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Cultural Sensitivity and African American Women's Compliance With Breast Cancer Screening

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Walden University
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Abstract

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by

Cynthia L. Payne

MBA, University of Phoenix, 2009

BS, University of Baltimore, 1985

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Public Health

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Abstract

Although the incidence of breast cancer is almost the same for middle-aged African American and Caucasian women, the rate of patients' following breast cancer screening and following up recommendations differs. African American women are less likely to follow recommendations and have higher mortality rates when compared to Caucasian women. One factor thought to affect compliance with breast cancer screening and follow up is culturally sensitive communication. This purpose of this quantitative correlational study was to determine if the culturally sensitive communication of a medical center influenced compliance with breast cancer screening and follow up and if compliance has an effect on the stage of breast cancer when diagnosed for African American women between the ages of 50 and 74. The research questions were aligned with the theoretical pathways of the Patient-Centered Culturally Sensitive Healthcare Model. This quantitative cross-sectional study was based on secondary data of African American women aged 50-74 from electronic systems for each Southern California location of a national health maintenance organization between the years 2012-2016. The results of the regression analysis from averages of the scores from the Member Appraisal of Physician/Provider Services questionnaire, determined associations between the cultural sensitivity scores of the African American woman's medical center and their compliance with recommendations for breast cancer screening and follow up after screening. However, no association between the stage of cancer and medical center's cultural sensitivity was found. Results can be used to develop cultural sensitivity interventions at medical centers aimed to enhance African American women's compliance with breast cancer screening and follow-up recommendations.

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Dedication

I would dedicate my research all my friends, near and far, and family, including my work family, near and far that supported and encouraged me throughout my doctorate journey. I also dedicate this research in loving memory of my parents, George and Beatrice Payne, my uncle, Charles Barnes and my inspiration to pursue breast cancer research, Dr. Edith Gordon, who always encouraged me to aim high and think big.

Acknowledgments

First, I must thank Jesus Christ my Lord and Savior who gave me the strength and faith to complete this journey, despite life 's challenges. I would like to thank Drs. Collins, Day, Griffin, Haque, Prehn, Robinson, and Sharma for their wisdom, encouragement and patience during this process.

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Chapter 1: Introduction to the Study

Although African American women have a lower incidence (124 per 100,000) of breast cancer than Caucasian women (128 per 100,000), they have a 42% higher mortality rate (31 per 100,000 compared with 21 per 100,000 for Caucasian women) from the disease, suggesting they are not benefiting from early detection and improved treatment protocols to the same degree as Caucasian women (American Cancer Society [ACS], 2014; Rauscher, Allgood, Whitman, & Conant, 2012). One reason for the higher mortality rate from other forms of breast cancers may be that African American women have significantly lower compliance rates with recommendations for screening and follow-up screening or treatment for breast cancer than Caucasian women (ACS, 2014). Earlier diagnoses typically lead to reduced mortality, so what is not clear is the reasons African American women choose not to comply with medical recommendations for further screening or treatment (ACS, 2014).

One reason posited for these disparities is the way medical providers treat or communicate with African American women. If providers' communication practices are not culturally sensitive when talking with these women, they are not responding appropriately to the differences in the ways various ethnic groups use, respond to, and process language and even tones of voice (Roncoroni et al., 2014). Provider communication that is sensitive to language- and message-processing differences and interpretations of body language are thought to be one key to increasing African American women's compliance with further screening or tests that might reduce their negative health disparities (Hayward & Li, 2014; Like, 2011). A provider's not

recognizing the differences in perceptions and responses of African American women may contribute to their not choosing to undergo further tests or follow recommended screening protocols that might save their lives (Hayward & Li, 2014). For those reasons, I wanted to learn whether cultural sensitivity of a provider-affected patient follow through with recommended breast cancer screening and follow-up and affected whether patients complied with recommendations for further testing following breast cancer screening.

Cultural sensitivity in the communication of medical providers is their ability to recognize and respect a patient's culture, adapt their communication style to match that culture, and communicate health information in a way that the patient is likely to accept and act on (Like, 2011). According to Tucker, Moradi, Wall, and Nghiem (2014), provider cultural sensitivity consists of three components: cultural competence, sensitivity/interpersonal skill, and respect/communication. Although the concepts of cultural competence and cultural humility are also utilized, the need for culturally sensitive providers is increasing in the medical community and is now a category that has been measured by the Agency for Healthcare Research and Quality (AHRQ; 2015) using patient surveys.

In 2011, the AHRQ determined that measuring cultural sensitivity from the perspective of the patient provided a more accurate assessment than previous self-assessment models providers had followed. The Joint Commission, in fact, added an assessment of the cultural sensitivity of providers to the 2009 reporting requirements for accredited hospitals, and hospitals that participate in The Joint Commission has also incorporated culturally and linguistically appropriate healthcare (AHRQ, 2015). Although

assessment by The Joint Commission is voluntary, of the 345 hospitals in California, 321 are accredited by that agency (AHRQ, 2015).

