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Health Seeking Behavior in African American Women

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This is to certify that the doctoral study by

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2018

Abstract

Health-Seeking Behavior in African American Women

by

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MA, Walden University, 2014

BS, Florida Atlantic University, 2008

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

Disparities exist in the health-seeking behavior of African American (AA) women in the United States. Specifically, AA women 40 years and older often do not adhere to guidelines for breast cancer screening because of demographic and socioeconomic factors that have impacted health disparities. The purpose of this study was to research negative health-seeking behavior toward early-stage breast cancer detection in AA women 40 years and older. The main research questions addressed whether there is a relationship between negative health-seeking behavior, operationally defined as lack of a personal doctor, lack of health insurance, and lack of doctor visits within the past 12 months, and early-stage breast cancer detection, operationally defined as lack of mammogram screening within the past 2 years, in AA women 40 years and older. This quantitative study was guided by the health belief model. A cross-sectional design was used along with secondary data from the 2016 Behavioral Risk Factor Surveillance System survey. Wald chi-square was used to examine the relationship between the dependent variables and the independent variable. The relationship between lack of a personal doctor, lack of health insurance, lack of doctor visits within the past 12 months, and lack of mammogram screening within the past 2 years was statistically significant at $p < .05$. The findings based on the significance between the variables confirmed that negative health-seeking behavior affects early-stage breast cancer detection in AA women 40 years and older. The results of this study may inform the development of educational programs that are instrumental in promoting and improving mammogram screening and early-stage breast cancer detection among AA women age 40 years and older.

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Dedication

This research study is dedicated to my mother whom I lost to colon cancer on New Year's Day 2006 and my dad whom I lost suddenly on June 28, 2018. It is because of their prayers, encouragement, unconditional love and support throughout the years that I can dedicate this research study to them. This study is possible because they believed in me and were my greatest supporters. I am beyond heartbroken that they will not see me accept my degree. I am also dedicating this study to my Uncle Herbert whom I lost to colon cancer on July 26, 2017. There are no words to express how truly heartbroken I am because my uncle has been my rock and constant supporter since the day I was born. To my friend Alina Sanchez and all the women who are currently fighting breast cancer; to my friends Alicia Parker and Enis Rodney whom I lost to breast cancer in 2016; and to all the women whom we have lost to breast cancer, this is for you. May we find a cure!!!.

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Section 1: Foundation of the Study and Literature Review

Introduction

Negative health-seeking behavior toward early-stage breast cancer detection in African American (AA) women is cause for great concern. Health-seeking behavior consists of the actions that individuals take to correct perceived threats to their health and well-being (Oberoi, Chaudhary, Patnaik & Singh, 2016). Therefore, negative health-seeking behavior toward early-stage breast cancer detection in AA women consists of inactions relative to ensuring early breast cancer diagnosis and treatment.

Negative health-seeking behavior toward early-stage breast cancer detection in AA women is influenced by demographic and socioeconomic factors. Factors such as age, race, and access to health care (e.g., personal doctors and health insurance) relate to salient disparities that contribute to more than 40,000 female breast cancer deaths annually, most of which are AA women (Martinez-Donate et al., 2013). According to the American Cancer Society (ACS, 2017), over 31,000 AA women were projected to be diagnosed with breast cancer in 2016, with over 6,000 expected to die from the disease.

Breast cancer is one of the deadliest diseases to ever affect women. Breast cancer refers to malignant cells formed in the breast tissues, and is diagnosed in women every 2 minutes (ACS, 2016). It was estimated that 252,710 women would be diagnosed with breast cancer in 2017, and that 40,610 women would die from breast cancer (ACS, 2016). Every 13 minutes, one woman dies as a result of breast cancer (ACS, 2016). Breast cancer is the commonest type of cancer and the second leading cause of death in women in the United States (Ma & Jamal, 2013). To date, no cure has been found for breast

cancer. Breast cancer deaths in AA women are at an all-time high. More than 40% of all female breast cancer deaths occur in AA women (Richardson, Henley, Miller, Massetti, & Thomas, 2016). Breast cancer death is 42% higher in AA women than in Caucasian women (Richardson et al., 2016). Over 45% of the estimated 3.1 million women currently living in the United States with a history of breast cancer are AA women Desantis et al., 2014). These are staggering statistics amidst persistent disparities between AA women and women of other races.

Female breast cancer deaths have declined over the years. This downward trend has not been as beneficial for AA women (Desantis et al., 2016). Breast cancer mortality has decreased by 34% for Caucasian women but has increased by 2% for AA women (Howlader et al., 2014). Breast cancer deaths have continuously increased over the years in AA women age 40 and older (Desantis, Naishadham, & Jemal, 2013). Breast cancer prevention measures are necessary to reduce the high mortality rate among AA women.

Stable decline in breast cancer deaths throughout the years has been attributed to early-stage detection and treatment (Narod, Iqbal, & Miller, 2015). The decline has been slower in AA women because of disparities in social and economic status (SES) that prevent early-stage breast cancer detection and treatment (Desantis et al., 2013). AA women have a 78% chance of surviving 5 years when diagnosed with breast cancer, compared to Caucasian women, who have a 90% chance of surviving over 5 years (Allicock et al., 2013; Karcher et al., 2014). Inequities in SES have had a lasting impact on the outcomes of breast cancer detection for AA women, which often occurs at a late stage.

Inequities in SES influence how AA women make breast cancer screening and treatment decisions. SES is underlined by cultural, personal, and structural factors that present challenges for AA women to access effective care and treatment (Bowen et al., 2013). Inequities in SES have negatively impacted the effectiveness of breast cancer improvement measures (Bowen et al., 2013), including early breast cancer detection.

Early-stage breast cancer detection is essential to successful treatment outcomes. When breast cancer screening rates between AA and Caucasian women are similar, diagnosis at a low stage is 10% higher for Caucasian women than AA women (Desantis et al., 2013). Infrequent or missed breast cancer screening and untimely doctor visits for results and treatment are responsible for late-stage breast cancer diagnosis in many AA women (Coughlin, 2014; Talley & Williams, 2015). Although breast cancer screening is crucial to early-stage breast cancer detection, timely and high-quality care and treatment are also necessary to ensure the best outcomes; these are often not accessed.

The lower breast cancer survival rate in AA women has been linked to their inability to receive the same high-quality care and treatment as Caucasian and other women (Desantis et al., 2016 & C. E. Jones et al., 2014). AA women are more likely to experience delayed care due to costs than Caucasian women (Conners et al., 2014; Danforth, 2013). AA women with public insurance often receive different care than women with private insurance (Conners et al., 2014). Affordable, high-quality care is necessary to ensure the best breast cancer outcomes and improve negative health-seeking behaviors.

Improving negative health-seeking behavior in AA women is critical and might improve breast cancer outcomes. Improving negative health-seeking behavior in AA women according to Garcia, et al. (2012) includes informing their knowledge about the importance of timely breast cancer screening. Cartwright, Dumenci, Siminoff, & Matsuyama, (2014) and Sheppard et al. (2014) found that AA women have limited understanding of information that is important in making breast cancer screening decisions. Franceschi, & Wild (2013) and Rausch et al. (2012) reported that breast cancer incidents can be reduced by 50% and breast cancer deaths by 33% when health behaviors are improved.

Not many studies are available on negative health-seeking behavior in AA women toward early-stage breast cancer detection, which is instrumental in reducing the high mortality rate. The aim of this study was to provide data on negative health-seeking behavior toward early-stage breast cancer detection in AA women age 40 years and older. Negative health-seeking behavior toward early breast cancer detection was operationally defined in this study as lack of a personal doctor, lack of health insurance coverage, lack of doctor visits within the past 12 months, and non adherence to breast cancer screening, specifically mammograms. The ACS reported that many lives have been saved and many more can be saved because of early breast cancer detection.

The results of this study may influence positive social change by providing useful information for strategic development and intervention measures that will improve negative health-seeking behavior toward early-stage breast cancer detection in AA women. AA women might be able to access timely breast cancer screening as well as

treatment programs, which might in turn reduce the high breast cancer mortality rate (Miller et al., 2014). Highlighted in the remainder of this chapter is the background to the research problem, the problem statement, the purpose of the study, the research questions and hypotheses, the theoretical foundation of the study, and the nature of the study.

Background of the Study

Breast cancer is a serious health condition that is affecting women of all races. Negative health-seeking behavior toward early-stage breast cancer detection in AA women has resulted in the highest breast cancer mortality, even with the highest breast cancer incidence occurring among Caucasian women (George et al., 2014; Sail, Franzinia, Lairson, & Du, 2012; & Ward, 2014). Negative health-seeking behavior toward early-stage breast cancer detection in AA women consist of lack of action toward breast cancer screening (Patil, Parbhankar, Bansode-Gokhe, Shelke, & Singh, 2016), which is essential in early diagnosis and treatment to ensure the best outcomes.

Negative health-seeking behavior is common among AA women, in whom breast cancer is prevalent, which is detrimental to their health and well-being. Negative health-seeking behavior hinders the right choices in access to breast cancer screening (Patil et al., 2016, & Poortaghi et al., 2015). Accessing breast cancer screening is affected by various demographic and socioeconomic factors (Saydah, Imperatire, & Beckles, 2013). These factors have been detrimental to successful breast cancer outcomes for AA women.

Demographic and socioeconomic factors are contributors to negative health-seeking behavior in AA women. Demographic and socioeconomic factors include age, race, lack of access to healthcare, and health literacy (ACS, 2015). Age is a significant

factor in how demographic and socioeconomic factors influence negative health-seeking behavior (Danforth, 2013) toward early-stage breast cancer detection and diagnosis.

For AA women, age is a crucial factor in early-stage breast cancer detection. Breast cancer diagnosis is more prevalent in AA women 40 years and older (Danforth, 2013). In the state of Florida, an estimated 95% of female breast cancer diagnoses occur at the age of 40 or older (Florida Department of Health [FDH], 2014). Brandt et al. (2015) found that breast cancer survival is directly related to the age at which diagnosis occurred.

The key to early breast cancer diagnosis and successful treatment is early-stage discovery, hence the importance of having a personal doctor, health insurance, and doctor visits annually and adhering to the guidelines for breast cancer screening. Many breast cancer organizations in the United States have made recommendations regarding breast cancer screening. The ACS recommends that women between 40 and 54 years old have a mammogram every year; and that women 55 years and older get a mammogram every 2 years (Corrarino, 2015). Hendrick and Helvie (2012) found that one life can be saved for every 84 women between 40 and 84 years old who adhere to the guidelines for breast cancer screening, and 5 screenings annually is equal to one breast cancer life year gained.

Problem Statement

Compliance with breast cancer screening guidelines can be lifesaving. However, negative health-seeking behavior in AA women in association with demographic and SES factors contributes to non compliance with breast cancer screening, which can detect breast cancer at the early stage (Melvin et al., 2016). The World Health Organization

(WHO, 2017) reported that improving early-stage breast cancer detection in AA women requires an understanding of the barriers that prevent early-stage breast cancer detection and screening and timely breast cancer screening is a process not just a procedure.

There are many breast cancer screening tools in existence, such as mammography, clinical breast exams (CBE), and magnetic resonance imaging (MRI). Researchers believe that mammography is the most popular and effective tool used in early-stage detection of breast cancer (Sui, 2016). Breast cancer screening tools are beneficial in early breast cancer detection, which helps to ensure successful treatment outcomes (FDH, 2014; Sui et al., 2016 & Wardle, Robb, Vernon, & Waller, 2015) and is believed to be instrumental in reducing high mortality rates.

High breast cancer mortality in AA women is connected to late-stage diagnosis (Corrarino, 2015). Late-stage diagnosis is a result of non compliance with breast cancer screening, which is a proven barrier to breast cancer survival outcomes (Chowdhury et al., 2016). According to Davis et al. (2015), non compliance with breast cancer screening is detrimental to successful treatment outcomes. Early-stage breast cancer detection allows for more effective treatment that is often less complex and expensive (WHO, 2017).

For AA women age 40 years and older, there is a gap in literature on negative health-seeking behavior toward early-stage breast cancer detection. More research focusing on negative health-seeking behavior toward early-stage breast cancer detection in AA women is needed to address and promote the importance of early-stage breast

cancer detection. Addressing this gap may promote changes in the behavior of AA women toward timely mammogram screening and early-stage breast cancer detection.

Purpose of the Study

Negative health-seeking behavior toward early-stage breast cancer detection involves not taking the right actions to improve breast cancer outcomes. Among AA women, taking action toward early-stage breast cancer detection is related to perceived risks (Allicock et al., 2013). Perceived risks include fear of breast cancer detection, health care providers, and breast cancer treatment (Pelsmacker, Lewi, & Cauberghe, 2017), which all play a role in negative health-seeking behavior toward early-stage breast cancer detection.

The purpose of this study was to research negative health-seeking behavior toward early-stage breast cancer detection among AA women age 40 years and older. The quantitative research method was used in this study. The intent was to explore negative health-seeking behavior, operationalized as lack of a personal doctor, lack of health insurance coverage, and lack of doctor visits within the past 12 months toward early-stage breast cancer detection, operationalized as lack of mammogram screening within the 2 years preceding 2016 in AA women age 40 years and older.

Secondary data from the Centers for Disease Control and Prevention (CDC) 2016 Behavioral Risk Factor Surveillance System (BRFSS) survey were used. The dependent variable was lack of mammogram screening within the 2 years because mammogram screening is the most popular breast cancer screening tool. The independent variables were lack of a personal doctor, lack of health insurance, and lack of doctor visits within

the past 12 months. Regression analysis was conducted to examine relationship and significance between the variables.

Research Questions and Hypotheses

All research studies are guided by research questions. For this study, the research questions, which were answered by testing the associated hypotheses using regression analysis, were as follows:

RQ1: Is there a relationship between negative health-seeking behavior, operationalized by lack of a personal doctor, and early-stage breast cancer detection, operationalized by lack of mammogram screening within the past 2 years, in AA women age 40 years and older?

Ho1: There is no relationship between lack of a personal doctor and lack of mammogram screening within the past 2 years in AA women age 40 years and older.

Ha1: There is a relationship between lack of a personal doctor and lack of mammogram screening within the past 2 years in AA women age 40 years and older.

RQ2: Is there a relationship between negative health-seeking behavior, operationalized by not having health insurance, and early-stage breast cancer detection, operationalized by lack of mammogram screening within the past 2 years, in AA women age 40 years and older?

Ho2: There is no relationship between not having health insurance and lack of mammogram screening within the past 2 years in AA women age 40 years and older.

Ha2: There is a relationship between not having health insurance and lack of mammogram screening within the past 2 years in AA women age 40 years and older.

RQ3: Is there a relationship between negative health-seeking behavior, operationalized lack of doctor visits within the past 12 months, and early breast cancer detection, operationalized by lack of mammogram screening within the past 2 years, in AA women age 40 years and older?

Ho3: There is no relationship between lack of doctor visits within the past 12 months and lack of mammogram screening within the past 2 years in AA women age 40 years and older.

Ha3: There is a relationship between lack of doctor visits within the past 12 months and lack of mammogram screening within the past 2 years in AA women age 40 years and older.

Theoretical Foundation of the Study

There are many models and theories in existence today that were developed to help researchers explain health-seeking behavior and recommend effective strategies that are necessary to improve behavior. Social psychologists Hochbaum, Rosenstock, and Kegels developed the health belief model (HBM) in the 1950s to understand why people would not adopt measures and strategies for disease prevention and screening (Cao,

Cheng, & Wang, 2014). According to Cao et al. (2014), the HBM based on behavioral and psychological theories involving people's desire to avoid being ill and to get well if ill, as well as the belief that certain actions regarding health can prevent and/or cure illness.

The HBM holds that risk susceptibility, risk severity, benefits to action, barriers to action, self-efficacy, and cues to action are the six constructs that can be used to predict health behavior (C. L. Jones et al., 2015). The course of action taken by individuals is often based on how they perceive the benefits and barriers relating to health behavior. Many researchers and scholars have used the HBM, one of the most popular theoretical frameworks to examine and explain behaviors related to health (Poortaghi et al., 2015).

As such, Baghianimoghadam et al. (2013) used the HBM to study behaviors in heart failure patients, and Rogers, Goodson, and Foster (2015) used it to study colorectal cancer screening behaviors among AA men. The HBM applies to the study of negative health-seeking behavior in relation to early-stage breast cancer detection in AA women 40 years and older. Based on the HBM, AA women's belief in the personal threat of breast cancer and the disease itself, along with their belief in the effectiveness of breast cancer screening, can predict the likelihood of them taking actions to ensure early-stage breast cancer detection.

Nature of the Study

The nature of the study was quantitative. Using the quantitative research method in this study allowed for comparison, and measurement (McCusker & Gunaydin, 2014) of the variables. The dependent variable was lack of mammogram screening within the

past 2 years and represented females 40 years and older within the United States who reported mammogram screenings for the past 2 years preceding 2016. The independent variables were lack of a personal doctor, lack of health insurance, and lack of doctor visits within the past 12 months. The variables were statistically analyzed to examine negative health-seeking behavior toward early-stage breast cancer detection.

