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**Determining the Association Between Religious Participation and Spirituality and Diet and Physical Activity Behaviors in African Americans of Mississippi**

Nidhi Shrestha

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The University of Southern Mississippi

Determining the Association Between Religious Participation and Spirituality and Diet  
and Physical Activity Behaviors in African Americans of Mississippi

by

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A Thesis  
Submitted to the Honors College of  
The University of Southern Mississippi  
in Partial Fulfillment  
of Honors Requirements

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## Abstract

According to CDC, African Americans experience higher rates of chronic diseases when compared to other ethnic groups. Focusing on religiosity and spirituality may benefit the health status of this minority group where advanced healthcare facilities are not easily assessable. The purpose of this research is to 1. Examine demographic factors related to religiosity/spirituality factors among a sample of African American Mississippians; and 2. Determine the correlation between their religiosity, spirituality, and health behaviors. The study uses the data collected by the Mississippi INBRE Telenutrition Center at The University of Southern Mississippi (USM). Participants for this study were recruited from May 2018-July 2019. The study variables from the survey were categorized in five different categories: demographics, social support, religiosity and spirituality, lifestyle behaviors, and quality of life. Correlation analyses examined the associations between all variables. Alpha  $<0.05$  was used to assess statistical significance. A total of 110 African American participants completed the survey, out of which 28 were male and 82 were female. The mean age of this population group was 45.42 years. Church attendance was positively associated with religiosity/spirituality ( $r=0.39$ ,  $p<0.001$ ). Church attendance was significantly associated with more frequently eating breakfast during the week, controlling for age ( $r=0.24$ ,  $p=0.04$ ). No other significant associations were identified. The use of religiosity and spirituality to bring change in health behaviors requires further research. Health education programs in association with faith-based organizations may benefit the health status of church attendees.

Keywords: African American, religiosity, spirituality, health behaviors, diet, physical activity

## **Dedication**

To Mom and Dad, for believing in me more than I ever can.

Thank you for letting me make mistakes and loving me at my worst.

I hope I did you proud.

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## **List of Abbreviations**

|       |  |
|-------|--|
| ACSM  | American College for Sports Medicine           |
| BMI   | Body Mass Index                                |
| CDC   | Centers for Disease Control and Prevention     |
| CVD   | Cardiovascular Diseases                        |
| INBRE | IDeA Network of Biomedical Research Excellence |
| T2DM  | Type 2 Diabetes Mellitus                       |
| USDA  | United States Department of Agriculture        |

## Chapter 1: Introduction

The growing prevalence of chronic diseases in the United States is a concerning problem with many underlying causes. Approximately 38.9% (93.3 million) of the total adult population in the U.S. are obese (Centers for Disease Control and Prevention [CDC], 2019). Obesity is more prevalent in minority groups such as the African American population when compared to the Caucasian and Asian-American populations. The CDC (2019) also reported that 46.8% of African Americans in the U.S. had a Body Mass Index (BMI) over 30. According to the 2015-2016 data collected by CDC on yearly income, living standards, and lifestyle practices of African Americans, it was indicated that this community is more prone to health risk factors associated with chronic diseases such as obesity, Type 2 Diabetes Mellitus (T2DM), and cardiovascular diseases as compared to other population groups in the U.S. This tendency can be attributed to the community's disadvantaged socioeconomic background and social environment. In order to formulate effective community interventions to address this issue, it is important to analyze the root causes of the problem. An individual's health behaviors related to diet and physical activity can influence their disease status. A study conducted by Miller, Thompson, Cooley, Wyand, and Fichtner (2017) suggested that the lower life expectancy in African Americans could be accounted for with modifiers commonly associated with coronary heart disease, hypertension, and insulin resistance. Common health risk behaviors found among African Americans were high caloric intake from fat, grains, whole milk, and simple sugar and low consumption of fruits, vegetables, and legumes (Salvo, Fradiani, Ziegler & Cole, 2012; United States Department of Agriculture [USDA], 2019). In order to further address such issues and relate them with the health

risk behaviors among African Americans, interventions that are focused on psychosocial aspects of well-being have gained popularity among researchers (Djuric et al., 2009; Bopp et al., 2016). Focusing on psychosocial aspects of well-being such as religiosity and spirituality can specifically benefit the health status of minority groups where advanced healthcare facilities are not easily assessable to the population.

### **Defining Religiosity and Spirituality**

Researchers studying the health impacts of religiosity and spirituality have indicated the need to tailor their interventions suited for the African American population because this minority group is at higher risk of chronic diseases associated with both lifestyle and genetic factors (Debnam, Holt, Clark, Roth & Southward, 2012; Bopp et al., 2006). Religiosity and spirituality are considered to be integral parts of one's existence as they give people a reason to have faith and devote themselves to finding meaning of life. In fact, 79% of the US population report that religion is very important to them (Hamilton, Galbraith, Best, Worthy & Moore, 2015). Djuric et al. (2009) defined spirituality as, "the basic value around which all other values are focused. [...] gives meaning to life, aids in decision making, and is a necessary component of health." Similarly, the authors also mentioned that spirituality may be experienced interpersonally, trans personally, and intra personally. People are able to connect themselves with the unseen force of God, or a power greater than themselves, through spirituality.