In a 2014 study, Pardasani and Bandyopadhyay used the client satisfaction questionnaire in a diverse neighborhood community center to measure patients' perceptions of the care of their healthcare providers. Patients in the study were African American (42), Caucasian (51), and Hispanic (31), with ages ranging from 18 to 60. African American and Latino respondents declared their belief that some providers lacked cultural awareness because of how they communicated health information (Pardasani & Bandyopadhyay, 2014), suggesting that communication practices—body language, tone of voice, and level of language—may affect whether women from an ethnic background different from the provider will comply with recommendations to undergo a mammogram or other tests for breast cancer or with diet or medication suggestions (Wall, Tucker, Roncoroni, Allan, & Nguyen, 2013). According to Tucker, Marsiske, Rice, Jones, and Herman (2011), cultural sensitivity when communicating health information plays a role in convincing the patient of the importance of following recommendations for additional tests or treatments.

Background

Although African American women have a lower incidence of breast cancer than Caucasian women, their mortality rates for breast cancer are higher, with African American women at 31 deaths per 100,000 per year compared to 21 per 100,000 for Caucasians (Surveillance, Epidemiology, and End Results Program, 2013). With a diagnosis of breast cancer, 42% more African American women will die from the disease

than Caucasian women, a result attributed to the former group's failing to undergo recommended testing or treatment (ACS, 2014). Early detection of breast cancer using mammography and follow-up testing usually leads to better prognoses if an abnormality or cancer is discovered (Centers for Disease Control [CDC], 2012), but African American women are less likely than Caucasian women are to pursue either course of action.

According to Meguerditchian et al. (2012), physician and other medical provider communication skills directly affect the way African American women respond to medical recommendations. In one case, the communication skills of 413 Canadian physicians were measured on the Medical Council of Canada clinical skills examination (Meguerditchian et al., 2012). Approximately 32,000 of 96,000 eligible women aged 50-69 participated in the study from 1993 to 2006. The healthcare providers of women who were compliant with screening and follow-up recommendations had above average scores on the Medical Council of Canada clinical skills examination, a measure that included communication skills. Although Meguerditchian et al. (2012) did not mention "cultural sensitivity," doctors' communication that positively influences patient behavior was considered a measure of the provider's cultural sensitivity (Carle, Weech-Maldonado, Ngo-Metzger, & Hays, 2012). Carle et al. (2012) also found that providers with positive clinical assessment scores supported the belief that doctor communication is a factor in cultural sensitivity.

Another study that showed support for better provider communication was conducted by Jensen, Mukai, Andersen, and Vedsted (2012), who described how provider communication directly affects breast cancer screening compliance. This study

of 13,288 patients and 67 providers revealed that when providers effectively communicated the need for breast cancer screening, regardless of ethnicity, income, or distance to the screening site, screening rates increased (Jensen et al., 2012). Those results suggested that effective communication by the provider might improve health outcomes because of patients' undergoing recommended testing (Jensen et al., 2012).

In 2009, The Joint Commission, in conjunction with AHRQ, initiated a requirement for culturally and linguistically appropriate language that included a cultural competence item set as part of Consumer Assessment of Health Care Providers and Systems (CAHPS) for ambulatory (outpatient) departments (AHRQ, 2015). One of the measures was how well providers communicated with patients from the perspective of the patient. Improving the quality of provider communication was the purpose of using patient-driven data from the cultural competence item set (AHRQ, 2015). Surveys from hospitals across the United States have also suggested that effectively communicating health information to a patient is an essential skill that could help to reduce negative health outcome disparities (AHRQ, 2015). The patients select their responses to the survey questions on a Likert-type scale, with 1 being the lowest and 10 the highest.

Culture is comprised of the thoughts, interactions, beliefs, and values of a racial or ethnic group (Office of Minority Health [OMH], 2011), and can determine how a provider communicates health information and the patient receives it. In a landmark study of health disparities, Smedley, Butler, and Bristow (2002) stated that provider–patient communication has a direct influence on patient compliance with breast cancer screening and follow-up recommendations. In the Smedley et al. (2002) study, patients

presented their providers with health conditions, and in return, providers suggested treatment options or health recommendations. During the communication of health options, providers who lacked cultural sensitivity may not have understood how to clearly communicate health information and glossed over those details (Smedley et al., 2002). A meta-analysis of cultural sensitivity studies by the OMH (2011) also indicated that cultural sensitivity is a factor in reducing disparities in healthcare. When culturally sensitive communication occurs between patients and providers, health concerns may be discussed in a manner that respects the health beliefs and practices of the patient (OMH, 2011).

Public health professionals who view people as stereotypes of their race or culture, harbor outright racism, or show bias toward patients of different ethnicities—whether conscious or unconscious—have an adverse effect on whether people follow their advice, particularly people of color (The Applied Research Center, 2005). Provider prejudice might even result in different treatments for the same health problem. In the study by Smedley et al. (2002), providers suggested a less-aggressive form of treatment for African American patients with the same cardiac condition as Caucasian patients. Caucasian patients were usually given medication and referred for additional tests, whereas most African Americans were given medication only (Smedley et al., 2002). Some providers were unaware of their bias, and because they thought African Americans lacked trust in physicians and medical professionals, they wrote fewer orders for additional tests (Smedley et al., 2002).