The BRFSS database by the CDC was used to access data for this study. Data for AA women on personal doctors, health insurance coverage, doctor visits within the past 12 months, and mammogram screening within the past 2 years from the 2016 BRFSS survey were uploaded into SPSS. Descriptive and regression analysis was used to analyze the variables (McCusker & Gunaydin, 2014) to find whether there was a relationship and significance between them.

Summary

Negative health-seeking behavior in AA women toward early-stage breast cancer detection is cause for great concern. Disparities in access to primary care providers, lack of health insurance, and mammogram screening rates have contributed to thousands of female breast cancer deaths annually. Consequently, breast cancer deaths in AA women are at an all-time high, even though research has shown steady declines in deaths among other races throughout the years. Although there has been much improvement in early detection of breast cancer, mortality rates continue to rise for AA women.

High breast cancer mortality in AA women is influenced by social and economic inequities underlined by cultural, personal, and structural factors that present significant barriers to effective treatment. As a result, social, and economic inequities affect the way

in which AA women make breast cancer treatment decisions that negatively impact the outcomes of health improvement and promotion measures. All in all, improving negative health-seeking behavior in AA women is critical to improving early-stage breast cancer detection, promoting successful treatment outcomes, and reducing the high mortality rate.

Negative health-seeking behavior is common among AA women and is detrimental to their health and well-being, in addition to hindering timely access to medical care and treatment. The HBM aligns with the belief that negative health-seeking behavior toward early breast cancer detection in AA women age 40 years and older is affected by lack of access to personal doctors, lack of health insurance, and lack of annual doctor visits, which contribute to low mammogram screening rates. In summary, negative health-seeking behavior prevents early-stage breast detection, diagnosis, and successful treatment for AA women.

Review of Literature

Introduction

This review of current literature provides an exhaustive investigation into the available literature surrounding the disparities associated with negative health-seeking behavior in AA women toward early-stage breast cancer detection. The literature review includes four main sections. In the first section, I present the search strategy used to secure the needed literature. In the second section, I investigate important topics related to the variables. The third section provides the underpinnings of the theoretical construct used for this study. The fourth section highlights the study variables and covariates.

Literature Search Strategy

The Walden University Library databases were instrumental in locating articles pertinent to this research study. The databases that were included in the search were Medline, ProQuest Central, and ProQuest Health and Medical Collection. The terms and phrases that were used in different combinations to search the databases included *negative health seeking behavior in African American women with breast cancer, health seeking behavior and African American women, African American women and personal doctors, health insurance and African American women, breast cancer screening and African American women, types of breast cancer screening, breast cancer mortality in African American women, access to health care and African American women, health disparities among African American women, and disparities in health seeking behavior among African American women*. The search was limited to scholarly, peer-reviewed articles that were published between 2012 and 2018. The search yielded a total of 313

articles with topics of interest; 72 were instrumental to the study and are listed in the references.

Breast Cancer in African American Women

Breast cancer is a common disease diagnosed among women of all races. In the United States, 1 in every 8 women (12%) is diagnosed with invasive breast cancer every year (Desantis et al., 2015). Women whose close blood relatives have a high prevalence of breast cancer are the most likely to be at risk (Haber, Ahmed, & Pekovic, 2012). However, only 15% of women who are diagnosed with breast cancer have family members who were diagnosed (Haber et al., 2012). In addition, 85% of women with breast cancer have no family history of breast cancer (Haber et al., 2012). Not only is breast cancer commonly diagnosed in AA women; it is often diagnosed at a late stage.

Much improvement has been made in detecting, diagnosing, and treating breast cancer at the early stage over the years. Even with these improvements, AA women suffer a disproportionate disadvantage from late-stage breast cancer diagnosis (Allicock et al., 2013). Although many AA women have been diagnosed at the early stage, negative health-seeking behavior associated with demographic and socioeconomic factors causes serious delays in diagnosis, which have led to a high mortality rate (George et al., 2015).

Breast cancer diagnosis and treatment at the early stage are of paramount importance. According to studies, breast cancer is one of the leading causes of death in AA women age 40 and years and older (Ha et al., 2015; McCarthy et al., 2015; White-Means et al., 2016). Moreover, AA women who do not have a personal doctor, lack health insurance, and lack doctor visits are at higher risk for late-stage breast cancer

diagnosis (Fowler, 2016). Additionally, according to Danforth (2013), AA women are often diagnosed with late-stage breast cancer, resulting in poorer survival outcomes compared to other women.

Breast Cancer Risks for African American Women

Many factors increase the risk for breast cancer for AA women. These factors include race, comorbidities, adverse events, obesity, and SES. Low SES is a common risk factor for breast cancer mortality because of lack of access to healthcare providers (Parise & Caggino, 2013). Additionally, Shi et al. (2015) reported that women with public health insurance like Medicaid and women who are underinsured and uninsured are at greater risk of being diagnosed at an advanced stage with breast cancer.

AA women have more breast cancer risk factors than women from other races. Hashim et al. (2016) argued that race is a proxy for SES because the poverty level is higher in AA women compared to other women. Moreover, Iqbal et al. (2015) found that even when controlling for SES, being as AA woman an independent predictor of breast cancer mortality because of both biological and non biological factors.

Breast cancer risk factors contribute to high breast cancer mortality (CDC, 2014). Researchers have found that AA women have limited knowledge about the risk factors for developing breast cancer and the symptoms of the disease (C. E. Jones et al., 2014). Moreover, C. E. Jones et al. (2014), and Kaiser et al. (2014) found that 25% of AA women believed they were not susceptible to breast cancer before they were diagnosed compared to 44% of Caucasian women. In addition, C. E. Jones et al. (2014) also found

that AA women did not believe that if they had breast cancer, their daughters were at risk for being diagnosed with the disease.

Breast Cancer Incidence, Survival Rate, and Mortality

Breast cancer incidence, survival, and mortality rates vary among different races. Although the breast cancer incidence rate is 17% higher in Caucasian women (Corrarino, 2015), the mortality is higher in AA women (Siegel, Miller, & Jemal, 2015). Moreover, AA women have the lowest breast cancer survival rate (Doughty, 2013; National Center for Health Statistics, 2013), and a 42% higher death rate (Desantis, 2016). In fact, both the ACS (2017) and the CDC (2014) reported that poor breast cancer survival outcomes in AA women can be attributed to late-stage diagnosis due to inequities in health care access and breast cancer screening.

According to studies, AA women have less chance of surviving breast cancer diagnoses for more than 5 years compared to Caucasian women, who have more than 5 years of surviving breast cancer diagnoses (Allicock et al., 2013; Jiang et al., 2016; Jones, Katapodi & Lockhart, 2015). Thus, breast cancer screening is recommended every year and every 2 years for women 40 years and older (Miller et al., 2012). Screening recommendations aid in promoting early-stage breast cancer detection in efforts to improve survival outcomes.

Negative Health-Seeking Behavior Toward Early Breast Cancer Detection

Negative health-seeking behavior in AA women prevents early-stage breast cancer detection. Negative health-seeking behavior is associated with psychosocial factors (Yoo, Levine, & Pasick, 2014) and SES (Bowen et al., 2013), that prevent early-

stage breast cancer detection and timely follow-through with doctor visits. The outcome of negative health-seeking behavior in AA women diagnosed with breast cancer is a low survival rate.

Late-stage breast cancer diagnosis is more prevalent among AA women. In fact, AA women are diagnosed with late-stage breast cancer 25% more often than Caucasian women because of non compliance with breast cancer screening (Iqbal et al., 2015; Schubart, Farnan, & Kass, 2014). Furthermore, in 2014, the CDC reported that late-stage breast cancer diagnoses in AA women were related to missed and/or infrequent mammograms, as well as late follow-up doctor visits after breast self-exams and breast cancer detection.

Breast cancer detection at the early stage and diagnosis increase the odds for successful treatment. However, studies have shown that AA women usually present with larger breast cancer tumors, and at more advanced stages (Doughty, 2013; Winter et al., 2016). In addition, DeSantis et al. (2015) and Yung and Ligibel (2016) found that for AA women, unlike women of other races, breast cancer diagnosis is often complicated by the presence of other diseases, which increases the risk of patients dying by over 42%.

For breast cancer to be diagnosed at an early stage, AA women must adhere to screening guidelines. Early-stage breast cancer is diagnosed in AA women 51% of the time, unlike Caucasian women, who are diagnosed 61% of the time (Corrarino, 2015). According to Hughes (2013) and Taioli et al. (2014), lack of knowledge about late-stage breast cancer diagnosis outcomes in AA women is associated with negative health-

seeking behavior. Khakbazan et al. (2014) found that many late-stage breast cancer cases were identified by AA women themselves who presented with breast cancer symptoms.

For AA women, adherence to breast cancer screening guidelines and treatment includes making decisions based on knowledgeability about breast cancer treatment and possible outcomes, which can be challenging to establish (Jiang et al., 2016). Therefore, AA women are the most unlikely of all ethnic groups to actively seek general health care information about breast cancer (Jiang et al., 2016). As such, knowledge is a crucial factor in early-stage breast cancer detection, diagnosis, and successful outcomes for AA women.

Among a sample of 101 AA women in Western Pennsylvania and Eastern Ohio who were diagnosed with breast cancer, Jiang et al. (2016) found that many of the women lack the awareness about breast cancer prevention measures and had little or no knowledge about their bodies. In a review of previous studies, Khakbazan, Taghipour, Latifnejad Roudsari, & Mohammadi (2014) reported that over 30% of AA women who have breast cancer symptoms do not seek treatment for up to 3 months and longer after the symptoms were discovered. Having an understanding of breast cancer information and access to the right resources could improve AA women's decisions about timely breast cancer screening.

Making breast cancer treatment decisions in a timely manner is very beneficial. Many AA women have shown interest in receiving information on breast cancer and breast cancer intervention measures (Paxton et al., 2014). Furthermore, many AA women believe that adopting and maintaining healthy lifestyles require promotion and

improvement measures that are tailored to their needs and reflect their culture (Paxton et al., 2014). Negative health-seeking behavior in AA women toward early breast cancer detection is evident in lack of access to health care providers, lack of health insurance, lack of doctor visits (Khakbazan et al., 2014), and poor outcomes of breast cancer.

Researchers have reported that health-seeking behavior is influenced by demographic factors, low SES, psychosocial factors, and inequities in access to health care. Many AA women do not have a personal doctor and/or health insurance, which may lead to lack of doctor visits (CDC, 2017). In an exploratory study of 82 low-income women age 40 to 64 years with abnormal mammograms, Bowen et al. (2013) reported that social and economic inequities were associated with treatment decisions.

In a systemic review of 18 different studies with 6,183 participants, C. E. Jones et al. (2014) found that fear, lack of knowledge, and differences in access to health care were barriers to early-stage detection and diagnosis of breast cancer. In a review of patient records after receiving consent from patients, Rauscher et al. (2013) reported that patients with lower SES who experienced barriers such as lack of access to care and health insurance had lower screening rates for breast cancer, which resulted in late breast cancer diagnosis and a lower chance for survival.

Many studies have presented associations between health care access and early breast cancer detection and treatment. Conversely, several studies have contradicted the effect of timely breast cancer screenings such as mammograms on positive breast cancer outcomes. For example, Loberg et al. (2015) found a high risk of receiving mammogram screenings that are false positives for U.S. women. Thirty percent of women received

false-positive mammogram screening results over a 10 years period, and 50% of all women would receive false-positive mammogram screening results at some point (Loberg et al., 2015).

According to Brodersen and Siersma (2013), false-positive mammogram results affect women psychologically for up to 2 years after their receipt. Pace and Keating (2014) reported that although mammography is associated with reducing breast cancer mortality by 19%, there is a 61% risk for a false-positive mammogram over 10 years. Although there are uncertainties, these studies suggest the importance of timely breast cancer screening, which has been instrumental in reducing breast cancer mortality.

More evidence exists to support a positive association between adherence to timely breast cancer screening and early breast cancer detection, which provided the momentum for this research study. Furthermore, the purpose of this study was to research negative health-seeking behavior toward early-stage breast cancer detection. As a result, the outcome of this study may be instrumental in improving the knowledge of not just AA women, but also women of all races on the importance of timely breast cancer screening.

Health Care Access and African American Women

Health care access includes routine doctor visits for physical exams even when there is no physical illness or injury. The pathway to health care access is primary care services, which depend on an individual's decision to seek them (Poortaghi et al., 2015). The AA population is reported to be the unhealthiest in the United States (Noonan et al., 2016). Morbidity, mortality, and various other health risks influence healthcare needs.

Access to care health services represents the social response to health needs and either improves and/or resolves them (Noonan et al., 2016). Early-stage breast cancer detection is associated with a 99% higher survival rate than late-stage detection (Miller et al., 2015), but AA women are often diagnosed at the late stage because of lack of access to health care.

In assessing health care access for outpatient services across races, Saudi et al. (2017) found that African Americans are 30% less likely to access outpatient services compared to Caucasians. Lack of health care access is related to demographic factors and low SES resulting in poverty on health which makes AA women less likely to seek care (Pullen, Perry, & Oser, 2014). Pullen et al. (2014) found that AA women with lower SES who lacked a personal doctor and health insurance were less likely to have doctor visits for checkups.

Many AA women often do not seek to access health care because of their race. Health care access is related to racial discrimination, especially in healthcare facilities (Armstrong et al., 2013; Stepanikova & Oates, 2017). As such, compared to Caucasian women, AA women often underutilize health care services, which lead to poor health outcomes (Pullen et al., 2014). According to the ACS, AA women are 3 times more likely to be uninsured, making them less likely among races to have health care access.

Breast Cancer Screening and African American Women

The importance of timely breast cancer screenings is often underestimated among AA women, although breast cancer screening is critical in early-stage breast cancer detection. CBE, MRI, and mammography are important tools used in breast cancer

detection (ACS, 2017). However, mammography is considered the best and most effective tool for early breast cancer detection (ACS, 2017; Chowdhury et al., 2016). According to Sui (2016), breast cancer screening through mammography has significantly improved over the years.

Non compliance with mammogram screening is a significant barrier for AA women (Aamar & Wright, 2015; Miller et al., 2012). Getting a mammogram based on the ACS guidelines is necessary to detect the growth of breast cancer before any signs and symptoms develop (Chowdhury et al., 2016). Mammogram screening facilitates the chance of early-stage breast cancer detection and diagnosis, and it has saved many lives.

AA women often undervalue the importance of timely mammogram screening (Corrarino, 2015). In fact, studies have shown that breast cancer deaths have been reduced by up to 15% because of timely mammography screening (Garcia et al., 2012). In addition, detecting and successfully treating smaller breast cancer tumors in women 40 years and older have been associated with timely mammography screening (Loberg et al., 2012). Timely mammography is instrumental in reducing the mortality rate in AA women.

Among women of all races, AA women are the most unlikely to get regular mammography screenings (Hall et al, 2012). Lack of mammography screening is a big contributor to the high mortality rate for breast cancer because tumors are also usually larger and more aggressive when diagnosed (Garcia et al., 2012). Moreover, many AA women lack knowledge regarding the implications of late-stage breast cancer detection

and diagnosis (Garcia et al., 2012; Oldach & Katz, 2014). Lack of health insurance influences non adherence to mammogram screening (Carney et al, 2012).

Non adherence to mammography screening among AA women will continue to result in late-stage breast cancer diagnosis and high mortality rates. Studies have shown that if mammography screening were increased by just 5%, breast cancer mortality would decrease by 560 deaths per year (Miller et al., 2012). Moreover, one main focus of the Affordable Care Act (ACA) was removing barriers to preventive health screening and making insurance costs affordable to guarantee access to health care services (CDC, 2012). Improving negative health-seeking behavior in AA women requires access to health care, which is necessary to improve the detection of breast cancer at the early stage.

Breast cancer screening is instrumental in decreasing breast cancer mortality. Breast cancer screening can reduce breast cancer mortality in AA women by as much as 49% when they adhere to the screening guidelines (Gathirua-Mwangi et al., 2016). AA women often do not access regular screenings in the recommended timeframe (Batina et al., 2013; Kolahdooz, 2014). As such, breast cancer screening is much lower among AA women because they do not have a personal doctor and health insurance (Miller et al., 2012). Breast cancer screening is an integral part of early-stage breast cancer detection.

The Health Belief Model (HBM)

This study was grounded in the HBM. According to C. L. Jones et al. (2015) and Poortaghi et al. (2015), the HBM focuses on behaviors that affect health. The HBM is rooted in the belief that health issues are of high importance and actions should be taken

based on the perceived vulnerability health issues create, and the perceived actions taken based on the benefits compared to the cost (Bishop, Baker, Boyle, & MacKinnon, 2017). The interaction of these beliefs encourages healthy patterns of behavior that promote disease prevention (Bishop et al, 2017). The HBM is one of the most popular theory's used in research to explain preventative behavior (Bishop et al., 2017) such as accessing breast cancer screening.