African Americans specifically have an interesting history with regards to their affinity with such forces. Spirituality and religiosity are interdependent. According to Hamilton et al. (2015), African Americans kept their faith in God and depended on his

support and guidance to survive the cruelties of slavery. Religiosity and spirituality reduce stress, focus on one's needs, and reduce certain health risks associated with lifestyle factors (Djuric et al., 2009). Underwood & Powell (2006) further argued that religious, spiritual, and faith-based organizations can help bring improvements in health status of African Americans through health education and outreach events. Health interventions that promote religiosity and spirituality in order for a community to find support amongst themselves uplift the overall health status of the African American population. Researchers have perceived the relationship between religiosity and spirituality and humans as a need for devotion and foundation of hope. Through this relationship, cognitive changes in one's health behaviors may be obtained.

There are various dimensions of analyzing one's level of religiosity and spirituality. Previous authors in this field have used community surveys, where participants were asked about their lifestyle choices and social environment through a series of open-ended questions. The methods used in the studies consisted of both qualitative and quantitative measures of data collection. Studies consisting of participants from local church communities conducted interviews where clients were asked about their lifestyle, religious engagement, and spiritual connection to a greater power. Reeves et al. (2012) derived conclusions on the basis of daily spiritual experiences such as feeling of god's presence and god's love. Similarly, Debnam et al. (2012) measured the extent of spiritual and religious devotion through frequency of church attendance and participation in church groups. Furthermore, Debnam's study also recognized the multidimensional nature of religious support: emotional support received, negative interactions, and anticipated social support. Studies by Bopp et al. (2006) also took acts

of meditation, prayer, being active and eating healthy into consideration, where interventionists integrated the use of scriptures and spirituality into their health messages. Hamilton et al. (2015) took a similar approach in their study by analyzing data related to reading the bible and singing or listening to spiritual music to gauge the influence of religiosity and spirituality among their participants.

### **Health Risk Behaviors and Quality of Life in African Americans**

African Americans are prone to chronic diseases such as Type 2 Diabetes Mellitus (T2DM), Cardiovascular Diseases (CVD), and hypertension due to low rates of physical activity and inability to afford healthcare (Debnam, et al., 2012; Bopp et al., 2006). It is evident that African Americans experience higher rates of chronic diseases such as cancer, cardiovascular diseases, and high cholesterol when compared to other ethnic groups. Additionally, this population also engages in health risk behaviors like smoking, poor nutrition consumption, and insufficient sleep (Wickrama et al., 2013). The argument is further strengthened by a study conducted by Newlin, Dyess, Allard, Chase & Melkus (2012), where it was found that compared to Caucasians, death rates due to diabetes-related complications have been increasing at a higher rate among African Americans in the past two decades. In response to this issue, Djuric et al. (2009) suggested that programs offering weight control and diet supervision can be beneficial to African American communities who are prone to preventable chronic diseases. Certain chronic diseases are related to quality of life, which subsequently relate to lifestyle factors. Quality of life is therefore used to determine life satisfaction with regards to disease progression and improvement (Counted, Possamai & Meade, 2018). Preventive measures in order to reduce the annual number of deaths caused by tobacco use, heavy

alcohol use, obesity, and physical inactivity can also improve one's quality of life (Underwood & Powell, 2006). African Americans also face health-risk factors related to stressful experiences from race-specific negative life events. Problems of racism, unequal distribution of opportunities, and lack of validation in a social environment affect an African American's satisfaction with life (Wickrama et al., 2013). Quality of life ultimately indicates the socio-economic status of a population, which can be further analyzed to conduct beneficial interventions among African Americans.

In defining the influence of religiosity and spirituality among African Americans, Underwood & Powell (2006) found that this minority group has higher rates of religious involvement and show that religiosity and spirituality are the most important domains in their culture. Researchers stated that African Americans consider their church an institution-- an opportunity for people to form a community that empowers its members through joint devotion in their religion. To make the most of such devotion in religiosity and spirituality through church communities, Bopp et al. (2006) increased the cultural appropriateness of their study by incorporating religiosity during intervention for health behavior change. Interventions implemented in order to uplift African Americans' health status should also be able to address the social factors that hinder this population's access to optimal healthcare and acknowledge their lower levels of health literacy (Hamilton et al., 2015). Addressing the culture in terms of education and socio-economic status can be advantageous to programs focused on diabetes self-management and prevention of cardiovascular diseases.

## **Previous Research**

Several studies were examined to explore whether there is evidence that religiosity and spirituality are associated with better lifestyle and health outcomes in underrepresented populations. For example, in 2012, Debnam et al. argued that religiosity and spirituality were related with one's self-esteem and ability to bring positive changes in health behavior. Similarly, in church-based programs, religiosity and spirituality knit a community where participants engaged in health practices under the guidance of their pastor and researchers. Authors Bopp et. al. (2006) analyzed the coping strategy of church-going African Americans and indicated that the level of religiosity was related to their physical and mental wellbeing.

Most studies had high participation rates among females, which ranged from 50%-80% (Reeves et al., 2012; Hamilton et al., 2015). Two studies included participants of chronic diseases such as diabetes and cancer. Hamilton et al. (2015) conducted their study on cancer patients who were at least 50 years or older. Researchers also conducted their study on a population group who did not meet the CDC/ACSM recommendations for physical activity (Bopp et al., 2006). Though most of the studies avoided biases in terms of age, sex, occupation, and rate of employment, researchers often preferred to recruit participants who were highly engaged in religious activities. Reeves et al. (2012) conducted their study on participants with higher BMIs, who also reported high frequency of religious attendance, prayer, and daily spirituality. Underwood & Powell (2006) also conducted their study based on participants who actively participated in activities like prayer and church attendance. The authors argued that only a small number



of participants from the study pool reported to be non-religious and concluded that religious intervention can be used to change health behaviors among African Americans.

