36.7		Married	60.3	
	Married	60.3	Not married	38.5		

Source: *Health and Retirement Study, 2008*

Table 2. Descriptive Statistics for Respondents' Age and Self-Rated Health

Characteristics	Mean	Median	S.D.	Range	N
Self-rated Health	2.82	3	1.10	4	6,236
Age	67.25	65	9.54	52	6,236
Education	1.50	1	1.22	4	6,236

Table 3. Independent T-tests

variable	Mean	S.D.	Mean	S.D.	t
<i>Religious Salience</i>	<u>Very Religious</u>		<u>Not Very Religious</u>		
	2.83	1.11	2.80	1.08	-1.12
<i>Feelings of Support</i>	<u>Often</u>		<u>Not very often</u>		
	2.68	1.09	3.06	1.08	13.38 *** ^
<i>Marital Status</i>	<u>Married</u>		<u>Not married</u>		
	2.68	1.06	3.03	1.13	12.74 *** ^
<i>Feelings of Isolation</i>	<u>Often</u>		<u>Not Very Often</u>		
	3.12	1.13	2.66	1.05	-16.33 *** ^
<i>Sex</i>	<u>Male</u>		<u>Female</u>		
	2.81	1.10	2.82	1.10	-0.45
<i>Race/Ethnicity</i>	<u>White</u>		<u>Non-White</u>		
	2.73	1.08	3.27	1.10	14.29 *** ^

* $p < .05$, ** $p < .01$, *** $p < .001$
 $^d > .20$

Table 4. Correlations

	Attendance	Education	Age	Self-rated Health
Attendance				
Education	-.025			
Age	-.081 ***	-.148 ***		
Self-rated Health	.105 ***	-.303 ***	.109 ***	

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

Source: *Health and Retirement Study, 2008*

Table 5. OLS Regression for Self-rated Health

<i>Variables</i>	B	SE B	β
Religious attend	.089	.010	.117 ***
Religious salience	.078	.032	.034 *
Social Support	-.155	.028	-.068 ***
Marital Status	-.183	.028	-.081 ***
Social Isolation	.347	.028	.150 ***
Sex	-.055	.027	-.025 *
Age	.010	.001	.087 ***
Race/Ethnicity	-.411	.036	-.137 ***
Education	-.215	.011	-.240 ***

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

*Adjusted R*² = .179

Table 6. Partitioning the Variance, Regressed on Self-rated Health

<i>Predictors</i>	b	β	sig	Part	sq part	segment % of total	R² without segment
Religious attendance	.091	.120	.000	.100	0.01	15%	.138
Religious salience	.078	.034	.014	.096	0.00922	0.01922	
Social Isolation	.352	.153	.000	.143	0.02045		.167
Marital Status	-.177	-.079	.000	-.074	0.00548	23%	
Social Support	-.158	-.069	.000	-.064	0.0041	0.03002	
Sex	-.052	-.024	.051	-.022	0.00048		.085
Age	.010	.090	.000	.086	0.0074		
Race/Ethnicity	.416	.139	.000	.133	0.01769	62%	
Education	-.221	-.246	.000	-.235	0.05523	0.08079	
unique total variance:			0.130				
total shared variance:			0.049				
total variance:			0.179				