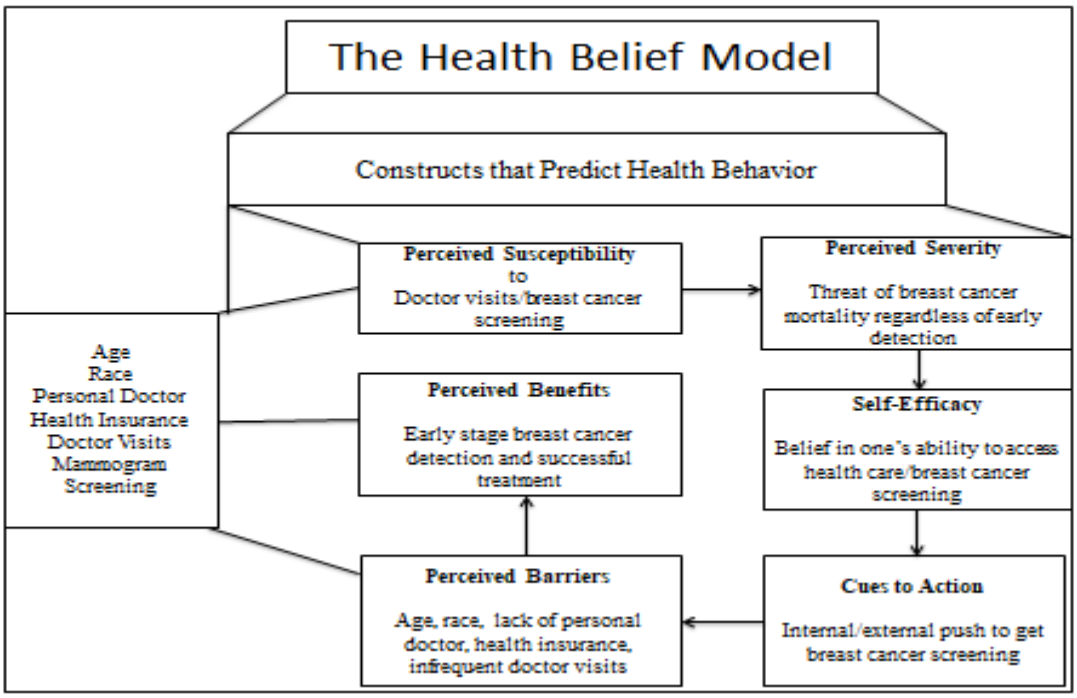

Figure 1. The health belief model

Negative health-seeking behavior in AA women presents challenges to early-stage breast cancer detection. The HBM can be applied to the role disparities like lack of a personal doctor, lack of health insurance, lack of doctor visits and lack of mammogram screening play in explaining negative health-seeking behavior toward early breast cancer detection in AA women. Moreover, Taioli, Joseph, Robertson, Eckstein, & Ragin (2014)

found studies that connect lack of health care access to AA women's adherence to the breast cancer screening guidelines.

For AA women, lack of a a personal doctor, lack of health insurance, lack of doctor visits and lack of mammogram screening relates to negative health-seeking behavior toward early-stage breast cancer detection. The HBM is relevant in explaining negative health-seeking behavior toward early-stage breast cancer detection (Fleury, Grenier, Bamvita, & Caron, 2014). According to C. L. Jones et al. (2015), achieving favorable preventative behavior change should be focused on perceived susceptibility, perceived severity, perceived benefits, perceived barriers, self-efficacy, and cues to action, the constructs of the HBM.

Perceived susceptibility. One significant aspect to health care access for AA women is their perception regarding breast cancer, detection, diagnosis and treatment. Perceived susceptibility in this study focuses on the actions AA women take to prevent late stage breast cancer. These actions include acquiring a personal doctor and health insurance and having at least one or more doctor visits annually and adherence to mammogram screening.

These actions would be taken if AA women regarded themselves susceptible to breast cancer (Eskandari-Torbaghan, Kalan-Farmanfarma, Ansari-Moghaddam, & Zarei, 2014). As susceptibility increases, AA women are more likely to become more involved in seeking the care they desire (Basalan lz & Tumer, 2016). According to Bishop et al., (2017) and Cao, Chen, & Wang (2014), individuals regard themselves as susceptible based on their perceptions of the possibility of becoming ill.

Perceived severity. Perceived severity focuses on the subjective belief of possible extensive harm whether or not a certain behavior is performed (C. L. Jones et al., 2015). For AA women, perceived severity is not just about breast cancer detection and diagnosis, but also about the challenges to their state of affairs like losing time from work and financial burdens (Cao et al., 2014). Perceived severity is a barrier to early-stage breast cancer diagnosis.

The combined dimensions of perceived susceptibility and perceived severity make up perceived threat even with the possibility that perceived threat might reduce an action by enhancing performance (Bishop et al., 2017). C. L. Jones et al. (2015) found that AA women will take preventative actions regarding their health to avert illnesses if they believe there will be serious consequences. The perceived severity of emotional and financial burdens present challenges for early breast cancer detection for AA women.

Perceived benefits. Perceived benefit is the belief that reducing susceptibility or severity which leads positive outcomes is based on the course of action that is available (C. L. Jones et al., 2015). Lack of a personal doctor and health insurance are barriers to the perceived benefits of early-stage breast cancer detection. Huang, Kuok, Wang, Wang, & Tsai (2016) believes that perceived benefits highlight the positive benefits of engaging in breast cancer screening that promote early-stage breast cancer detection but many factors present challenges for AA women.

Shojaei, Farhadloo, Aein, & Vahedian (2016) reported that perceived benefits are perceived effectiveness of the actions accessible in reducing the threat of a disease. Breast cancer screening is the effective action for early-stage detection of breast cancer

but is often not accessible for AA women. AA women often do not access breast cancer screening because of lack of health care access even for those who believe the benefits would be successful.

Perceived barriers. Perceived barriers focus on the possible negative outcomes of engaging in a health action. Perceived barriers are beliefs that are based on how difficult and costly it is to participate in behaviors that promote health (Huang et al., 2016); and only if some of the negative attributes are related to the health action perceived (C. L. Jones et al., 2015).

Many AA women believe that whether or not they adhere to breast cancer screening guidelines, the outcomes will be negative. Allen et al. (2013) found in a study that women between 40 and 50 years old were not convinced about the effectiveness of mammogram screening. Among 244 AA women, Gathirua-Mwangi et al. (2016) found that fear of breast cancer detection prevented adherence to mammogram screening.

Self-efficacy. Self-efficacy is an individual's belief in their ability to engage in behaviors that promote health. Self-efficacy is based on the belief that the benefits gained could outweigh the barriers (Huang et al., 2016). According to Sas-Nowosielski, Hadzik, Górna, & Grabara (2016), people are capable of carrying out positive health behaviors even if there are barriers.

For AA women, believing that breast cancer screening is instrumental to early detection and the actual engagement in breast cancer screening fulfills self-efficacy. Breast cancer treatment is most successful when detection occurs at the early stage

(Sledge, 2016). Therefore, even with all the challenges AA women face with health care access it is possible to find ways to adhere to the breast cancer screening guidelines.

Cues to action. Cues to action are based the belief that cues are what determine an individual's readiness for accessing health care services. Cues to action initiate decision making that is either influenced internally or externally (Huang et al., 2016). Bishop et al. (2017) noted that cues to action are stimulated by precipitating and medicating factors which allow individuals to act, or continue to maintain an action that was already taken.

AA women's perceived susceptibility and severity of breast cancer should ignite their cues to action. The benefits of breast cancer screening outweigh the barriers which paves the way for action (Cao et al., 2014). A breast lump or family history of breast cancer; and mammogram screening guidelines are key internal and external cues to action (C. L. Jones et al., 2015) that should instill positive health seeking behavior.

The constructs of the HBM was applied in the study of negative health-seeking behavior toward early-stage breast cancer detection in AA women 40 years and older. Access to personal doctors, health insurance coverage, frequency of doctor visits and mammogram screening rates were analyzed to assess the behavior of AA women toward early-stage breast cancer detection. The rationale is that access to personal doctors, health insurance coverage, doctor visits and mammogram screening are essential in clinical practice according to Sui (2016), to promote the benefits of early breast cancer detection.

Several studies revealed that the HBM has been instrumental in assessing health behavior. These studies include: Jeihooni, Hidarni, Kaveh, MHajizadeh, & Askari (2015)

who used the HBM to assess the prevention of osteoporosis in women; Bayu, Berhe, Mulat, & Alemu (2015) to study adherence to cervical cancer screening; Tola et al. (2016) to study adherence to tuberculosis treatment; Reynolds, Nguyen, Fisher, Odell, & Xandre (2016) to study adherence to hepatitis A and B vaccinations; and Zare et al. (2016) to study behavior toward prostate cancer screening. Researchers provided insights into intervention measures that could improve and maintain health. The HBM allowed researchers to identify and address the issues associated with negative behavior.

The HBM aligns with the belief that the independent variables lack of a personal doctor, lack of health insurance and lack of doctor visits within that past 12 months is related to negative health-seeking behavior toward the dependent variable lack of mammogram screening within the last 2 years. Guided by the HBM, it was hypothesized that there is a relationship and statistical significance between the variables.

Research Variables

Lack of a personal doctor, lack of health insurance, lack of doctor visits within the past 12 months and lack of mammogram screening within the past 2 years are reflected in poor breast cancer outcomes among AA women. These disparities are just some of the reasons why it is more likely that AA women will engage in behaviors that increase their breast cancer risks than women of other races (Desantis et al., 2016). In fact, Rauscher, Conant, Khan, & Berbaum (2013) found that women who do not have a personal doctor and health insurance will seek breast cancer screening and treatment in facilities that lack the right resources, which exposes them to further risks.

Poverty is a major predictor in lack of basic human necessities such as health insurance and access to quality health care services (Makoge, Maat, Vaandrager, & Koele, 2017). Of all the ethnic groups in the United States, African Americans are classified as the poorest (Noonan, Velasco-Mondragon, & Wagner, 2016). Moreover, demographic and socioeconomic factors contribute to poverty and are potent factors that influence disparities in health (Zonderman, Ejiogu, Norbeck, & Evans, 2014). All in all, health disparities are reflected in lack of a personal doctor, lack of health insurance and lack of doctor visits which are related to negative health-seeking behavior in AA women.

Lack of a personal doctor. Having a personal doctor is an integral part of early-stage breast cancer detection. According to Virgo, Lerro, Klabunde, Earle, and Ganz (2013), from detecting breast cancer at the early stage, to diagnosis and treatment, personal doctors play a pivotal role in patient care for breast cancer. Personal doctors know more about patients and have developed lasting relationships with them over time (Wallner et al., 2016). As such, personal doctors are aware of patient needs and their preferences as well as their values.

Lack of a personal doctor is one of the key challenges for AA women in early-stage breast cancer detection. Personal doctors are considered the most important allies in early-stage breast cancer detection and treatment (ACS, 2014 & Wallner et al., 2016). According to Virgo et al. (2013) and Edwards et al. (2014), personal doctors work with breast cancer specialists so patients can benefit from a combined set of knowledge and support system since they already know the patients and their history and health status.

AA women who do not have a personal doctor are at a disadvantage for early breast cancer detection. Personal doctors usually refer patients for breast cancer screening and will even remind them of the importance of getting screened (Robinson, Tsark & Braun, 2014). Not having a personal doctor presents even more challenges as it prevents effective communication, coordination and continuation of care for both patients and breast cancer specialty doctors (Edwards et al., 2014). Having a personal doctor is very essential in breast cancer detection, diagnosis, treatment and overall survival outcomes.

Lack of health insurance coverage. Health insurance is paramount in early diagnosis and treatment of breast cancer. The lack of affordable health care is the largest barrier in successfully battling breast cancer (Carney et al., 2012). Moreover, low breast cancer screening is more prevalent among women who are underinsured and uninsured (CDC, 2012). The lack of health insurance promotes late-stage breast cancer diagnoses and high breast cancer mortality.

The affordable care act (ACA) made it possible for over 6.8 million women with low incomes to have health insurance (Levy, Bruen & Leighton, 2012). Although over 60% of these women received health insurance, only an estimated 33% were eligible for breast cancer screening services (Levy et al., 2012). Moreover, even though the ACA made it possible for many AA women to have access to breast cancer screening services, millions remain uninsured (Levy et al., 2012). Without health insurance coverage, breast cancer mortality in AA women may continue to rise at alarming rates.

According to studies, having health insurance increases the likelihood of having a health care visit within a 2-year span (Carney et al., 2012). However, uninsured AA

women do not have the right sources of health care when compared to women who are insured (Shi et al., 2013). As a result, AA women's survival is at risk when lacking access to healthcare services such as breast cancer screening and successful treatment.

Lack of doctor visits. Negative health-seeking behavior is related to lack of doctor visits among AA women. Pullen, Perry and Oser (2014) found that AA women visit the doctor less frequently compared to women of other races. Furthermore, due to a combination of gender, race and low SES, AA women experience the worse mental and physical health (Perry, Harp & Oser, 2013). Lack of doctor visits lead to health care underutilization which is a significant factor in early breast cancer detection and high mortality rate.

The lack of doctor visits impedes patient-provider relationship which is important to improve breast cancer outcomes for AA women. Lack of doctor visits among AA women is influenced by a various factors that are demographically, socially, and culturally related (Perry et al., 2013). These factors have clearly impacted the infrequency with which AA women seek to be seen by physicians which negatively impact their lives.

Operational Definitions

Independent Variables

Lack of a personal doctor: The absence of someone considered to be a personal doctor or health care provider. In the 2016 BRFSS survey, the women were asked "Do you have one person that you think of as your personal doctor or health care provider?" The answers were coded as: yes, only one = 1, more than one = 2 and no = 3. For this study, the answers were recoded as: yes = 0 and no = 1.

Lack of health insurance coverage: AA women age 40 years and older who did not have health insurance. In the BRFSS survey, women were asked "Do you have any kind of health care coverage, including health insurance, prepaid plans such as HMOs, or government plans such as Medicare or Indian health?" The answers were coded as: yes = 1 and no = 2. For this study the answers were recoded as: yes = 0 and no = 1.

Lack of doctor visits within the past 12 months: The absence of at least one or more doctor visit within the past 12 months preceding 2016. In the 2016 BRFSS survey, the women were asked "How many times have you been to a doctor, nurse, or other health professional in the last 12 months? The answers were coded as number of times = 1 – 76 and none = 88. For this study the answers were recoded as: 1 or more = 0 and none = 1.

Dependent Variable

Lack of mammogram screening within the past 2 years: The most popular breast cancer screening method is mammogram (Chowdhury et al., 2016; ACS, 2017). Corrarino (2015) reported that the ACS recommends that women 40 years and older have mammogram screenings every year and every 2 years. In the 2016 BRFSS survey, women 40 years and older were asked "How long has it been since you had your last mammogram?" The answers were coded as: within the past year = 1; within the past 2 years = 2; within the past 3 years = 3; within the past 5 years = 4; and 5 or more years = 5. For this study, the answers were recoded as: within the past year/within 2 years = 0 and more than two years = 1. Mammogram screening within the past 2 years was an essential

dependent variable because the ACS reported that it is the most effective way to measure adherence to breast cancer screening rate which is pertinent to this study.

Confounding Variable

Age: AA Women 40 and older. According to the ACS screening guidelines, women 40 years and older should receive breast cancer screening every year and every 2 years (Corrarino, 2015). The age categories were recorded in 5 years categories for this study as: 40 – 44 = 1; 45 – 49 = 2; 50 – 54 = 3; 55 – 59 = 4; 60 – 64 = 5; and 65 and older = 6.

Definition of Terms

Economic inequities: Cultural and structural barriers that hinder the uptake of health care services and information regarding health status (Bowen et al., 2014). For AA women, the lack of the necessary cultural and personal information, the inability to comprehend information, and issues with transportation are all economic inequities that present challenges to access to healthcare services beneficial to health (Bowen et al., 2014).

Health inequities: Advantages and disadvantages of the dissimilarities in health determinants between population groups. AA women believe they receive different treatment from women who can afford to pay for treatment (Bowen et al., 2014). According to Bowen et al. (2014), the difference in health care treatment is embedded in the history of economic and social inequities within the African American culture.

Negative health-seeking behavior: Not taking the right actions that will ensure positive health outcomes. In this study it's inaction toward ensuring early-stage breast

cancer detection such as lack of a personal doctor, lack of health insurance, lack of doctor visits within the past 12 months, and non adherence to mammogram screening guidelines.

Social inequities: Disparities in access to health care and other factors that hinder positive outcomes for breast cancer. Social inequities contribute to high breast cancer mortality in AA women (Williams, Mohammed & Shields, 2016). Social inequities increase the risk factors and determine health problems that exist within the African American population.

Assumptions, Limitations, Scope, and Delimitations

Assumptions

One assumption in this study was that negative health-seeking behavior toward early-stage breast cancer detection increases breast cancer mortality due to delays in breast cancer screening and following up with physicians after self-breast exams. Another assumption was that the HBM could be applied in the study of behavior toward adherence to breast cancer screening in AA women 40 years and older. Several studies revealed that the HBM was instrumental in assessing behavior toward health care access (Bishop et al., 2017; Cao et al., 2014; Huang et al., 2016; Jensen et al., 2015). The HBM aligns with the belief that negative health-seeking behavior toward early-stage breast cancer detection is related to the high breast cancer mortality in AA women.