Conclusions drawn from past studies indicate the influence of religiosity and spirituality on one's perception of health and the improvement of their lifestyle. A common finding was that health and quality of life of an individual are highly influenced by their social environment, lifestyle factors, and emotional support. A finding by Wickrama et al. (2013) strongly indicated that psychological competency depended on life satisfaction; it was associated with receiving regular physical exams, physical activity, and fruit and vegetable intake. Psychological soundness obtained from spirituality gave individuals a sense of control to plan, initiate, and maintain health-promoting behaviors. It also helped them achieve a reason to nourish their body and soul (Counted et al., 2018). African Americans specifically deal with the distress of racism and suboptimal healthcare opportunities, which is believed to increase their risk of chronic diseases (Debnam et al., 2012). The study conducted by Reeves et al. (2012) found that encouraging healthy coping behaviors along with stress management through religious involvement may help reduce obesity risk. Religiosity and spirituality also gave participants motivation to remain healthy because they believed that doing so would make them a better Christian (Bopp et al., 2006). Many interventions incorporated spiritual messages in their programs through the use of religious sermons and songs (Hamilton et al., 2015). The study conducted by Hamilton et al. (2015) on cancer survivors provided an extensive explanation of their findings through a series of subjective interview with the participants. It was summarized that the participants felt comfortable and optimistic due to their faith in God. They believed that it was God's will

that they were given a second chance to live. The participants also believed that having faith in God distracted them from emotional and physical symptoms during cancer treatments. The study concluded that, “religion promotes a consciousness that a superhuman entity is in control of the universe, and that this same control applied to control over health and healing...” Religiosity and spirituality in this study helped patients take initiative of their own wellbeing by believing that God wanted them to live well.

### **Role of Faith-based Organizations in Providing Religious and Social Support**

As mentioned earlier, psycho-social factors like religiosity and spirituality have gained attention among researchers who plan interventions to promote health education and improve quality of life. An article review published by Possamai et al. (2018) found that physical health and psychological functioning were the most researched domains of quality of life. However, little is known about association between religiosity and spirituality and quality of life in disease-specific research. Similarly, authors Debnam et al. (2012) mention that previous studies conducted in this domain have not been inclusive of all the health behaviors related to the disease burden that the people feel. The lack of association between religiosity and spirituality and health outcomes can also be found in studies concerned with obesity and diabetes (Newlin et al., 2012). In response to this lack of association in prior research, interventionists have now incorporated elements of religion and spirituality in programs designed for faith-based communities (Hamilton et al., 2015). Faith-based community interventions rely on a community’s engagement in their church-groups and their obedience to their pastor to make the most out of health education provided during the program.

The participants' association with a superior power in the form of religiosity and spirituality has given rise to programs in partnership with faith-based organizations. African American women tend to have higher church attendance rates through which they receive social support to cope with psychological distress (Hamilton et al., 2015). The African American population benefit from social support, where members of a community enable each other to be more physically active (Debnam et al., 2012; Bopp et al., 2006). Some group activities implemented in association with faith-based organization, their leaders, and healthcare organizations were walking programs, sports, aerobics, and gardening classes. These programs gave individuals an opportunity to expand their circle of social support (Debnam et al., 2012). Lastly, playing Christian music during activities and getting support from church leaders motivated participants to come back for more sessions (Bopp et al., 2006). Research conducted with the help of church leaders and faith-based organizations encouraged participants to engage in positive health behaviors because they found a spiritual connection and obtained social support during in the process.

The association between religiosity, spirituality and social support is significant in encouraging African Americans to bring behavioral changes in their health. Having both inner strength and social support empowers one to find help from community health centers and resources. In older African Americans, the presence of such support is helpful in coping with day-to-day racial discrimination, adverse work and community conditions and economic hardship (Wickrama et al., 2013). Social support alone was proven to increase fruit and vegetable consumption and decrease risks of depression, anxiety, substance abuse, and antisocial behavior among the participants (Debnam et al., 2012).

Studies conducted through faith-based organizations also found an association between participants and health risk behaviors related to heavy alcohol use and smoking. Social support brought together people from the same religious, educational, and economic backgrounds to facilitate easy access to researchers who intend to conduct their study on people coming from similar backgrounds.

A limitation found across the board in many studies referred to result biases obtained on the basis of age, sex, and demographic. The review done by Counted et al. (2018) found that about 70% of the studies were conducted on participants with at least one mental or physical health problem and regularly attended church services. Authors also conducted their studies on mostly female, elderly, and underactive groups of African American communities. Debnam et al. (2012) mentioned that, “the manner and degree to which African American men, women and children worship and the degree to which they practice their faith and spirituality vary significantly” and thus concluded that due to some biases, their sample was not representative of all African Americans. Similarly, authors Reeves et al. (2012) acknowledged that due to the high religious engagement of their participants, their conclusion that religiosity relates to lower alcohol consumption, lower depressive symptoms, and higher social support may vary from members who did not volunteer in their program. Authors Underwood & Powell (2006) and Hamilton et al. (2015) acknowledged sample biases in their studies by indicating that their studies might have produced different results if more active participants (Underwood & Powell, 2006) and more male members from higher socio-economic backgrounds of the African American community (Hamilton et al., 2015) participated in their interventions.