The assumptions were necessary for the context of the study to highlight the factors that were detrimental to breast cancer mortality in AA women. The variables were chosen because they were factors related to whether or not AA women had mammogram screenings within the past 2 years. Many researchers have successfully used the HBM to study human behavior toward access to health care. According Huang et al. (2016), the HBM has been the conceptual framework for many studies, to understand human behavior toward disease prevention and facilitate the improvement of negative health-seeking behavior

Limitations

One limitation of this study is the use of secondary data. Secondary data prevents primary analysis since the data was already collected and analyzed by other researchers. Use of secondary data could put researchers at a disadvantage, as the data was collected for other purposes and prevents access to information that is more specific to the study (Johnston, 2014). Using secondary data in this study prevented participation in the primary data collection process, so I was unable to validate the data collection process.

Scope and Delimitations

To study the effect of negative health-seeking behavior in detecting breast cancer at an early stage in AA women 40 years and older, it was necessary to look at the screening rates for mammogram within the past 2 years. The study variables: lack of a personal doctor, lack of health insurance and lack of doctor visits within the past 12 months is related to the screening rates for mammogram screening within the past 2

years. The variables were instrumental in assessing negative health-seeking behavior toward early-stage breast cancer detection in AA women 40 years and older.

It was important to study the effect of negative health-seeking behavior toward early-stage breast cancer detection in AA women because of the gap in the literature. The study can be generalized to any African American population within the United States that has high female breast cancer mortality but lower incident rates influenced by demographic and socioeconomic disparities. Studies have revealed that breast cancer mortality rates among AA women remains high while in other cultures, breast cancer rates have decreased over the years and continue to decrease. Therefore, it was of great importance to focus this study on the research problem that was identified.

AA women were the primary focus of the study. Although the main focus of the study was AA women because they have the highest breast cancer mortality rate, it was necessary to make comparisons and inferences to Caucasian women who have the highest incidence of breast cancer as well as women of other races. Highlighting behavior toward breast cancer screening was important in explaining negative health-seeking behavior toward early-stage breast cancer detection in AA women 40 years and older.

The behavioral model of health services use (BM) was not used in this study but is a popular theory used to explain the utilization of health care. According to Babitsch, Gohl & von Lengerke, (2012) and Kim and Lee (2016) the BM focuses more on the factors that influence the utilization of health care services instead of the behaviors that prevent health care access. The BM posits that the utilization of health care is determined by enabling, predisposing, and need factors (Babitsch et al., 2012; Manski et al., 2013).

Significance of the Study

This research study will fill a gap in literature. Not many studies have focused specifically on negative health-seeking behavior operationalized by lack of a personal doctor, lack of health insurance and lack of doctor visits within the past 12 months toward early breast cancer detection operationalized by lack of mammogram screening within the past 2 years in AA women 40 years and older. Using the HBM makes the study unique by analyzing the relationship and significance between lack of a personal doctor, lack of health insurance and lack of doctor visits with the past 12 months and mammogram screening within the past 2 years in AA women 40 years and older.

The outcome of this study will inform areas of healthcare on negative health-seeking behavior toward early breast cancer detection in AA women. The outcome of the study might help healthcare leaders and policy makers identify and develop strategic and preventative measures and policies. These measures and policies are crucial in addressing negative health-seeking behavior in AA women toward early breast cancer detection and promote timely breast cancer screening to improve breast cancer outcomes and mortality.

Summary

Disparities in health-seeking behavior toward early breast cancer detection in AA women are cause for great concern in the United States. Thus, negative health-seeking behavior in AA women has resulted in the highest breast cancer mortality rate, even with the highest incidence of breast cancer occurring among Caucasian women. All in all, unlike the continuous rise in AA women, breast cancer mortality among Caucasian and

women of other cultures have declined throughout the years, and have been attributed to early-stage detection and diagnosis followed by timely and effective treatment.

Breast cancer decline has been slower in AA women because of disparities in access to health care services, early-stage detection and treatment and how tumor characteristics differ (Desantis et al., 2013). As a result, lack of a personal doctor, lack of health insurance and lack of doctor visits within the past 12 months reflects poor breast cancer outcomes in AA women. Consequently, these disparities are just some of the reasons why it is more likely that AA women will engage in behaviors that will further increase their risks for breast cancer rather than improving them.

Demographic and socioeconomic factors contribute to poverty which is a potent factor that influences disparities in health and access to health care (Zonderman et al., 2014). Thus, health disparities are reflected in lack of a personal doctor, lack of health insurance and lack of doctor visits and lack of mammogram screening. Therefore, having an understanding of the factors that influence negative health-seeking behavior toward early-stage breast cancer detection in AA women is essential to develop the necessary intervention and promotion measures that will improve breast cancer outcomes. Furthermore, the development of intervention and promotion measures could create positive social change by improving negative health-seeking behavior toward early breast cancer detection in AA women which will in turn improve breast cancer outcomes.

Conclusion

Breast cancer is a serious disease that has presented deadly consequences for women in the United States especially for AA women. Consequently, AA women are

often diagnosed with late-stage breast cancer which reduces their chances of survival and increases mortality. All in all, late stage breast cancer diagnoses are associated with demographic and SES factors that have hindered timely access to health care services.

Factors like lack of a personal doctor, lack of health insurance and the lack of doctor visits are factors that influence negative health-seeking behavior in AA women toward early-stage breast cancer detection. In any event, many AA women have limited resources available to them which affect their health care choices. Therefore, improving the understanding of AA women about the risks of not getting breast cancer screening might improve negative health-seeking behavior toward early breast cancer detection.

Changing the behaviors of AA women might reduce breast cancer mortality. Accordingly, breast cancer screening rates might be improved as well as early-stage detection which would significantly improve the survival outcomes for AA women. Thus, creating positive social change in early breast cancer detection for AA women.

This research study will fill a gap in literature on negative health-seeking behavior toward early-stage breast cancer detection in AA women 40 years and older. The outcome of this study will inform various areas of healthcare. Healthcare leaders and policy makers might be able to identify and develop strategic and preventative measures and policies in healthcare. These measures and policies are critical in addressing and improving negative health-seeking behavior in AA women toward early-stage breast cancer detection. These measures can promote the importance of timely breast cancer screening to ensure successful breast cancer outcomes and reduce the high mortality rate.

Section 2 of this study includes the research design and rationale, the data collection process, and the methodology that will be instrumental in testing the variables that relate to negative health-seeking behavior toward early-stage breast cancer detection.

Section 2: Research Design and Data Collection

Introduction

The purpose of this study was to research negative health-seeking behavior toward early-stage breast cancer detection in AA women 40 years and older. A quantitative research method was used to explore the relationship between the operational variables: lack of a personal doctor, lack of health insurance, lack of doctor visits within the past 12 months, and mammogram screening within the past 2 years. Secondary data from the BRFSS 2016 survey were analyzed to identify the relationship between the variables. This section includes the research design and rationale, methodology, information on the secondary data and sources of information, statistical analysis, and threats to validity.

Research Design and Rationale

The nature of this study was quantitative. Quantitative research allows for comparison and measurement of data to identify what causes certain behaviors (McCusker & Gunaydin, 2014). The dependent variable, lack of mammogram screening within the past 2 years, and the independent variables, lack of a personal doctor, lack of health insurance, and lack of doctor visits within the past 12 months, were analyzed. These variables were analyzed for relationships and significance between them.

Age was used a confounding variable because mammogram screening guidelines are based on age categories. The quantitative research method was more appropriate to answer the research questions because a large sample size was analyzed to identify the

relationship and significance between the variables. Furthermore, because secondary data were used, the quantitative research method was the most appropriate.

The study design was cross-sectional. Wald chi-square test using multiple regression analysis was conducted, which was consistent with the aim of understanding negative health-seeking behavior toward early-stage breast cancer detection in AA women. Using cross-sectional design allowed for the significance between the variables to be calculated (Setia, 2016). As a result, the use of Wald chi-square was important to establish whether there was a statistically significant relationship between the variables.

Wald chi-square using multiple regression analysis has helped researchers explore the contribution of predictor variables and the significance of explanatory variables in research (Park, 2013). The dataset was analyzed to understand the interconnection between the variables that influence negative health-seeking behavior toward early breast cancer detection. The use of regression analysis was essential in producing statistically significant data so that the findings could be generalized to the rest of the population of the study's focus.

In this quantitative study, the number of AA women who may be affected by breast cancer and where they are located could be identified, but the priority of their needs could not. Knowing the priority of their needs would be important in developing more solid intervention and prevention measures. It is important to know that a problem exists and how people are affected by it, along with the number of people affected and where they are located, in order to develop effective intervention and prevention measures tailored to meet their needs.

Regression analysis is consistent with research designs needed to advance knowledge in healthcare administration because it is popular and efficient in research studies (McCusker & Gunaydin, 2015). Quantitative research allows researchers to test hypotheses by investigating and analyzing factors that influence each other to see how they correlate to answer research questions (McCusker & Gunaydin, 2015). Researchers provide data analysis that can be used to make inferences about populations (Hoare & Hoe, 2014). Quantitative research provides data that can increase knowledge, improve quality, and advance policies in the healthcare administration discipline.

Methodology

The target population for this study was AA women from all states age 40 years and older who responded to questions on the BRFSS 2016 survey regarding personal doctors, health insurance, doctor visits within the past 12 months, and mammogram screening within the 2 years preceding 2016. The target population size for this study was $n = 17{,}807$. The main focus of the study was on AA women, although comparisons and inferences were made in relation to Caucasian women as well as women of other races and ethnicities.

The secondary data set that was used for this study consisted of data on the number and percentage of U.S. adult women aged ≥ 40 years who reported on mammogram use within the past 2 years, by demographic characteristics, as gathered by the 2016 BRFSS, which was published by the CDC (2017). The BRFSS is a telephone health survey system conducted by the CDC. The BRFSS telephone survey is the largest

population health survey in the world and is viewed as the gold standard of behavioral surveillance (Miller et al., 2012).

The BRFSS is used to conduct surveys in all 53 U.S. states and territories to gather information on chronic diseases, health behaviors, and preventive health practices (Bibb et al., 2014). The survey includes demographic and SES modules with questions regarding age, race, personal doctors, health insurance coverage, and doctor visits within the past 12 months (Bibb et al., 2014). Every 2 years, the CDC includes a women's health module with mammogram screening questions in the survey (Miller et al., 2012). Women age 40 years and older were asked two mammogram questions: "Have you ever had a mammogram?" and "How long has it been since you had your last mammogram?"

Questionnaires consisting of a core component as well as optional modules were used in the BRFSS survey. The questions were taken from national surveys that were well established, such as the National Health Interview Survey (NHIS) and the National Health and Nutrition Examination Survey (NHANES). These questions were advantageous for the BRFSS because they had been pretested so that states could compare their data with other surveys. If new questions are proposed by states, federal agencies, or other entities, the BRFSS conducts cognitive and field testing before they are used as part of the questionnaire.

Adults from private households and college housing were selected for the survey, using both disproportionate stratified and simple random sampling to select their telephone numbers randomly to develop the study sample (CDC, 2015). Interviews were conducted each calendar month, and participants received a total of seven telephone calls

during daytime and evening hours (CDC, 2015). Landline and cellular telephones were used in the BRFSS survey to conduct interviews among adults 18 years and older (CDC, 2015).

Walden University provided a link to the secondary dataset. The link opened directly to the CDC website, where the BRFSS survey data are published for public use. The data are stored in an SAS file that is compatible with SPSS. Although approval was not necessary from the Institutional Review Board (IRB) because the CDC made the data publicly available for use, an application was still submitted to the IRB for a waiver.

Statistical Analysis and Management

The data collected were statistically analyzed using IBM Statistical Product and Service Solutions 24 (SPSS). SPSS is a popular tool for analyzing, interpreting, and understanding research data (Taylor Quan, & Joseph, 2015). According to Taylor et al. (2015) and El-Ansari (2016), SPSS is used in quantitative research to conduct descriptive statistics and Wald chi-square test using regression analysis to determine significant relationships between variables and to validate research studies.

The dataset was accessed as an SAS data file from the CDC website and uploaded into SPSS because the SAS file was compatible with SPSS. The data were filtered by age, race, health care access, and breast cancer screening for women age 40 years and older to obtain the information needed for the study. All males and women under 40 years old were excluded from the data because the focus of the study was women 40 years and older.

The purpose of statistically analyzing the variables was to answer the research questions by testing the hypotheses associated with them.

RQ1: Is there a relationship between negative health-seeking behavior, operationalized by lack of a personal doctor, and early-stage breast cancer detection, operationalized by lack of mammogram screening within the past 2 years, in AA women age 40 years and older?

Ho1: There is no relationship between lack of a personal doctor and lack of mammogram screening within the past 2 years in AA women age 40 years and older.

Ha1: There is a relationship between lack of a personal doctor and lack of mammogram screening within the past 2 years in AA women age 40 years and older.

RQ2: Is there a relationship between negative health-seeking behavior, operationalized by lack of health insurance, and early-stage breast cancer detection, operationalized by lack of mammogram screening within the past 2 years, in AA women age 40 years and older?

Ho2: There is no relationship between lack of health insurance and lack of mammogram screening within the past 2 years in AA women age 40 years and older.

Ha2: There is a relationship between lack of health insurance and lack of mammogram screening within the past 2 years in AA women age 40 years and older.

RQ3: Is there a relationship between negative health-seeking behavior, operationalized by lack of doctor visits within the past 12 months, and early-stage breast cancer detection, operationalized by lack of mammogram screening within the past 2 years, in AA women age 40 years and older?

Ho3: There is no relationship between lack of doctor visits within the past 12 months and lack of mammogram screening within the past 2 years in AA women age 40 years and older.

Ha3: There is a relationship between lack of doctor visits within the past 12 months and lack of mammogram screening within the past 2 years in AA women age 40 years and older.

The statistical analyses were centered on the dependent variable, lack of mammogram screening within the past 2 years, and the independent variables, lack of a personal doctor, lack of health insurance, and lack of doctor visits within the past 12 months. Descriptive statistics and multiple logistic regression were used to find numbers and percentages, and significant relationships between the variables. Use of descriptive statistics and multiple logistic regression was essential in providing meaningful data that could be interpreted on the variables (Hoare & Hoe, 2012). The statistical analyses provided data that could be generalized to the entire study population.

Negative health-seeking behavior in AA women is triggered by disparities that prevent them from seeking care and treatment (Patil et al., 2016). Disparities in health care access prevent AA women from getting regular breast cancer screening (Carney et

al., 2012; Herndon, Kornblith, Holland, & Paskett, 2013; Zonderman et al., 2014). The variables were tested for statistical significance. Statistically significant variables allow for conclusions to be drawn on whether negative health-seeking behavior prevents early-stage breast cancer detection.

The sociodemographic characteristics of the study sample were analyzed in SPSS to test the hypotheses. The variables were descriptively explored to find the confidence intervals for all of the variables. Cross-tabulation was conducted to find numbers and percentages on the variables, and Wald chi-square using multiple regression analysis was used to find the relationship between the variables: lack of a personal doctor, lack of health insurance, lack of doctor visits within the past 12 months, and lack of mammogram screening within the past 2 years.

The results of the statistical analyses were interpreted based on the measures of association, which was an indicator of the strength of the relationship between the variables (Kulkarni, 2016). The percentages, confidence intervals, and significance determined the measures of association. Wald chi-square was used to interpret the relationship between the variables (Gudicha, Schmittmann, & Vermunt, 2014; Yang et al., 2014). Confidence intervals were at 95% and *p*-values at < .05, which showed the statistical significance. Statistical significance at $p < .05$ means that there is a significant relationship between the variables. The statistical significance between the variables was interpreted to highlight positive relationship between the variables.

Credibility and Reliability

Credibility and reliability are essential to the validity of all research studies. Credibility involves ensuring that the information used is trustworthy, and reliability involves replicating exact processes and results (Leung, 2015). The data used in a research study should come from sources that are ethical and reliable (Leung, 2015). The CDC BRFSS data that were used came from the 2016 survey. This ensured the credibility and reliability of the study.

Documentation regarding the dataset was clear and included the codebook names for the variables (Schwartz et al., 2013). Additionally, the names and complete text for the variables, response options, and how all of the data were coded were included in the study. The values that were relevant to the independent variable and the dependent variables were well documented, and missing data were reported to reduce any bias.

Threats to Validity

Validity was important to solidify the accuracy of the study. Both internal and external threats to validity were specific to this study and the dataset that was used. Internal validity specific to this study involved the design and the statistical analysis. External validity specific to this study included the use of secondary data and questions regarding the accuracy and completeness of the data and whether or not the data had been altered.

The use of secondary data could raise questions regarding the validity of the data and whether the data represent the variables being measured. According to Cheng and Phillips (2014), the original source of secondary data should be evaluated for its

appropriateness. As such, information on the purpose of the data, who collected the data, how data were collected, and the timeframe and consistency of the data collected were evaluated to ensure validity.