Some interventions found conflicting results that did not support their original arguments on the relationship between religion, spirituality, and health-related well-being of the participants. Debnam et al. (2012) argued that African Americans have changed their food choices in accordance to recent increases in availability of fast food and socioeconomic status and found that religious support was not significantly associated with health behaviors such as cigarette use. Underwood & Powell (2006) found similar results in terms of association between religious and social support and their participants, who were screened with prostate, breast, cervical and colorectal cancers. The study did find a positive correlation between religion and spirituality and community healthcare providers who effectively communicated with other study participants and helped change their diet behaviors. Reeves et al. (2012) stated that, “some religious social setting may encourage less healthy eating and lead to weight gain for African Americans [...] the relationship between religiosity, spirituality and obesity was not moderated by demographic variables, psychological variables, or health behaviors.” The study by Bopp et al. (2006) demonstrated a weak correlation between religiosity and spirituality and health outcomes because their study found no association between psychological vulnerability of the participants and their ability to change health risk behaviors through physical activity and regular medical checkups. Wickrama et al. (2013) argued that religion may negatively impact one’s health behaviors by diverting their devotion towards God and faith rather than help available through medical care and treatment options. A number of results obtained from these studies submissively indicate that the psychosocial effects of religiosity and spirituality vary from one individual to another. Patients of terminal illnesses did not show signs of improvement in their health outcomes

due to religious engagement but showed changes in their outlook on coping with the disease.

The ultimate conclusion derived from the majority of the studies analyzed in this literature is that religiosity and spirituality can improve one's perception of health and encourages them to find appropriate resources and bring changes to health behaviors by believing it is God's will to keep them healthy. Debnam et al. (2012) found that physical activity interventions organized in faith-based organizations increased physical activity among members. Church-based interventions encouraged African Americans to "gain strength from God to be physically active [...] maintain a healthy body, which is referred to in scripture" (Bopp et al., 2006). The interventionists also used religiosity and spirituality to predict factors that affected the health behaviors of their participants. This helped them recognize a religious setting as an important venue to conduct health-education sessions (Reeves et al., 2006). Researchers associated health behaviors like daily fat consumption, fruit and vegetable consumption, receiving physical exams, and physical activity with life satisfaction. Life satisfaction indicated psychological competency and individuals who were psychologically competent spent more time in self-care, made healthy lifestyle choices, and felt in control with their health choices (Wickrama et al., 2013). Availability of resources also affected a community's engagement in religious activities. Hamilton et al. (2015) found that in communities lacking proper health resources, "religious beliefs and practices positively influenced attitudes toward their illness and ability to endure treatment" where survivors believed in God's ability to heal and cure them. In terms of spirituality, Djuric et al. (2009) found that spiritual counseling led to participants seeking a better quality of life through satisfaction

and wellbeing. The findings suggest incorporation of religiosity and spirituality in health promotion methods for the African American community.

The context of religiosity and spirituality needs more consideration from researchers in order to completely validate the success of incorporation of these factors into a health program. Due to the limitations mentioned above, studies have indicated a need for further research in this field. Debnam et al (2012) emphasized that future research should study the contribution of religious support provided through church-based organizations to bring changes in health behavior of a cohort. More research also needs to be done in confirming that religiosity and spirituality are psychological processes which can be used to improve the health behaviors of African Americans (Wickrama et al., 2013). A suggestion to overcome this invalidity was provided by Hamilton et. al. (2015), who stated that, “African Americans prior to and after cancer diagnosis may provide important contributions to health interventions focused on increasing the use of preventive services while decreasing cancer mortality disparities among racial/ethnic minority populations.” The study claimed further need to evaluate the benefits of symptom management and effects of religious practices such as prayer and religious practices among African Americans. This study aims to analyze the validity of conclusions drawn from current literature.

Based on the current literature, the proposed research will add to the body of science by exploring the following research question: “Are higher levels of religiosity and spirituality in African Americans associated with positive health behaviors and better health outcomes?” The purpose of this research is to 1. Examine demographic factors related to religiosity/spirituality factors among a sample of African American

Mississippians; and 2. Determine the correlation between religiosity, spirituality, and health behaviors in African Americans of south Mississippi. It is hypothesized that a higher degree of religious and spiritual devotion is associated with positive health behaviors and lifestyle choices in this population group.



## **Chapter 2: Methods**

### **Data Set and Population Description**

The study uses the data collected by the Mississippi INBRE Telenutrition Center at The University of Southern Mississippi (USM). Participants for this study were recruited from May 2018-July 2019 by research staff and student research scholars, who followed the original human subjects protocol approved by the USM Institutional Review Board. The recruitment process consisted of outreach events in community, clinical, and university setting and social media posts. Participants were asked to complete either a 15-20-minute survey by paper or electronic (Qualtrics). Participants granted written consent prior to beginning the survey and were able to self-elect to enter into a drawing for \$25 gift-cards upon survey completion. In total, 110 African Americans participated in the survey: 28 were male and 82 were female. The mean age of this population group was 45.42 years.

### **Study Measures**

The variables for this study were extracted from a codebook consisting of 247 items. For the purpose of this study, the variables were categorized into five different categories: demographics, social support, religiosity and spirituality, lifestyle behaviors, and quality of life. Religiosity and Spirituality are the independent variables in this study, whereas lifestyle behaviors and quality of life items were considered to be dependent variables. Demographic and social support variables are potential confounding variables.