To address these threats, peer-reviewed, scholarly research studies that used the study design, statistical analysis, and dataset were analyzed to ensure rigor. The data that were used had been collected by the states in collaboration with the CDC, an accredited government agency that cleaned and compiled the data. The objective of the CDC was to provide quality data on access to health care and preventive health services in relation to the leading causes of death and disability in the United States. This dataset provided variables that could be statistically analyzed so that the findings could be generalized to the larger population.

Ethical Procedures

In quantitative research, ethical concerns may arise about the trustworthiness of the data, as well as the results and conclusions made about the data (Panter & Sterba, 2012). Therefore, the data do not contain information that could identify the people who participated in the development of the data. I ensured that the data in this study were adequate and relevant. The data were assessed specifically for accuracy, collection methods, collection timeframe, content, and purpose.

Further analysis of the data collected was conducted for appropriateness. The data were reported clearly and honestly, and all information that was instrumental in interpreting the data was included. Only conclusions supported by the data were reported. The findings of the study were thoroughly reported, and statistical significance was

clearly stated. I maintained ethical standards, avoided fabrication of data, and informed knowledge, which was the primary goal for this research study.

All variables in the BRFSS interviews have coded categories labeled refused and are assigned values of 9, 99, or 999. The values also represent responses that are missing. Missing responses were often because an interview ended prior to a question so the interviewer coded the remaining answers as refused. To combine certain responses into one single code, interviewers combined results of respondents who did not receive a particular question and results from respondents who refused or gave an unclear answer.

There could be a conflict of interest as I am an African American woman conducting a research study on negative health-seeking behavior in African American women. The data collection, analysis, and interpretations were conducted ethically and without bias. The only intent for this study is to fulfill my thesis requirement and add literature that could help to develop strategic planning and intervention measures to continue to improve breast cancer health outcomes among African American women.

Summary

The target population for this study is AA women age 40 and older, although comparisons and inferences were made to Caucasian and women of other races. The nature of this study is quantitative which allowed for comparison and measurement of data to identify what causes certain behaviors and to generalize the findings to the rest of the population. A cross-sectional design consistent with understanding negative health-seeking behavior toward early-stage breast cancer detection in AA women was used.

Secondary data were analyzed to identify the relationship between the variables that influence negative health-seeking behavior toward early-stage breast cancer detection.

Adults from private households and college housing were selected for the BRFSS survey using both disproportionate stratified and simple random sample to select their telephone numbers randomly to develop the study sample (CDC, 2015). Landlines and cellular telephones were used in the survey to conduct interviews among adults 18 years and older (CDC, 2015). Interviews were conducted each calendar month, and participants received a total of seven telephone calls during daytime and evening hours (CDC, 2015).

The statistical significance of the association between the variables was interpreted to determine the relationship. Validity, credibility, reliability, ethical considerations and possible bias were presented in the results and findings of the study which validates the study. Walden University provided the link to the secondary data used and the data was made available to the public by the CDC. Although the data was publicly available by the CDC, an application was still submitted to the IRB for a waiver. The BRFSS dataset that was used was approved by my committee chair, committee member and program director. Presented in section 3 of this study is the results and findings from the SPSS statistical analyses of the variables in dataset.

Section 3: Presentation of Results and Findings

Introduction

The purpose of this study was to research negative health-seeking behavior toward early-stage breast cancer detection in AA women 40 and older. The focus was on AA women, although inferences were made regarding Caucasian women. The quantitative research method was used so that the data could be statistically analyzed to identify the relationship and significance between the variables. Descriptive statistics provided data on the characteristics of the study that answered the research questions.

The research questions and the hypotheses that were tested were as follows:

RQ1: Is there a relationship between negative health-seeking behavior, operationalized by lack of a personal doctor, and early-stage breast cancer detection, operationalized by lack of mammogram screening within the past 2 years, in AA women age 40 years and older?

Ho1: There is no relationship between not having a personal doctor and lack of mammogram screening within the past 2 years in AA women age 40 years and older.

Ha1: There is a relationship between not having a personal doctor and lack of mammogram screening within the past 2 years in AA women age 40 years and older.

RQ2: Is there a relationship between negative health-seeking behavior, operationalized by not having health insurance, and early-stage breast

cancer detection, operationalized by lack of mammogram screening within the past 2 years, in AA women age 40 years and older?

Ho2: There is no relationship between not having health insurance and lack of mammogram screening within the past 2 years in AA women age 40 years and older.

Ha2: There is a relationship between not having health insurance and lack of mammogram screening within the past 2 years in AA women age 40 years and older.

RQ3: Is there a relationship between negative health-seeking behavior, operationalized by lack of doctor visits within the past 12 months, and early-stage breast cancer detection, operationalized by lack of mammogram screening within the past 2 years, in AA women age 40 years and older?

*Ho*3: There is no relationship between lack of doctor visits within the past 12 months and lack of mammogram screening within the past 2 years in AA women age 40 years and older.

Ha3: There is a relationship between lack of doctor visits within the past 12 months and mammogram screening within the past 2 years in AA women age 40 years and older.

To answer the research questions, descriptive statistics were used to find the frequency of mammogram screening among AA women and across all races. Explore was used to find percentages and confidence intervals for the variables (Hussain, 2012).

Cross-tabulation was used to identify the number and percentage of AA women who had or did not have mammogram screening within the past 2 years by age, personal doctor, health insurance coverage, and doctor visits within the past 12 months.

Binary logistic regression was conducted to find the Wald chi-square statistic. Wald chi-square test was necessary to highlight the relationship and significance between the variables (Gudicha et al., 2014). Statistically analyzing the variables validated the study so that the findings could be generalized to the rest of the population. This section of the study addresses the collection of secondary data, demographic statistics of the study sample, statistical analyses, and results and findings.

Collection of Secondary Data

The data used in this study were collected from the 2016 BRFSS telephone survey. The CDC in collaboration with all 53 U.S. states and territories conducts the BRFSS telephone survey annually (CDC, 2017). The main objective of the BRFSS survey is to collect data on preventive health practices and risk behaviors that are connected to chronic and preventable infectious diseases and injuries that affect the adult population.

Landline and cellular telephones were used to conduct interviews among adults 18 years and older (CDC, 2017). A computer-assisted telephone interview (CATI) system was used to conduct interviews based on BRFSS guidelines. For landline surveys, participants were selected randomly from households, and for cellular telephone surveys, participants were selected from college housing or private residencies (CDC, 2017).

Interviews were conducted each calendar month. Participants received phone calls that lasted about 18 minutes during day and evening hours (CDC, 2017). Interviews were conducted by health departments in each state and private contractors (CDC, 2017). An iterative proportional raking (IPR) system that allowed for the incorporation of cellular telephone data and the introduction of additional demographic characteristics was used to weight and adjust the data so that any groups that were underrepresented in the survey sample were accurately represented in the final data set (CDC, 2017). The IPR categories included age groups by gender as well as by race and ethnicity, educational attainment, income status, marital status, race and ethnicity, regions within states, sex, source of telephone, and home-renter and homeowner status (Okoro et al., 2017).

The BRFSS adjusted the data to the design weights to account for overlapping samples, in that some participants had both landline and cellular telephones (Okoro et al., 2017). After the data were collected, they were transmitted to the CDC, where they were edited, processed, weighted, and analyzed (CDC, 2017). The CDC reported that the response rate from the survey was favorable, at 47.7% for landline and 46.4% for cellular telephones.

In the BRFSS survey, each telephone number randomly selected for dialing from the list of all telephone numbers is a sample record (CDC, 2017). Each state must be able to justify its sample records as a probability sample of all households with telephones to meet BRFSS standards (CDC, 2017). The BRFSS separates telephone numbers into high-density and medium-density groups, which are separately sampled (CDC, 2017).

Every set of 100 landline telephone numbers in households that have the same area code, prefix, first two digits of the suffix, and all possible combinations of the last two digits determines whether a number belongs in a high-density or a medium-density group (CDC, 2017). After the groups are determined, the numbers are sampled to develop the probability sample of all households that have telephones (CDC, 2017). According to the CDC, all states and territories met the sampling criterion for 2016.

A disproportionate stratified sample (DSS) design was used in all states to select landline telephone numbers randomly to develop the study sample. A simple random-sample design was used to develop the study sample for Guam and Puerto Rico (CDC, 2015). Specific protocols were put in place for the sampling frames for cellular phones, which were made available commercially (CDC, 2017). The BRFSS divides the frame of cellular telephone numbers into *n* intervals of size K telephone numbers. From each interval, the BRFSS randomly draws one 10-digit telephone number (CDC, 2017).

Demographic Characteristics of the Survey Sample

A total o*f n* = 17,807 AA women age 40 years and older were included in the women's health module in the 2016 BRFSS survey. Based on the ACS breast cancer screening guidelines (Appendix A), only AA women 40 years and older were asked whether they had ever had a mammogram and how long it had been since they had their last mammogram. Of the total women, only *n* = 17,550 answered *yes* or *no* concerning whether or not they had a mammogram within the past 2 years. Only 1.5% of AA women did not respond concerning mammogram screening and were excluded from the study. Table 1 displays the characteristics of the study variables for AA women ≥ 40 years old.

Table 1

Characteristics of the Study Sample

Characteristics	No.	%	(95% CI)
Total	17,087	45.0	(0.19-0.21)
Age (yrs)			
40-44	1,305	7.3	(0.15-0.21)
45-49	1,878	10.5	(0.17-0.21)
50-54	2,349	13.2	(0.18-0.22)
55-59	2,854	16.0	(0.17-0.21)
60-64	2,485	14.0	(0.12-0.16)
65 and older	6,544	36.7	(0.17-0.20)
Personal doctor			
Yes	16,366	84.0	(0.16-0.17)
No	1,387	7.8	(0.32-0.38)
Health insurance coverage			
Yes	16,554	93.0	(0.16-0.18)
No	1,190	6.7	(0.29-0.36)
Number of doctor visits within the past 12 months			
1 or more	3,468	94.9	(0.14-0.17)
None	168	4.6	(0.34-0.60)
Mammogram within the past year/within 2 years			
Yes	14,768	76.7	(0.08-0.09)
No	2,782	22.0	(0.13-0.17)

The characteristics of the study sample pertinent to this study were age, personal doctor, health insurance, doctor visits within the past 12 months, and mammogram screening within the past 2 years. In the 2016 BRFSS survey, age (variable name = AGEG5YR) ranges for mammogram screening were imputed in 5-year categories from age 40 and collapsed above 80 (CDC, 2017). The age categories used for this study were recoded as 40–44 = 1; 45–49 = 2; 50–54 = 3; 55–59 = 4; 60–65 = 5; and 65 and older = 6.

To capture data for personal doctor (variable name PERSDOC2) in the 2016 BRFSS survey, the women were asked, "Do you have one person you think of as your personal doctor or health care provider?" (CDC, 2017). The answers were coded as follows: yes = 1, only one; more than one = 2; no = 3. For this study, Answers 1 and 2 were combined and re-coded as yes = 0 and no = 1. Health insurance coverage is a key factor in accessing health care services. To capture data for health insurance coverage (variable name HLTHPLN1) in the 2016 BRFSS survey, the women were asked, "Do you have any kind of health care coverage?" (CDC, 2017). The answers were coded as follows: yes = 1; no = 2. For this study, the answers were recoded as yes = 0; no = 1.

To capture data for doctor visits within the past 12 months (variable name DRVISITS) in the 2016 BRFSS survey, the women were asked, "How many times have you been to a doctor, nurse, or other health professional in the past 12 months?" (CDC, 2017). The answers were coded as follows: number of times = 1-76; none = 88 (CDC, 2017). For this study, the answers were recoded as follows: 1 or more = 0; none = 1.

Two mammogram questions were included in the 2016 BRFSS survey, variable names HADMAM and HOWLONG, respectively: "Have you ever had a mammogram?"

and “How long has it been since your last mammogram?” The answers to the question “Have you ever had a mammogram?” were in yes-and-no format (CDC, 2017). The women who answered *yes* to having a mammogram were further asked, “How long has it been since your last mammogram?” The answers were coded as follows: within the past year = 1; within the past 2 years = 2; within the past 3 years = 3; within the past 5 years = 4; and 5 years or more = 5 (CDC, 2017). For this study, women who had a mammogram within the past year and the past 2 years were combined as within the past year/within 2 years and recoded as yes = 0. The answer for women who did not have a mammogram within the past 2 years were combined and recoded as more than 2 years = 1.

Results

Mammogram Screening Frequency Among AA Women

Mammogram screening is viewed by many as the best tool to detect the signs and symptoms of breast cancer even before the disease can be fully developed. According to the ACS, a referral from a physician for mammogram screening should be an integral part of an annual doctor visit. Chowdury et al. (2016) reported that breast cancer screening recommendations from physicians have improved mammogram screening rates among women of all races and ethnicities. Table 2 displays the frequency of mammogram screening within the 2 years preceding 2016 for AA women 40 years and older.

Table 2

Frequency of Mammogram Screening

		Frequency	Valid percent
Valid	Within the year/within 2 years	14,768	82.9
	More than 2 years	2,782	15.6
	Total	17,550	98.5

Of the total AA women, *n* = 14,768 (82.9%) reported that they had a mammogram within the past 2 years, and *n* = 2,782 (15.6%) reported that they did not have a mammogram within the past 2 years. An estimated 1.5% of AA women included in the 2016 BRFSS survey, when asked when their last mammogram screening had been, reported that they did not know, reported that they were not sure, or refused to answer and were not included the sample for this study.

Although the majority of AA women reported having a mammogram within the past 2 years, the number of AA women who did not have a mammogram within the past 2 years is cause for concern. Many studies have emphasized and proven the importance of timely mammogram screenings. Studies have also shown that the decrease in breast cancer mortality over the years has been a result of early detection at stages when treatments are more effective (Yedjou et al., 2017). Mandrik et al. (2017) found that if breast cancer screening strategies included adoption and cost, mammograms can be effective among AA women.

Crosstab

Age. Table 3 displays a cross-tabulation of the numbers and percentages by age group for AA women who answered the question "How long as it been since you had your last mammogram?" Of *n* = 14,432 AA women who reported that they had a mammogram within the past 2 years, 6.1% were between 40 and 44 years old; 8.7% were between 45 and 49 years old; 10.8% were between 50 and 54 years old; 13.1% were between 55 and 59 years old; 12.1% were between 60 and 64 years old; and 30.3% were in the 65 and older age category.

Table 3

Crosstab of Age and Mammogram Screening

			Reported age in 5-year age categories						
			40-44	45-49	50-54	55-59	60-64	65 and over	Total
How long since last mammogram	Within the past year/within 2 years	Count	1,085	1,542	1,922	2,329	2,155	5,399	14,432
		% within how long since last mammogram	7.3%	10.4%	13.0%	15.8%	14.6%	36.6%	100.0%
		% within reported age in 5-year age categories	83.1%	82.1%	81.8%	81.6%	86.7%	82.5%	82.9%
		% of total	6.1%	8.7%	10.8%	13.1%	12.1%	30.3%	82.9%
	More than 2 years	Count	205	314	404	492	308	1,019	2,742
		% within how long since last mammogram	7.4%	11.3%	14.5%	17.7%	11.1%	36.6%	100.0%
		% within reported age in 5-year age categories	15.7%	16.7%	17.2%	17.2%	12.4%	12.6%	15.6%
		% of total	1.2%	1.8%	2.3%	2.8%	1.7%	5.7%	15.6%
Total		Count	1,290	1,856	2,326	2,821	2,463	6.418	17.174
		% of total	7.3%	10.5%	13.2%	16.0%	14.0%	36.7%	100.0%

Of *n* = 2,742 AA women who reported that they did not have a mammogram within the past 2years, 1.2% were between 40 and 44 years old; 1.8% were between 45 and 49 years old; 2.3% were between 50 and 54 years old; 2.8% were between 55 and 59 years old; 1.7% were between 60 and 64 years old; and 5.7% were 65 years and older.

The lowest percentage of AA women who both had (6.1%) and did not have (1.2%) a mammogram was in the 40-44 age category. The highest percentage of AA women who both had (30.3%) and did not have (5.7%) a mammogram was in the 65 and older category. Although more AA women in all the age categories reported that they had a mammogram within the past 2 years than women who did not, there should still be concern for the women who did not have a mammogram because of the mortality rate.

Age was an important confounding variable because the focus of the study was AA women 40 years and older which is based on the ACS guidelines for breast cancer screening. Minimizing delays in breast cancer screening is essential in reducing the mortality rate among AA women. Caplan (2014) found an association between early breast cancer detection and decreased breast cancer mortality so early breast detection and diagnosis is of the uttermost importance. Late breast cancer screening can lead to diagnosis at advance stages which reduces successful treatment and survival outcomes.

Personal doctor. Table 4 displays a crosstab of the numbers and percentages by personal doctor for mammogram screening within the past 2 years. *N* = 17,550 AA women responded to whether or not they had a personal doctor. An estimated 83.5% of AA women reported that they had one or more personal doctor and 16.5% reported that they did not have a personal doctor. Of *n* = 14,768 AA women who reported that they

had a mammogram within the past 2 years, 83.4% had at least one person they considered their personal doctor, and 16.6% did not have anyone they considered to be their personal doctor.