#### ***Demographic Variables***

Participants answered questions with regards to their age, gender, education, income level, religious affiliation, and health insurance statues in this category. In order to

determine the education level, participants were asked to indicate the highest level of education that they had received. Income status was determined by how much the individual earned annually. Participants were asked to choose their religious affiliation and the type of health insurance they benefited from.

### ***Social Support***

The question, “How often do you get the social and emotional support you need?” was asked to participants, who chose an option from the following: always, usually, sometimes, rarely, and never.

### ***Religiosity and Spirituality***

Participants were asked how often they attended church or religious services. There were six options for this question, which ranged from “Never” to “More than once a week.”

The question, “How religious/ spiritual would you say you are?” allowed participants to gauge their religiosity/spirituality in the survey.

### ***Lifestyle Behaviors***

Lifestyle behaviors were assessed through participants’ frequency of alcohol intake (spirits/liquor, wine, and beer), fruit intake, vegetable intake, fast-food intake, and frequency of eating breakfast at home. Participants were also asked how often in a week did they engaged in 30 minutes or more of physical activity that raised their breathing rate.

### ***Quality of Life***

Participants rated their physical and mental health from poor to excellent for each variable.

## **Statistical Analysis**

Correlation analyses were used to determine the associations between demographic variables and religiosity/spirituality variables. Significant demographic and social support variables were used as control variables in analyses examining the relationship between religiosity/spirituality variables and lifestyle behaviors, and quality of life. Descriptives were computed to examine the distribution of each variable. Correlation analyses were conducted to examine the associations between all variables. All data were analyzed using IBM SPSS Statistics software, version 25.0. Alpha <0.05 was used to assess statistical significance.

## Chapter 3: Results

The mean age of the surveyed population was 45.42 years. Out of 110 African American participants, 82 (74.5%) were female and 28 (25.5%) were male. Almost two thirds of the population reported having some college experience (64.65%). Only 5.5% of the population reported having less than a high school degree and nearly one third of the population had either a high school degree (20%) or vocational degree (10%). Only 99 out of 110 participants reported their annual income. Out of the recorded data, it was found that nearly one fourth of the population (19.1%) were currently unemployed and 54.5% of the population earned less than \$30,000 per year. Only seven of the participants (6.3%) reported an annual income of \$100,000 or higher. Almost all participants (108) entered the information on their religious affiliation. The majority of participants (83; 75.5%) were Baptist, whereas only four of the cohort were either Catholic or Methodist. The cohort also consisted of 11 (10%) non-denominational participants and four (3.6%) participants who did not have religious affiliation. Only 98 participants reported their health insurance status, out of which 21.8% had private insurance and 39.1% had insurance provided by employer. Medicare or Medicare assisted 16.4% of the participants with their health insurance and 3.6% of the participants depended on the Affordable Care Act. A total of 8 (7.3%) participants reported the absence of health insurance.

One third of the population (39; 35.5%) attended church or religious services at least once a week and nearly one fourth of the population (20; 18.2%) attended services more than once a week. A cumulative total of 30.9% for the participants attended church or religious services few times a year. A total of 108 participants reported their level of religiosity/spirituality, out of which only seven (6.4%) were not religious at all. Almost

half of the population (51; 46.4%) were fairly religious and 41 of the participants (37.3%) were very religious.

Pearson’s correlation analyses determined the association between church attendance and religiosity/spirituality and demographic (age, income, gender, marital status and social/emotional support) variables. Church attendance was positively associated with religiosity/spirituality ( $r=0.39$ ,  $p<0.001$ ), indicating that those who attended church more frequently also reported being more religious/spiritual. Age was significantly associated with church attendance ( $r=0.28$ ,  $p<0.01$ ), indicating that older age groups attended church more frequently. No other significant associations were identified.

A bivariate correlation to examine the association between church attendance and religiosity/ spirituality and independent variables (fruit and vegetable intake, physical and mental health status, and fast food, breakfast and alcohol consumption), while controlling for age. Church attendance was significantly associated with more frequently eating breakfast during the week, controlling for age ( $r=0.24$ ,  $p=0.04$ ). No other significant associations were identified.

**Table 1**  
*Demographic Data of Survey Participants*

|                    |  | Mean (SD)     |
|--------------------|--|---------------|
| Age (years)        |  | 45.42 (17.08) |
| Other Demographics |  | % (n)         |
| Gender             | Male                                   | 25.5(28)      |
|                    | Female                                 | 74.5(82)      |
| Education          | Less than a high school degree         | 5.5 (6)       |
|                    | A high school degree                   | 20.0 (22)     |
|                    | Some college, but not a college degree | 27.3 (30)     |