Table 4

Crosstab of Personal Doctor and Mammogram Screening

			Multiple health care professionals		
			Yes	No	Total
How long since last mammogram	Within the past year/within 2 years	Count	12,312	2,456	14,768
		% within how long since last mammogram	83.4%	16.6%	100.0%
		% within multiple health care professionals	84.1%	84.6%	84.1%
		% of total	70.2%	14.0%	84.2%
	More than 2 years	Count	2,335	447	2,782
		% within how long since last mammogram	83.9%	16.1%	100.0%
		% within multiple health care professionals	15.9%	15.4%	15.9%
		% of total	13.3%	2.5%	15.8%
Total		Count	14,647	2,903	17,550
		% of total	83.5%	16.5%	100.0%

Of n = 2,782 women who reported that they did not have a mammogram within the past 2 years, 83.9% had one or more personal doctor and 16.1% did not have anyone they considered to be their personal doctor. Majority of AA women who reported that they had at least one person they considered their personal doctor also had a mammogram

within the past 2 years. It was important to note that 14% of AA women who did not have a personal doctor reported that they had a mammogram within the past 2 years. Conversely, 16.1% of AA women who reported they did not have a personal doctor also reported that they did not have a mammogram within the past 2 years.

Although 70.2% of AA women who had a personal doctor and 14% who did not have a personal doctor had a mammogram within the past 2 years, it should be important to look at the factors that have prevented those AA women from having a personal doctor and timely mammogram screening. Wallner et al. (2016) found that from screening to early-stage detection to diagnosis to treatment and survival of the disease, personal doctors play various roles that are vital in the care of patients with breast cancer. Keshinro et al. (2015) found that the likelihood of early-stage breast cancer detection increases via mammogram screening when women have access to a personal doctor.

Health insurance coverage. Table 5 displays the numbers and percentages by health insurance coverage for mammogram screening within the past 2 years. Of *n* = 17,540 AA women, 93% reported that they had health insurance and 7% reported they did not have health insurance coverage. Of *n* = 16,554 AA women who reported that they had health insurance, 83.9% reported that they had a mammogram within the past 2 years; and 14.7% reported that they did not have a mammogram within the past 2 years.

Table 5

Crosstab of Health Care Coverage and Mammogram Screening

			Have any health care coverage		
			Yes	No	Total
How long since last mammogram	Within the past year/within 2 years	Count	13,883	885	14,768
		% within how long since last mammogram	94.0%	6.0%	100.0%
		% within have any health care coverage	83.9%	70.6%	84.1%
		% of total	78.0%	5.0%	83.0%
	More than 2 years	Count	2,437	335	2,772
		% within how long since last mammogram	87.9%	12.1%	100.0%
		% within have any health care coverage	14.7%	26.7%	15.8%
		% of total	14.0%	1.9%	15.9%
Total		Count	16,554	1,253	17,540
		% of total	93.0%	7.0%	100.0%

Of *n* = 1,253 AA women who reported that they did not have health insurance, 70.6% reported that they had a mammogram within the past 2 years and 26.7% reported that they did not have a mammogram within the past 2 years. Overall, 94% of AA women who reported that they had a mammogram within the past 2 years had health insurance, while only 6% did not have health insurance but had a mammogram.

What was noteworthy was that 6% of AA women who reported that they did not have health insurance reported that they had a mammogram within the past 2 years. Conversely, majority of the AA women (87.9%) who reported that they did not have a mammogram within the past 2 years reported having health insurance. This 87.9% is equivalent to 2,437 AA women who did not have a mammogram within the past 2 years although they had health insurance. The AA women who reported having health insurance but did not have a mammogram within the past 2 years was concerning.

Among AA women who had and did not have health insurance, 15.8% reported they did not have a mammogram within the past 2 years. This percentage represents a high number of AA women that could significantly impact the outcomes for early breast cancer detection, diagnosis and successful treatment. Carney et al. (2012) found that women who had health insurance coverage were more likely to have had a mammogram within the past 2 years. Akuse et al. (2016) reported that having health insurance was positively associated with mammogram screening and AA women were 2 times more likely to have had mammogram screenings when they have health insurance coverage.

Doctor visits within the past 12 months. Table 6 displays the numbers and percentages by doctor visits within the past 12 months for mammogram screening within the past 2 years. A total of n = 3,653 AA women were randomly asked how often had they visited the doctor within the past 12 months. Of the total AA women, n = 3,408 (94.9%) reported that they had one or more doctor visits within the past 12 months; and n = 162 (5.1%) reported that they did not have any doctor visits within the past 12 months.

Table 6

Crosstab of Doctor Visits and Mammogram Screening

			Doctor visits past 12 months		
			1 or more	None	Total
How long since last mammogram	Within the past year/within 2 years	Count	2,943	97	3,040
		% within how long since last mammogram	96.8%	3.2%	100.0%
		% within doctor visits past 12 months	86.3%	59.9%	83.5%
		% of total	82.4%	2.7%	85.2%
	More than 2 years	Count	465	65	530
		% within how long since last mammogram	87.7%	12.3%	100.0%
		% within doctor visits past 12 months	13.6%	40.1%	14.8%
		% of total	13.0%	1.8%	14.8%
Total		Count	3,408	162	3,570
		% of total	94.9%	5.1%	100.0%

Of the total AA women who reported that they visited the doctor within the past 12 months, 96.8% reported having a mammogram within the past 2 years and 3.2% reported they did not have a mammogram within the past 2 years. Of the total AA women who reported that they did not have any doctor visits within the past 12 months, 58.9% reported that they had a mammogram within the past 2 years and 40.1% reported they have not had a mammogram within the past 2 years.

The 40.1% of AA women who reported that they had no doctor visits within the past 12 months and no mammogram within the past 2 years is equivalent to 65 women from just one race and is only part of a sample of women who did not have mammogram within the past 2 years. Katz et al. (2018) and Wilcox et al. (2014) found that doctor visits play a pivotal role in adherence to breast cancer screening by helping women to understand how critical it is for them to follow the guidelines for mammogram screening.

Although more AA women who had a mammogram within the past 2 years had at least one or more doctor visit within the past 12 months, compared to the women who did not have a mammogram within the past 2 years, there is still cause for great concern. Pullen et al. (2014) reported that AA women are less likely to have annual doctor visits, and poor health outcomes can be attributed to the underutilization of health care services.

Regular doctor visits are crucial in identifying factors that present health risks before more serious health problems can develop. Bodai and Tuso (2015) found that when breast cancer is diagnosed at the early stages, treatments are usually more effective and successful. Doctor visits are instrumental in helping AA women lead healthier lives.

Wald Chi-Square Test Using Multiple Regression Analysis

Conducting Wald chi-square test using multiple regression analysis on the variables was important in examining the association and significance of the relationship between the variables. Binary logistic regression was conducted because the dependent variable was dichotomous and the dependent variables were categorical (Park, 2013). The results inform the understanding on the relationship between the lack of mammogram screening within the past 2 years (dependent variable) and lack of a personal doctor, lack

of health insurance and lack of doctor visits within the past 12 months (independent variables). The relationship between the variables was significant at $p < 0.05$.

Depicted in Table 7, are the results of the binary logistic regression with dependent variable lack of mammogram screening within the past 2 years regressed on the independent variables lack of a personal doctor, lack of health insurance, and lack of doctor visits within the past 12 months. Age was included in the regression model as it was an important confounding factor. Based on the output, there is a significant relationship between lack of a personal doctor, lack of health insurance, and lack of doctor visits within the past 12 months and lack of mammogram screening within the past 2 years.

Table 7

Wald Chi-Square Using Multiple Regression

							95% C.I. for Exp(B)	
	B	*SE*	Wald	*df*	Sig.	Exp(B)	Lower	Upper
Age	0.048	0.028	2.960	1	0.085	1.049	0.993	1.107
Personal doctor	0.644	0.140	21.252	1	0.000**	1.904	1.448	2.504
Health insurance coverage	0.549	0.170	10.400	1	0.001**	1.731	1.240	2.417
Doctor within the past 12 months	0.422	0.562	0.562	1	0.045**	1.524	0.506	4.589
Constant	-1.274	0.559	5.193	1	0.023**	0.280		

**$p < .05$.

Lack of a personal doctor and lack of mammogram screening. Research question: Is there a relationship between negative health-seeking behavior operationalized by lack of having a personal doctor and early-stage breast cancer detection operationalized by lack of mammogram screening within the past 2 years in AA

women age 40 years and older? Based on the regression output (table 7), the relationship between lack of a personal doctor and lack of mammogram screening within the past 2 years was statistically significant at Wald Chi-square = 21.252, $p < .05$.

The null hypothesis was that there is no relationship between lack of having a personal doctor and lack of mammogram screening within the past 2 years in AA women 40 years and older. The alternate hypothesis was that there is a relationship between lack of having a personal doctor and lack of mammogram screening within the past 2 years in AA women 40 years and older. Based on the output, lack of a personal doctor is associated with lack of mammogram screening within the past 2 years in AA women 40 years and older. Therefore, the null hypothesis was rejected and the alternate hypothesis was accepted since the level of significance is $p < .05$.

Previous studies have shown significant relationship between having a personal doctor and timely mammogram screening. In a study on preventive health practices, Frank et al. (2013) found an association between having a primary care doctor (PCP) and mammogram screening, reporting that patients who had a PCP usually followed mammogram screening guidelines and were more likely to get screened. Keshinro et al. (2015) reported that among 173 women with breast cancer, 72% had a personal doctor at the time of diagnosis and 28% did not. Women who had a personal doctor presented with breast cancer at a lower stages compared to the women who did not (Keshinro et al., 2015). Therefore, having a personal doctor correlates with timely mammogram screening and is instrumental in decreasing the likelihood of late-stage breast cancer detection.

Since there was a significant relationship between the lack of having a personal doctor and the lack of mammogram screening, three important assumptions could be made. (1) AA women who had one or more personal doctor were more likely to have had a mammogram within the past 2 years (2) AA women who did not have at least one personal doctor were less likely to have had a mammogram within the past 2 years. Therefore, negative health-seeking behavior was a significant factor in AA women's decision not to get a mammogram. (3) Negative health-seeking behavior contributes to negative breast cancer outcomes for AA women including detection and early diagnosis.

Health insurance coverage and mammogram screening. Research question: Is there a relationship between negative health-seeking behavior operationalized by lack of health insurance coverage and early-stage breast cancer detection operationalized by lack of mammogram screening within the past 2 years in AA women 40 years and older? Based on the regression output in table 7, the relationship between lack of health insurance and lack of mammogram screening within the past 2 years was statistically significant at Wald Chi-square = 10.400, $p < .05$.

The null hypothesis was that there is no relationship between lack of health insurance coverage and lack of mammogram screening within the past 2 years in AA women 40 years and older. The alternate hypothesis was that there is a relationship between not having health insurance coverage and lack of mammogram screening within the past 2 years in AA women 40 years and older. Based on the output, lack of health insurance is associated with lack of mammogram screening within the past 2 years in AA

women 40 years and older. Therefore, the null hypothesis was rejected and the alternate hypothesis was accepted since the level of significance was $p < .05$.

Previous studies have shown significant relationship between health insurance and mammogram screening. Carney et al. (2012) found that having health insurance positively correlates with mammogram screening as patients with health insurance were more likely to be up-to-date on breast cancer screening. Chowdhury et al. (2016) reported that the lack health insurance is a statistically significant predictor for low mammogram screening rates among AA women in Alabama; and uninsured AA women utilize mammogram screening less than other women (Chowdhury et al., 2016). According to Martinez-Donate et al. (2013) women of low socioeconomic status who lack health insurance are usually less likely to access regular breast cancer screening services.

Since there was a significant relationship between lack of health insurance and lack of mammogram screening within the past 2 years in AA women age 40 years and older, the assumptions that could be made were: (1) AA women with health insurance were more likely to have had mammogram screening within the past 2 years. (2) Even though many AA women without health insurance reported that they had a mammogram within the past 2 years, AA women without health insurance were still less likely to have had a mammogram screening within the past 2 years. (3) Health insurance coverage is a significant factor in AA women getting timely mammogram screening.

Doctor visits and mammogram screening. Research question: Is there a relationship between negative-health seeking behavior operationalized by lack of doctor visits within the past 12 months and early-stage breast cancer detection operationalized

by lack of mammogram screening within the past 2 years in AA women age 40 years and older? Based on the regression output in table 7, the relationship between lack of doctor visits within the past 12 months and lack of mammogram screening within the past 2 years was significant at Wald Chi-square = 0.562, $p < .05$.

The null hypothesis was that there is no relationship between lack of doctor visits within the past 12 months and lack of mammogram screening within the past 2 years in AA women age 40 years and older. The alternate hypothesis was that there is a relationship between lack of doctor visits within the past 12 months and lack of mammogram screening within the past 2 years in AA women age 40 years and older. Based on the output, lack of doctor visits within the past 12 months is associated with lack of mammogram screening within the past 2 years in AA women age 40 years and older. Therefore, the null hypothesis was rejected and the alternate was accepted since the level of significance was $p < .05$.

Previous studies have shown significant relationship between doctor visits and mammogram screening. Chowdhury et al. (2016) reported that regular doctor visit is positively correlated with the mammogram screening rates for AA women who visited the doctor at least annually. In a study to highlight the factors that influence mammogram screening among low-income AA women in Tennessee, Patel et al. (2014) found that the lack of doctor visits correlated with women not being up-to-date on their mammograms.

Based on the significant relationship between lack of doctor visits and lack of mammogram screening in AA women age 40 years and older, the assumptions that could be made were: (1) AA women who had one or more doctor visits within the past 12

months were more likely to have had a mammogram within the past 2 years. (2) AA women who had not have at least one doctor visits within the past 12 months were less likely to have had a mammogram the past 2 years. (3) One or more doctor visits within the past 12 months played a significant role in AA women's decision toward getting mammogram screening. Based on the statistical significance between the variables, the overall conclusion that could be made was that negative health-seeking behavior prevents early breast cancer detection in AA women age 40 years old and older.

Summary

Section 4 presented the data collection of the secondary dataset and the results for the statistical analyses conducted to answer the following research questions: Is there a relationship between negative health-seeking behavior operationalized by not having a personal doctor and early-stage breast cancer detection operationalized by lack of mammogram screening within the past 2 years in AA women age 40 years and older? RQ2: Is there a relationship between negative health-seeking behavior operationalized by lack of health insurance and early-stage breast cancer detection operationalized by the lack of mammogram screening within the past 2 years in AA women age 40 years and older? RQ3: Is there a relationship between negative health-seeking behavior operationalized by lack of doctor visits within the past 12 months and early-stage breast cancer detection operationalized by the lack of mammogram screening within the past 2 years in AA women age 40 years and older?

The relationship between lack of a personal doctor and lack of mammogram screening within the past 2 years in AA women age 40 years and older was significant *p*

< .05. As such, the null hypothesis was rejected and the alternative hypothesis was accepted. The relationship between lack of health insurance and lack of mammogram screening within the past 2 years in AA women age 40 years and older was significant at $p < .05$, so the null hypothesis was rejected and the alternative was accepted.

The relationship between lack of doctor visit within the past 12 months and lack of mammogram screening within the past 2 years in AA women age 40 years and older was significant, so the null hypothesis was rejected and the alternative hypothesis was accepted. All in all, the conclusion that could be made was that negative health-seeking behavior prevents early breast cancer detection in AA women age 40 years old and older.

Section 4 includes the application of the study to professional practice and the implications for positive social change. The interpretation of the findings will be explained, limitations of the study and recommendations for further research that are grounded in the strengths and limitations of this study and the literature will be detailed.

Section 4: Application to Professional Practice and Implications for Social Change

Introduction

The focus of this study was the relationship between negative health-seeking behavior, operationalized by not having a personal doctor, lack of health insurance, and lack of doctor visits within the past 12 months, and early-stage breast cancer detection, operationalized by lack of mammogram screening within the past 2 years, in AA women age 40 years and older. The quantitative nature of the study allowed for statistical analysis of the data (McCusker & Gunaydin, 2014) to identify if there was a relationship between the variables. This study adds to the knowledge base on negative health-seeking behavior in AA women toward early breast cancer detection.

Breast cancer mortality is the highest among AA women and is related to non adherence to mammogram screening (Khaliq et al., 2015). The ACS breast cancer screening guidelines (Appendix A) were used to assess women who were up to date on their mammograms. According to the ACS guidelines, women 40-54 years old should have a mammogram annually, and women 55 and older should have a mammogram every 2 years (Oeffinger et al., 2015). For this study, women who had a mammogram within the past year and within the past 2 years were deemed up to date on their mammograms.

Summary of Key Findings

To answer the research questions, it was necessary to conduct frequency, explore, cross-tabulation, and regression analyses on all the variables. The crosstab between age and mammogram screening within the past 2 years revealed that more AA women in the

65-and-older age category (36.6%) had a mammogram within the past 2 years than any other age group. The lowest number of mammogram screenings within the past 2 years (7.3%) occurred in the 40-44 age group, which was the youngest age category. The highest number of AA women who did not have a mammogram within the past 2 years was in the 65-and-older age category, and the lowest number of AA women who did not have a mammogram within the past 2 years was in the 40-44 age category. The 65-and-older age category had the highest total number of AA women.

The results of the regression analysis between lack of personal doctor and lack of mammogram screening within the past 2 years revealed a significant relationship. There was a significant relationship between lack of health insurance and lack of mammogram screening within the past 2 years. The relationship between lack of doctor visits within the past 12 months and lack of mammogram screening within the past 2 years was also statistically significant. Previous studies have found statistical significance between the variables and were identified to solidify the result of the findings in the regression analysis.

Interpretation of the Findings

The results of the study both confirm and extend knowledge in the discipline indicating that lack of a personal doctor, lack of health insurance, and lack of doctor visits influence negative health-seeking behavior in AA women toward early breast cancer detection. Frank et al. (2013) and Keshinro et al. (2015) reported that low mammogram utilization among AA women is correlated with not having a personal doctor. Martinez-Donate et al. (2016) and Melvin, Jefferson, Rice, Cartmell, & Halbert,

(2016) found that lack of health insurance contributed to AA women being diagnosed with late-stage breast cancer. Chowdhury et al. (2016) and Patel et al. (2014) reported that having at least one doctor visit annually is related to having mammogram screening.

Personal Doctor and Mammogram Screening Within the Past 2 Years

The crosstab analysis between personal doctor and mammogram screening within the past 2 years revealed that of *n* = 17,550 AA women, 82.9% had a mammogram within the past 2 years preceding 2016, and 15.6% did not have a mammogram within the past 2 years. Of the total women, 83.5% reported that they had at least one personal doctor, and 16.5% reported that they did not have a personal doctor. Of the total AA women, *n* = 12,312 had at least one personal doctor and also had a mammogram within the past 2 years, and *n* = 2,335 had at least one personal doctor and but did not have a mammogram within the past 2 years. Of *n* = 2,903 AA women who did not have a personal doctor, 83.3% reported that they had a mammogram within the past 2 years while 15.3% did not.

Of the total AA women, *n* = 2,782 reported that they did not have a mammogram within the past 2 years, although 83.9% reported that they had at least one personal doctor. Only15.3% of the women did not have a personal doctor, did not have a mammogram within the past 2 years, and did not have anyone they considered their personal doctor. Overall, some AA women had one or more personal doctors but did not have a mammogram within the past 2 years, and some did not have a personal doctor and also did not have a mammogram within the past 2 years.

Based on the regression analysis, there was a significant relationship between lack of a personal doctor and lack of mammogram screening within the past 2 years in AA

women age 40 years and older (Table 7). The relationship was significant at $p < .05$. Therefore, the hypothesis was rejected and the alternate hypothesis was accepted. As such, having a personal doctor is critical to mammogram screening among AA women.

Researchers have linked not having a personal doctor to non adherence to mammogram screening in AA women (Frank et al., 2013; Keshinro et al., 2015). Lack of a personal doctor contributes to low breast cancer screening, which lowers positive breast cancer outcomes (Patel et al., 2014). Although negative health-seeking behavior toward mammogram screening in AA women is influenced by many factors, having a personal doctor might be the key to improving the knowledge of AA women on the importance of adherence to mammogram screening for early breast cancer detection.

Health Insurance Coverage and Mammogram Screening Within the Past 2 Years

The crosstab analysis between health insurance coverage and mammogram screening within the past 2 years revealed that of $n = 17,540$ AA women, 82.9% had a mammogram within the past 2 years, and 15.6% did not have a mammogram within the past 2 years. Of the total women, 93% had health insurance coverage, and 7% did not have health insurance coverage. Of $n = 16,554$ AA women who reported that they had health insurance, 83.9% reported that they had a mammogram within the past 2 years, and 14.7% reported that they did not have a mammogram within the past 2 years.

Of $n = 2,772$ AA women who reported that they did not have a mammogram within the past 2 years, 87.9% reported that they had health insurance coverage, and 12.1% did not have health insurance coverage. What was noteworthy was that 87.9% was equivalent to 2,437 AA women in a sample who reported that they did not have a

mammogram within the past 2 years even though they had health insurance coverage. These numbers could significantly alter the outcome of breast cancer diagnosis and mortality rates. According to Miller et al. (2012), if adherence to mammography screening were increased by just 5%, breast cancer mortality would decrease by 560 per year. Therefore, mammography screening is necessary in the fight against breast cancer.

Of n = 17,540 AA women, 15.6% reported that they did not have a mammogram within the past 2 years. With the highest breast cancer mortality rate being among AA women (Desantis, 2016), the 15.6% of AA women who did not have a mammogram is great cause for concern. The relationship between lack of health insurance coverage and lack of mammogram screening within the past 2 years was significant at $p < .05$. As such, the null hypothesis was rejected and the alternate hypothesis accepted. Health insurance coverage is essential for timely mammogram screening among AA women.

Researchers have found that the lack of mammogram screening differs by race, and the odds for not getting screened are higher when AA women do not have health insurance (Chowdhury et al., 2016; Melvin et al., 2016). Lack of health insurance contributes to low breast cancer screening rates, which lower positive breast cancer outcomes (Arnold et al., 2017). Although negative health-seeking behavior toward mammogram screening in AA women is influenced by many factors, health insurance influences adherence to mammogram screening for early breast cancer detection.

Doctor Visits and Mammogram Screening Within the Past 2 Years

Only a sample of the women included the survey was asked if participants had visited the doctor within the past 12 months. A total of n = 3,653 AA women were asked

if they had visited the doctor within the past 12 months. The crosstab analysis between doctor visits within the past 12 months and mammogram screening within the past 2 years revealed that 83.5% of AA women had a mammogram within the past 2 years and 14.80% did not have a mammogram within the past 2 years. Of n = 3,408 AA women who reported that they had visited the doctor a number of times within the past 12 months, 86.3% reported that they had a mammogram within the past 2 years, and 13.6% reported that they did not have a mammogram within the past 2 years.

Of n = 162 AA women who reported that they had not visited the doctor within the past 12 months, 58.9% reported that they had a mammogram within the past 2 years, and 40.1% reported that they did not have a mammogram within the past 2 years. Some AA women visited the doctor more than once within the past 12 months and also had a mammogram with the past 2 years. Some AA women visited the doctor more than once within the past 12 months but did not have a mammogram within the past 2 years. Some AA women reported that they did not visit the doctor within the past 12 months and also did not have a mammogram screening within the past 2 years.

The relationship between lack of doctor visits within the past 12 months and lack of mammogram screening in AA women age 40 years and older was significant at $p <$ .05. As such, the null hypothesis was rejected and the alternate hypothesis was accepted. Annual doctor visits are essential to breast cancer screening among for AA women.

According to researchers, lack of doctor visits contributes to low mammogram screening among AA women (Scheel et al., 2016; Wilcox et al., 2016). Lack of doctor visits contributes to low breast cancer screening rates, which lower positive breast cancer

outcomes (Patel et al., 2014). Although negative health-seeking behavior toward mammogram screening in AA women is influenced by many factors, regular doctor visits might represent one of the keys to improving the knowledge of AA women on the importance of adherence to mammogram screening for early breast cancer detection.

An argument could be made that other factors, whether personal, social, or both, might influence negative health-seeking behavior in AA women based on the results of the statistical analyses. Because not much research has been done on negative health-seeking behavior in AA women, there could be other variables that were not included in the dataset that could have yielded more substantial results. Some AA women are more conscious about their health and make more time and effort to get mammogram screenings, whether or not they have a personal doctor, health insurance, or doctor visits.

The results obtained from the analyses could also have been found because the sample was not diversely balanced and might not be a true reflection of the larger U.S. population. The women were chosen at random for the BRFSS survey, but some states are predominantly Black. All states were included in the survey, but each sample had more White participants than participants of any other race. If the sample included only women with certain doctors, health insurance, and doctor visits, the results of the regression analysis might be different.

Analyzing and Interpreting the Findings in Theory Context

The results of the study support the HBM. Based on the HBM, early breast cancer detection through mammogram screening is about more than breast cancer disease (Kim & Lee, 2015). It is also about the constructs of the HBM that predict behavior (C. L.

Jones et al., 2015), which include perceived susceptibility to doctor visits and breast cancer screening; perceived severity of the threat of breast cancer mortality, regardless of early detection; perceived benefits of early-stage breast cancer detection and successful treatment; perceived barriers such as age, race, not having a personal doctor, not having health insurance, and lack of doctor visits; self-efficacy, which is the belief in one's ability to access breast cancer screening; and cues to action, which constitute the internal and external push to get breast cancer screening. The variables that the analyses have proven to be statistically significant align directly with the constructs.

The regression analysis on the variables revealed that there is a significant relationship between lack of a personal doctor and lack of mammogram screening within the past 2 years, between lack of health insurance and lack of mammogram screening within the past 2 years, and between lack of doctor visits within the past 12 months and mammogram screening within the past 2 years. Patel et al. (2014) and Khaliq et al. (2015) reported that non compliance with mammogram screening is influenced by demographic and socioeconomic factors. According to Sohn (2017), demographic and socioeconomic factors include age, race, and lack of health insurance and are significant barriers that prevent AA women from having a personal doctor and accessing doctor visits and timely mammogram screening. Gathirua-Mwangi et al. (2016) reported that mammogram screening can reduce breast cancer mortality by as much as 49% when AA women adhere to mammogram screening guidelines.

Limitations of the Study

Much like other research studies, this study had limitations. One limitation of this study was that the dataset was missing responses from 1.5% of AA women. The CDC reported that disproportionate stratified sampling was used in the BRFSS telephone survey to select participants at random to avoid bias, but the sample was predominantly Caucasian. With missing responses that could be important to the study, the sample might not be truly representative of the larger AA population. Although the analyses showed statistically significant relationships between the variables, the sample could have been more proportionately balanced across the different races.

Another limitation was that secondary data were used, so the variable of negative health-seeking behavior had to be operationalized. Previous studies have indicated that demographic and socioeconomic factors influence behaviors (CDC, 2015; Corianno, 2015). Virgo et al. (2013) found that personal doctors play a pivotal role in breast cancer outcomes, from accessing regular mammogram screening to early stage detection to diagnosis and treatment. Carney et al. (2012) found that women without health insurance had higher mortality rates than women who had health insurance. Patel et al. (2014) found that lack of doctor visits is related to the underutilization of mammogram screening among AA women. These variables influence negative health-seeking behavior, and based on research (Bowen et al., 2014), negative health-seeking behavior in AA women plays a crucial role in their non adherence to mammogram screening.

The third limitation was that the reliability of the data could not be guaranteed. Although the BRFSS survey is deemed reliable, it cannot be definitively said that there

was no bias in the sample. Because the data were self-reported by participants, there was nothing to prove that participants were truthful when they answered the survey questions. According to Tiro et al. (2015), the validity of self-reported mammography use cannot always be ascertained because self-reported mammography use is often overestimated.

Recommendations

In this research study, the significance between lack of a personal doctor, lack of health insurance coverage, and lack of doctor visits within the past 12 months and lack of mammogram screening within the past 2 years was analyzed. The goal was to highlight how these variables influence negative health-seeking behavior toward early breast cancer detection in AA women age 40 years and older. Data were available on the demographic and socioeconomic factors that influence negative health-seeking behavior (Corriano, 2015; Highfield, Bartholomew, Hartman, & Balihe, 2014). However, not much research that focused directly on negative health-seeking behavior in AA women toward early breast cancer detection has been done. Therefore, information that focuses on negative health-seeking behavior toward early breast cancer detection in AA women is needed in the literature.

The results and limitations of the study make it necessary to highlight possible recommendations for future research. One recommendation is to replicate this study using a more diverse population sample. The BRFSS survey is invaluable, but there is always room for improvement. Because Caucasian is the predominant race in the United States, it is understandable that the survey would have more Caucasian participants.

However, more participants from all other races should have been included in the survey so that statistical analyses of the data would be more reflective of the greater population.

According to Shi et al. (2013), the lack of health insurance impedes AA women from successfully utilizing health care services like mammogram screening. Majority of the AA women in the study sample reported that they had health insurance. Therefore, the second recommendation for the replication of this study would be to include a larger scale of participants who do not have health insurance coverage to solidify the findings.

Another recommendation is to include other demographic and socioeconomic factors when replicating this study. Other variables like culture, attitude and beliefs, employment status etc. could possible change the outcome of the study. The study could be more generalizable to the larger population as lack of having a personal doctor, lack of health insurance and lack of doctor visits are just some of the factors that influence negative health seeking behavior in AA women toward early breast cancer detection.

Quantitative research method was used in this study because of the use of secondary data. Quantitative research allows researchers to test hypotheses that have been predetermined to produce statistical results that can be generalized to the rest of the population (Claydon, 2015). However, improving upon the limitations of this study would probably be better suited using a qualitative or mixed method approach with the use of primary data. Primary data allow researchers to be on hand when data are being collected even though it takes time. Researchers would be able hear from participants directly and would be better able to eliminate bias and validate the data used in the study.

This study identified some of the barriers that prevent timely mammogram screening among AA women. The lack of mammogram screening is a big contributor to the high breast cancer mortality rates among AA women. The lack of mammogram screening often results in late stage breast cancer diagnosis and treatment. The study is grounded in the HBM theory which highlights the behaviors that affect access to health care services. Constructs like perceived susceptibility focuses on the actions AA women take to prevent late stage breast cancer. Perceived benefits highlight the positive benefits of engaging in mammogram screening that promote early-stage breast cancer detection. Cues to action initiate decision making that is either influenced internally or externally.

Therefore, the final recommendation is for government agencies, public health departments, policy makers, health care providers and healthcare advocates to join forces to promote and make mammogram screening a priority. It would be important to create policies that outline the benefits, importance and risks of mammogram screening. It would also be important and necessary to educate AA women and ensure they understand how crucial it is for them to get timely mammogram screenings. Making mammogram screening a part of primary care practices could be beneficial in reducing mortality rate.

Implications for Professional Practice

Identifying disparities that influence negative health-seeking behavior toward early breast cancer detection in AA women age 40 years and older present implications for both professional practice and social change. For professional practice, the findings of this study might help educate health care providers across all disciplines on the barriers that influence negative health-seeking behavior among AA women toward early breast

cancer detection. Providers would then be better able and equipped to provide the right information to AA women about mammogram screening and help eliminate their doubts, fears and misconceptions. Providers might be able to successfully encourage AA women to get early mammogram screening. Providers might also be able to provide the right treatment and better treatment options when breast cancer is diagnosed at an early stage.

Implications for Positive Social Change

Knowing the disparities that contribute to negative health-seeking behavior toward early breast cancer detection in AA women could help identify and develop intervention and prevention measures that could address the barriers to mammogram screening. Addressing these barriers could help AA women become proactive toward timely mammogram screening, and reduce negative health-seeking behavior. Addressing the barriers could also allow access to timely and effective care and treatment which could also help improve negative health-seeking behavior toward early breast cancer detection. Improving negative health-seeking behavior in AA women toward early breast cancer detection could be instrumental in reducing the breast cancer mortality rate.

The findings of this study could help create positive social change by equipping government agencies, public health departments, policy makers, health care providers and healthcare advocates with information on the factors that influence negative health-seeking behavior in AA women toward early breast cancer detection. This information might be instrumental in creating healthcare policies, improving the delivery of healthcare services; as well as physician-patient relationship; and health outcomes overall across the continuum of care. The findings could increase awareness on some of the

challenges facing AA women with access to breast cancer screening. As such, effective strategic and implementation measures could be developed to address these challenges.

Conclusion

In summary, the focus of this study was to research the relationship between the variables: negative health-seeking behavior operationalized by lack of a personal doctor, lack of health insurance, and lack of doctor visits within the past 12 months, and early-stage breast cancer detection operationalized by lack of mammogram screening within the past 2 years in AA women age 40 years and older. The Wald chi-square test using multiple regression analysis was conducted which revealed a statistically significant relationship between lack of a personal doctor, lack of health insurance, and lack of doctor visits within the past 12 months and lack of mammogram screening within the past 2 years.

The results of the study confirm and extend knowledge in the healthcare administration discipline that lack of a personal doctor, lack of health insurance and lack of doctor visits are associated with negative health-seeking behavior in AA women toward early breast cancer detection. As such, there is a relationship between negative health-seeking behavior and late-stage breast cancer detection in AA women age 40 years old and older. The outcomes of the statistical analyses align the study with the HBM, which focuses on behaviors that affect health and the actions taken based on the perceived vulnerability that health issues create based on the benefits compared to the cost.

The findings of this study could help create positive social change by equipping government agencies, public health departments, policy makers, health care providers and healthcare advocates with information on the factors that influence negative health-seeking behavior in AA women toward early breast cancer detection. This information might be instrumental in creating healthcare policies, improving the delivery of healthcare services; as well as physician-patient relationship; and health outcomes overall across the continuum of care. The findings could increase awareness on some of the challenges facing AA women with access to breast cancer screening. As such, effective strategic and implementation measures could be developed to address these challenges.