|                          |   |           |
|--------------------------|---|-----------|
|                          | A 2-year or vocational degree                         | 10.0 (11) |
|                          | A 4-year college degree or higher                     | 37.3 (41) |
|                          | Missing   | 0         |
|                          | <hr/>   |           |
|                          | I am currently unemployed                             | 19.1 (21) |
|                          | \$0 to \$19,999                                       | 16.4 (18) |
|                          | \$20,000 to \$29,999                                  | 13.6 (15) |
|                          | \$30,000 to \$39,999                                  | 8.2 (9)   |
|                          | \$40,000 to \$49,999                                  | 9.1 (10)  |
|                          | \$50,000 to \$59,999                                  | 7.3 (8)   |
| Individual annual income | \$60,000 to \$69,999                                  | 2.7 (3)   |
|                          | \$70,000 to \$79,999                                  | 2.7 (3)   |
|                          | \$80,000 to \$99,999                                  | 4.5 (5)   |
|                          | \$100,000 to \$119,999                                | 0.9 (1)   |
|                          | \$120,000 to \$139,999                                | 2.7 (3)   |
|                          | \$140,000 or greater                                  | 2.7 (2)   |
|                          | Missing   | 10 (11)   |
|                          | <hr/>   |           |
|                          | Baptist   | 75.5 (83) |
|                          | Catholic  | 0.9 (1)   |
|                          | Methodist   | 2.7 (3)   |
| Religious Affiliation    | Non-Denominational                                    | 10.0 (11) |
|                          | Other   | 4.5 (5)   |
|                          | I do not have a religious affiliation                 | 3.6 (4)   |
|                          | Prefer not to respond                                 | 0.9 (1)   |
|                          | Missing   | 1.8 (2)   |
|                          | <hr/>   |           |
|                          | Private insurance                                     | 21.8 (24) |
| Type of Health Insurance | Insurance provided by your employer                   | 39.1 (43) |
|                          | Medicaid or Medicare                                  | 16.4 (18) |
|                          | Military insurance (Tri-care, etc.)                   | 0.9 (1)   |
|                          | Insurance through the Affordable Care Act (Obamacare) | 3.6 (4)   |

|                                    |           |
|------------------------------------|-----------|
| I don't have insurance of any kind | 7.3 (8)   |
| Missing                            | 10.9 (12) |

**Table 2**  
*Frequency of Church Attendance and Measurement of Religiosity and Spirituality*

| Variables                    | % (n)                 |           |
|------------------------------|-----------------------|-----------|
| Church attendance            | Never                 | 3.6 (4)   |
|                              | Less than once a year | 7.3 (8)   |
|                              | A few times a year    | 20.0 (22) |
|                              | A few times a month   | 15.5 (17) |
|                              | At least once a week  | 35.5 (39) |
|                              | More than once a week | 18.2 (20) |
|                              | Not religious at all  | 6.4 (7)   |
| Religiosity and Spirituality | Not too religious     | 8.2 (9)   |
|                              | Fairly religious      | 46.4 (51) |
|                              | Very religious        | 37.3 (41) |
|                              | Missing               | 1.8 (2)   |

**Table 3***Correlations between Religiosity/Spirituality and Factors Determining Health Behaviors*

|                            |                     | Physical Health | Mental Health | Drinks (Spirits) | Drinks: Wine | Drinks: Beer | Drinks: Spirit | Vegetable servings per day | Fruit servings per day | Mean fruit & vegetable servings per day | Breakfast per week | Fast-food consumption per week | Physical activity per week |
|----------------------------|---------------------|-----------------|---------------|------------------|--------------|--------------|----------------|----------------------------|------------------------|---|--------------------|--------------------------------|----------------------------|
| Religiosity & Spirituality | Pearson Correlation | -.083           | .067          | .101             | .021         | .016         | -.086          | -.021                      | -.064                  | .008                                    | -.017              | .089                           | .089                       |
|                            | Sig. (2-tailed)     | .408            | .504          | .387             | .863         | .886         | .408           | .839                       | .534                   | .942                                    | .869               | .419                           | .419                       |
|                            | N                   | 102             | 102           | 76               | 68           | 86           | 95             | 97                         | 97                     | 91                                      | 95                 | 85                             | 85                         |
| Church Attendance          | Pearson Correlation | .017            | .089          | -.058            | -.144        | -.201        | -.022          | .033                       | .016                   | .180                                    | .190               | .174                           | .174                       |
|                            | Sig. (2-tailed)     | .861            | .368          | .617             | .242         | .061         | .831           | .748                       | .879                   | .087                                    | .064               | .110                           | .110                       |
|                            | N                   | 104             | 104           | 76               | 68           | 87           | 96             | 98                         | 98                     | 92                                      | 96                 | 86                             | 86                         |

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).



## Chapter 4: Discussion

This project aimed to focus on psychological aspects of well-being such as religiosity and spirituality and their health benefits among African Americans of south Mississippi. Researchers previously found that common health risk behaviors among African Americans could be affected by incorporating the aspects of religiosity and spirituality to bring changes in health behaviors of the African American population (Salvo, Fradiani, Ziegler & Cole, 2012). African American's affinity to religiosity and spirituality can be dated back to the cruelties of slavery, during which, they kept faith in God and depended on his guidance (Hamilton et al., 2015). It was assumed that health education programs conducted at faith-based communities such as churches could help reduce the prevalence of lifestyle and health behavior related diseases among African Americans (Underwood and Powell, 2006). Similar to previous studies (Reeves et al., 2012; Hamilton et al., 2015), majority of the participants in this study were female (82; 25.5%). Since half of the participants in this study (59; 53.7%) reported to attend a church service at least once a week and one third of the participants reported to attend a church service at least few times a year, it was concluded that religiosity and spirituality are important domains of the African American culture. The results were similar to Underwood and Powell's, (2006) finding that African Americans have higher rates of religious attendance compared to other ethnic groups in the United States.

This study did not find any significant correlation between religiosity, spirituality, and variables like social support, lifestyle behaviors, and quality of life. Other independent variables of the study included fruit and vegetable intake, physical and

mental health, fast food, and alcohol consumption, which were also not significantly related to higher devotion to religiosity and spirituality by the participants (Table 3).

The findings of this study contradict with results from the study conducted by Bopp et. al. (2006), where authors indicated a positive correlation between religiosity and physical/mental wellbeing of the participants. On the contrary, other studies conducted by Wickrama et al. (2013), Debnam et al. (2012), and Counted et al. (2018) indicated that health and quality of life of individuals were affected by their social environment, lifestyle factors, and emotional support; yet no significant relationships were identified between religiosity and spirituality and changes in health behaviors related to diet and physical activity. Debnam et. al. (2012) indicated association between increases in fruit and vegetable consumption among their participants when there was increased presence of social and emotional support from family and friends. This study, which did not account for health education provided by faith-based organizations, did not show significant association between religiosity, spirituality, and positive health outcomes through behavior change.

Similar to previous studies, this study also consists of participants with high religious engagement, which may contribute to failure to provide a comparison between church-attending and non-church-attending groups. A limitation of this study also includes the lack of appropriate measures used to account for the degree of religiosity and spirituality. Previous studies conducted by Hamilton et. al (2015) used an extensive series of questions to analyze the level of religiosity of spirituality among their participants, which was more reliable for drawing conclusions. This study gave participants the freedom to measure their own degree of religiosity and spirituality, which may have

indicated personal biases from the participant's side. For example, participants attending church services to socialize may have mistaken their attendance for acts of religiosity. Due to the high participation of females, the study also fails to show the results with equal representation from both genders.

Since there are contradictory findings regarding the roles of religiosity and spirituality on the health behaviors of African Americans, further research is required to clarify the doubts unanswered by this study. Authors (Underwood & Powell, 2006; & Bopp et al., 2006) suggest that initiatives should be culturally tailored according to the needs of the target community where researchers should pay attention to health needs, health status and beliefs and influence of religion in the community. For the African American population, it seems that incorporating health education and behavioral therapy during interventions conducted by faith-based organizations are effective in producing desired health outcomes. Studies should also be longitudinal in order to clarify temporal relationships between religiosity, health behavior, and body weight (Reeves et al., 2012). The interventions conducted on a cohort through faith-based organizations should take measures to follow-up with the participants in order to prevent possibilities of relapsing into the old health behaviors. Due to the high frequency of church attendance among the African American community members, religiosity and spirituality can be used as forms of psychological processes that decrease the levels of stress and increase sufficiency in implementing positive health behaviors among the population (Bopp et al., 2006). Psychological and emotional vulnerability trigger emotion-driven health behaviors which should be the center focus of future studies that wish to promote health and provide health education in an effective matter.

## **Chapter 5: Conclusion**

African Americans in the U.S. are more prone to chronic diseases such as obesity, CVD, hypertension, and T2DM compared to other ethnic groups in the country. This population group faces barriers in access to healthcare due to their low socio-economic status and lack of healthcare facilities in rural localities. These characteristics are quite common among African Americans in Mississippi, and thus the sample in this study appears representative of the target population. Past research purposed that changing health behaviors of African Americans through interventions incorporating religiosity and spirituality may help the people of this community adapt to a healthier lifestyle. This study found no correlation between religiosity and spirituality and health behaviors such as dietary intake and physical activity levels. However, it was found that older populations considered themselves to be more religious/spiritual. Religiosity and spirituality were positively associated with breakfast intake at home, but negatively associated with spirit consumption. This study concluded that religiosity/spirituality did not attribute to the health behaviors of African Americans. Higher participation rates from males and non-churchgoers would have created a more representative sample for data analysis and could have shown different correlations. Future studies and interventions incorporating the aspects of religiosity and spirituality should recruit a diverse cohort of participants in order to obtain unbiased results.

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## Appendices

### IRB Approval Letter

**Office of  
Research Integrity**



118 COLLEGE DRIVE #5125 • HATTIESBURG, MS | 601.266.6576 | USM.EDU/ORI

#### **NOTICE OF RENEWAL**

The University of Southern Mississippi's Office of Research Integrity has received the notice of renewal for your submission:

PROTOCOL NUMBER: 18060701

PROJECT TITLE: Collaborative Nutrition Systems Research (CNSR)

SCHOOL/PROGRAM: Nutrition and Food Systems

RESEARCHER(S): Jennifer Lemacks

IRB COMMITTEE ACTION: Exempt

In accordance with Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services regulations (45 CFR Part 46), and University Policy your prior reviewed submission has been renewed. From this time of this renewal your study is approved for twelve months.