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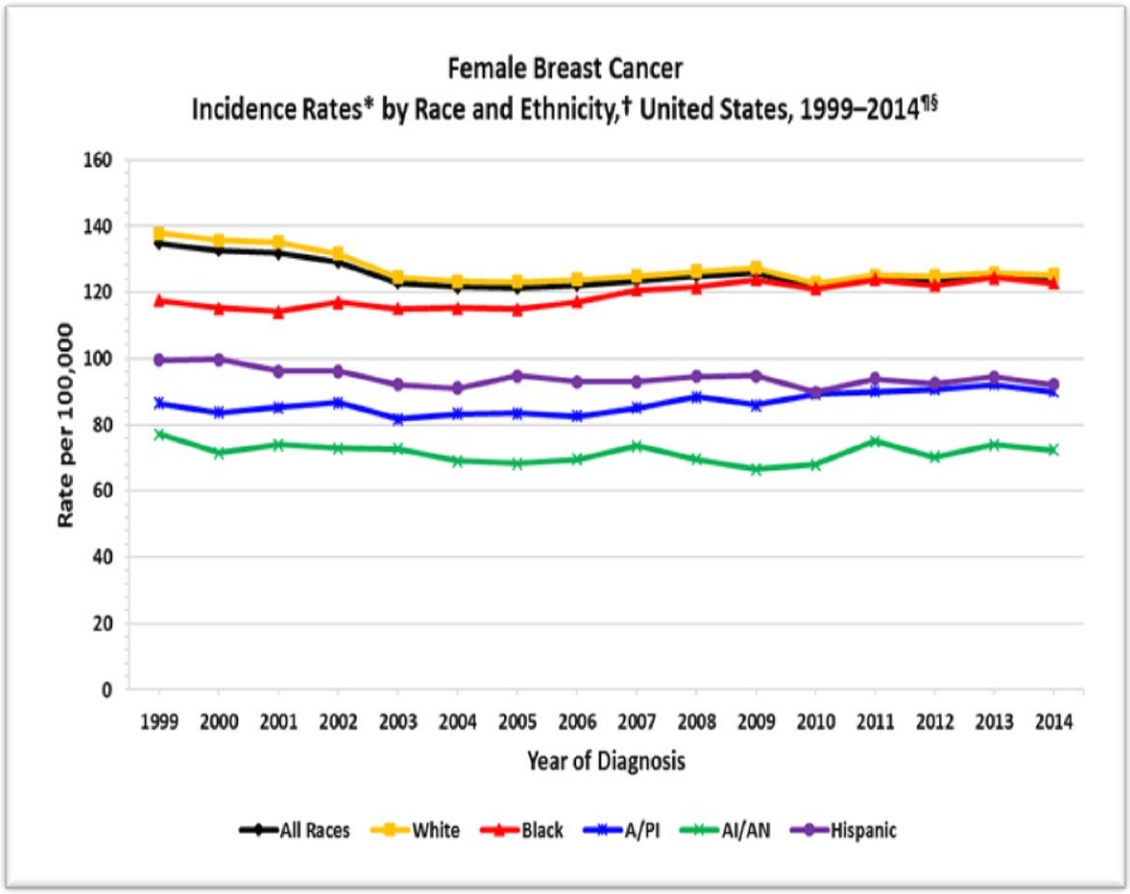
Appendix A: Female Breast Cancer Screening Guidelines

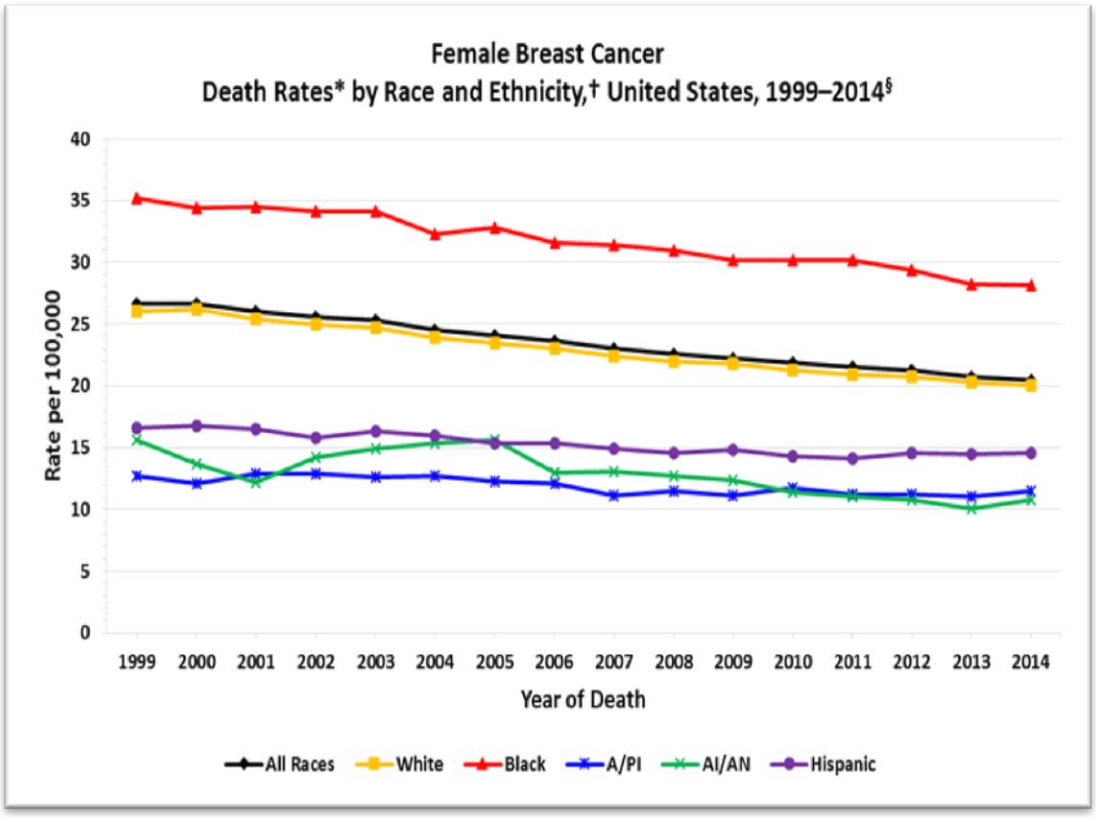
Breast Cancer Screening Guidelines for Women				
Age	**Agencies**			
	American Cancer Society	**American College of Obstetricians and Gynecologists**	**American College of Radiology**	**U.S. Preventive Services Task Forces**
Women aged 40 to 49 with average risk	Mammogram screening annually after considering both the benefits and risks of screening.	Mammogram screening and clinical breast exams annually.	Mammogram screening annually.	Women age 40 to 49 years old should decide if they want to get a mammogram annually.
Women aged 50 to 74 with average risk	Women aged 50 to 54 years should get a mammogram annually. Women between 55 and 74 years old should get a mammogram every two years.	Mammogram screening and clinical breast exams annually.	Mammogram screening annually.	Mammogram screening annually.
Women aged 75 or older with average risk	Women should continue to get mammogram screenings as long as their health is good and are expected to live 10 years or more.	Get a physician consultation to decide whether or not to continue mammogram screening.	When life expectancy is less than 5 to 7 years based on age or comorbid conditions mammogram screening should stop.	There is not enough data to assess the benefits and harms of mammogram screening for women age 75 years or older.
Women at higher than average risk	Women who are at high risk for breast cancer should get an MRI and a mammogram every year.	Women who test positive for BRCA1 or BRCA2 mutations or have a lifetime risk of ≥ 20% should do regular breast self-exams, clinical breast exams semi-annually and mammograms and MRIs annually.	Mammogram screenings and MRIs annually starting at age 30.	Women with a parent, sibling, or children with breast cancer are at higher risk for breast cancer and might benefit more from mammogram screening beginning at age 40.

Appendix B: Female Breast Cancer Incidence in the United States



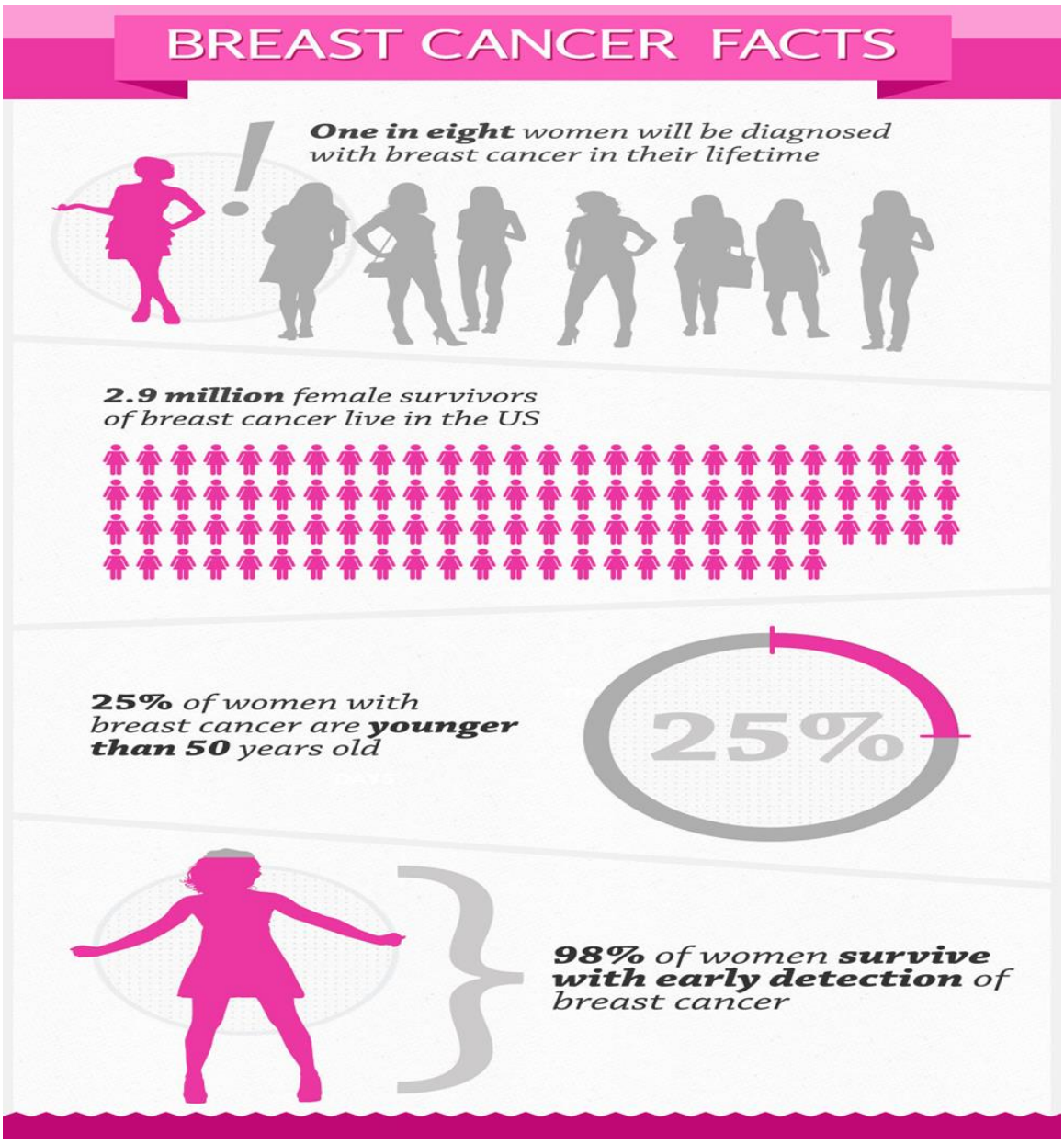
Retrieved from https://www.cdc.gov/cancer/breast/statistics/race.htm

Appendix C: Female Breast Cancer Deaths in the United States



Retrieved from https://www.cdc.gov/cancer/breast/statistics/race.htm

Appendix D: Breast Cancer Facts



From "Breast Cancer Facts," by Practis Inc., n.d. (http://obgynmiamifl.com/posts /gynecology/breast-cancer-statistics-you-need-to-know/). Use permitted with source acknowledgment.

Appendix E: Characteristics of the 2016 BRFSS Women's Health Model

Characteristics of the 2016 BRFSS Women's Health Module			
Mammogram Screening for Women ≥ 40 years Old, BRFSS, United States, 2016			
Characteristics	No	%	(95% CI)
Total	207,807	42.6	(1.29-1.30)
Age (yrs)			
40-44	11,277	21.0	(1.23-1.26)
45-49	17,015	30.4	(1.26-1.28)
50-54	22,928	34.1	(1.25-1.27)
55-59	29,370	38.1	(1.27-1.28)
60-64	28,710	52.4	(1.23-1.24)
65 and older	94,831	55.5	(1.33-1.34)
Don't know/Not sure/Refused	3,127	46.7	(1.39-1.48)
Race/Ethnicity			
Caucasian	162,888	44.3	(1.29-1.30)
Black/African American	17,807	45.0	(1.23-1.26)
Hispanic	13,352	34.0	(1.27-1.29)
Multiracial/non-Hispanic	3,379	35.8	(1.33-1.39)
Other Race	6,816	31.9	(1.31-1.35)
Don't know/Not sure/Refused	3,016	34.7	(1.44-1.52)
Primary Care Doctor			
Yes, only one	175,379	46.8	(1.27-1.27)
More than one	16,067	44.9	(1.30-1.32)
No	15,225	20.7	(1.53-1.56)
Don't know/Not sure/Refused	587	22.9	(1.54-1.81)
Health Insurance Coverage			
Yes	197,906	44.0	(1.28-1.29)
No	8,846	25.2	(1.47-1.51)
Don't know/Not sure/Refused	506	24.3	(1.72-1.83)
Number of Doctor Visits Within the Past 12 Months			
Several	23,253	45.1	(1.25-1.27)
None	1,290	22.9	(1.56-1.66)
Don't know/Not sure/Refused	55	42.3	(1.14-1.88)
Mammogram Within the Past 2 Years			
Yes	159,065	76.7	(1.05-1.05)
No	45,693	22.0	(1.09-1.10)
Don't know/Not sure/Refused	2,500	1.3	(1.24-1.31)

Appendix F: Mammogram Screening 2016 BRFSS Survey

Mammogram Screening for Women Years Old, BRFSS United States 2016

HOW LONG SINCE LAST MAMMOGRAM * COMPUTED FIVE LEVEL RACE/ETHNICITY CATEG Crosstabulation

			COMPUTED FIVE LEVEL RACE/ETHNICITY CATEG						Total
			Caucasian	African American	Hispanic	Multiracial	Other race	Don't know/not sure/Refused	
HOW LONG SINCE LAST MAMMOGRAM	Within the past two years	Count	124157	14768	10440	2462	5077	2161	159065
		% within HOW LONG SINCE LAST MAMMOGRAM	78.1%	9.3%	6.6%	1.5%	3.2%	1.4%	100.0%
		% within COMPUTED FIVE LEVEL RACE/ETHNICITY CATEG	76.2%	82.9%	78.2%	72.9%	74.5%	71.7%	76.7%
		% of Total	59.9%	7.1%	5.0%	1.2%	2.4%	1.0%	76.7%
	More than two years	Count	36909	2782	2752	860	1644	746	45693
		% within HOW LONG SINCE LAST MAMMOGRAM	80.8%	6.1%	6.0%	1.9%	3.6%	1.6%	100.0%
		% within COMPUTED FIVE LEVEL RACE/ETHNICITY CATEG	22.7%	15.6%	20.6%	25.5%	24.1%	24.7%	22.0%
		% of Total	17.8%	1.3%	1.3%	0.4%	0.8%	0.4%	22.0%
	Don't know/Not Sure/Refused	Count	1822	257	160	57	95	109	2500
		% within HOW LONG SINCE LAST MAMMOGRAM	72.9%	10.3%	6.4%	2.3%	3.8%	4.3%	100.0%
		% within COMPUTED FIVE LEVEL RACE/ETHNICITY CATEG	1.1%	1.4%	1.2%	1.6%	1.4%	3.7%	1.2%
		% of Total	0.9%	0.1%	0.1%	0.0%	0.0%	0.1%	1.1%
Total		Count	162888	17807	13352	3379	6816	3016	207258
		% of Total	78.6%	8.6%	6.4%	1.6%	3.3%	1.5%	100.0%

Appendix G: List of Key Acronyms Used in the Study

African American.....AA

American Cancer Society .....ACS

Behavioral Model of Health Services Use .....BM

Behavioral Risk Factor Surveillance System.....BRFSS

Center of Disease Control and Prevention .....CDC

Clinical Breast Exam .....CBE

Computer-Assisted Telephone Interview .....CATI

Disproportionate Stratified Sample .....DSS

Florida Department of Health .....FDH

Health Belief Model .....HBM

Institutional Review Board.....IRB

Iterative Proportional Raking.....IPR

Magnetic Resource Imaging.....MRI

National Cancer Institute .....NCI

National Health and Nutrition Examination Survey .....NHANES

National Health Interview Survey.....NHIS

Primary Care Doctor .....PCP

Social and Economic Status.....SES

Statistical Package of the Social Sciences .....SPSS

United States of America .....U.S.

World Health Organization.....WHO