PERIOD OF APPROVAL: April 30, 2019 - April 29, 2020

**Sincerely,**

**Office of Research Integrity**



**Survey Items Extracted for this Research Project**  
***Demographic***

What is your age? (Q6\_DemoAge)

Missing Values: 99 – 999

What is your gender? (Q13\_DemoGender01)

Missing Values: 3 – 999

- a) Male: 1
- b) Female: 2

Please indicate the highest level of education you have received: (Q7\_DemoEducation)

Missing Values: 6 - 999

- a) Less than a high school degree: 1
- b) A high school degree: 2
- c) Some college, but not a college degree: 3
- d) A 2 year or vocational degree: 4
- e) A 4 year college degree or higher: 5

What is your (individual) current yearly income level? (Q8\_DemoIncome)

Missing Values: 13 - 999

- a) I am currently unemployed: 1
- b) \$0 to \$19,999: 2
- c) \$20,000 to \$29,999: 3
- d) \$30,000 to \$39,999: 4
- e) \$40,000 to \$49,999: 5
- f) \$50,000 to \$59,999: 6
- g) \$60,000 to \$69,999: 7
- h) \$70,000 to \$79,999: 8
- i) \$80,000 to \$99,999: 9
- j) \$100,000 to \$119,999: 10
- k) \$120,000 to \$139,999: 11
- l) \$140,000 or greater: 12

What is your religious affiliation? - Selected Choice (Q52\_DemoReligion)

Missing Values: 9 - 99

- a) Baptist: 1
- b) Catholic: 2
- c) Methodist: 3
- d) Non-Denominational: 4
- e) Presbyterian: 5
- f) Other: 6
- g) I do not have a religious affiliation: 7
- h) Prefer not to respond: 8

### ***Religiosity/Spirituality***

How often do you attend church or religious services? (Q114\_DemoChurchAttendance)

Scoring: Higher scores = more church attendance

Missing Values: 7 - 999

- a) Never: 1
- b) Less than once a year: 2
- c) A few times a year: 3
- d) A few times a month: 4
- e) At least once a week: 5
- f) More than once a week: 6

How religious/spiritual would you say you are? (Q115\_DemoSpirituality)

Scoring: Higher scores = more spiritual

Missing Values: 5 - 999

- a) Not religious at all: 1
- b) Not too religious: 2
- c) Fairly religious: 3
- d) Very religious: 4

### ***Social and Emotional Support***

How often do you get the social and emotional support you need?

(Q84\_DemoSocEmotSupport) - Reverse

Missing Values: 6 - 999

- a) Always: 1
- b) Usually: 2
- c) Sometimes: 3
- d) Rarely: 4

### ***Lifestyle Behaviors***

Think of the one occasion during the past month where you drank most. Select the option that best describes the number of each type of drink you consumed. Choose all that apply.

- Spirits/Liquor (1 shot or mixed drink) (Q89\_1\_DrinkSpirits)

- a) 1: 1
- b) 2: 2
- c) 3: 3
- d) 4: 4
- e) 5+: 5
- f) None: 6

Think of the one occasion during the past month where you drank most. Select the option that best describes the number of each type of drink you consumed. Choose all that apply.

– Wine (5oz glass or wine cooler) (Q89\_2\_DrinkWine)

- a) 1: 1
- b) 2: 2
- c) 3: 3
- d) 4: 4
- e) 5+: 5
- f) None: 6

Think of the one occasion during the past month where you drank most. Select the option that best describes the number of each type of drink you consumed. Choose all that apply.

– Beer (10-12oz bottle/can) (Q89\_3\_DrinkBeer)

- a) 1: 1
- b) 2: 2
- c) 3: 3
- d) 4: 4
- e) 5+: 5
- f) None: 6

How many servings of FRUIT do you usually eat or drink each day? Think of a serving as being about 1 medium piece, or ½ cup of fruit, or ¾ of cup of fruit juice.

(Q69\_DietFruit)

- a) 0 Servings: 1
- b) 1-2 Servings: 2
- c) 3-4 Servings: 3
- d) 5 or more Servings: 4

How many servings of VEGETABLES do you usually eat or drink each day? Think of a serving as being about 1 cup of raw leafy vegetables, ½ cup of other cooked or raw vegetables, or ¾ cup of vegetable juice. (Q93\_DietVeg)

- a) 0 Servings: 1
- b) 1-2 Servings: 2
- c) 3-4 Servings: 3
- d) 5 or more Servings: 4

During the past 7 days, on how many days did your household eat breakfast or a morning meal? (Q71\_DietBreakfast)

- a) 0 Days: 1
- b) 1 Day: 2
- c) 2 Days: 3
- d) 3 Days: 4
- e) 4 Days: 5
- f) 5 Days: 6
- g) 6 Days: 7
- h) 7 Days: 8

During the past 7 days, on how many days did your household eat at at least one meal or snack from a fast food restaurant such as McDonald's, Taco Bell, or KFC?

(Q73\_DietMealFastFood) - Reverse

- a) 0 Days: 1
- b) 1 Day: 2
- c) 2 Days: 3
- d) 3 Days: 4
- e) 4 Days: 5
- f) 5 Days: 6
- g) 6 Days: 7
- h) 7 Days: 8

In the past week, how many days have you done a total of 30 minutes or more of physical activity that raised your breathing rate? (Q81\_PhysAct)

Missing Values: 9 – 999

- a) 0 Days: 1
- b) 1 Day: 2
- c) 2 Days: 3
- d) 3 Days: 4
- e) 4 Days: 5
- f) 5 Days: 6
- g) 6 Days: 7
- h) 7 Days: 8

### ***Health Related Quality of life***

In general, would you say your PHYSICAL health is: (Q57\_DemoPhysicalHealth) - Reverse

- a) Poor: 1
- b) Fair: 2
- c) Good: 3
- d) Very good: 4
- e) Excellent: 5

In general, would you say your MENTAL health is: (Q98\_DemoMentalHealth) - Reverse

- a) Poor: 1
- b) Fair: 2
- c) Good: 3
- d) Very good: 4
- e) Excellent: 5