Other studies also revealed differences in treatment for patients with similar histories and symptoms. Royak-Schaler et al. (2008) studied 141 African American women with first-degree relatives who had breast cancer from spring 1994 to spring 1995. Although women with first-degree relatives with cancer have a higher risk of developing breast cancer (ACS, 2013), providers were less likely to discuss personal risk factors with African American women than they were with Caucasian women who had the same risk factors (Royak-Schaler et al., 2008).

Recognizing the relationship and importance of cultural sensitivity to reducing health disparities, in 2003. The AHRQ began in 2012 to examine some of the causes of health disparities. The U.S. Congress also recognized the need to develop culturally sensitive care and ordered the National Healthcare Quality Report to provide details about the care given to Americans. Additionally, the National Healthcare Disparities Report described the healthcare delivery system as it related to racial and ethnic disparities (AHRQ, 2015). In 2012, reports from National Healthcare Quality Report and National Healthcare Disparities Report revealed that health disparities still exist for cancer screening and treatment, particularly for African Americans of low socioeconomic status (AHRQ, 2015). The report acknowledged that efforts to reduce healthcare inequities were continuing to lag.

Perceived bias of providers communicating health information could influence decisions of patients (Meyers, 2007). For example, if a provider does not communicate or emphasize the importance of having breast cancer screening to African American women, this omission reduces the likelihood of compliance with recommended

procedures (Meyers, 2007). Meyers (2007) concluded that it is likely some providers may not be aware of their lack of culturally sensitive communication.

The challenge continues to be how to develop a method to link improved patient outcomes to cultural sensitivity to decrease disparities. Wong, LaVeist, and Sharfstein (2015) concluded that most health systems have tried to solve healthcare inequities by improving quality and access to care. However, few have focused on the effects of investing more in improving cultural sensitivity behavior of providers, a factor that has been shown to positively affect health outcomes.

Problem Statement

African American women are less likely to follow breast cancer screening guidelines or to comply with recommended follow-up to breast cancer screenings such as ultrasound studies or repeat mammograms (Morbidity and Mortality Weekly Report, 2012). Albain, Unger, Crowley, Coltman, and Hershman (2009) also suggested one of the factors contributing to the lower rates of screening and follow-up is that many providers do not communicate in the cultural context of their patients. Although primary care physicians are crucial to communicating the importance of breast cancer screening and timely follow-up of an abnormal breast cancer-screening exam, if their patients are offended or otherwise put off by what they perceive as insensitive recommendations, they may be less likely to follow instructions. More sensitive communication is one approach to improve the acknowledgment of health information and follow through on recommendations (Meyers, 2007), but available research has yielded few studies of the

association between cultural sensitivity and breast cancer screening rates and follow-up compliance among African American women from the perception of the patient.

Purpose of the Study

My focus in this quantitative study was to determine if an association existed between compliance with breast cancer screening and follow-up behaviors of African American women and the cultural sensitivity scores of the medical center where the women receive care. To learn whether there was an association, I examined the early breast cancer detection among African American women and the cultural sensitivity scores of the medical center. Cultural sensitivity scores were the independent variable, while African American women's compliance with provider recommendations for breast cancer screening and follow-up and the early detection of breast cancer were the dependent variables.

I used the patient-centered culturally sensitive health care (PC-CSHC) model that was developed to explain the connection between care that is patient centered and culturally sensitive and adherence to treatment, health-promoting behaviors of the patient, and health outcomes (Tucker et al., 2011). According to Guidry, Glanz, Rimer, and Viswanath (2008), understanding individual attitudes, beliefs, motivations, and behaviors shape interpersonal theories. Health information communicated by a provider in a culturally sensitive manner could also increase self-efficacy of the patient (Guidry et al., 2008). According to the OMH (2010), cultural sensitivity aids in closing the gap in health disparities because the provider and patient can discuss health concerns without cultural barriers obstructing communication and understanding.

Research Questions and Hypotheses

RQ 1: What is the association between the breast cancer screening compliance of African American women between the ages of 50 and 74, as measured by the U.S. Preventive Services Task Force recommendations, and the cultural sensitivity score of the medical center where they receive care?

$H_0 1$: There is no association between the breast cancer screening compliance of African American women between the ages of 50 and 74, as measured by the U.S. Preventive Services Task Force recommendations, and the cultural sensitivity scores of the medical center where they receive care.

$H_a 1$: There is an association between the breast cancer screening compliance of African American women between the ages of 50 and 74, as measured by the U.S. Preventive Services Task Force recommendations, and the cultural sensitivity scores of the medical center where they receive care.

RQ 2: What is the association between the breast cancer screening follow-up compliance behavior of African American women, as measured by the recommendations of the CDC, and the cultural sensitivity scores of the primary care physicians at the medical center where the women receive care?

$H_0 2$: There is no association between the breast cancer screening follow-up compliance behavior of African American women, as measured by the recommendations of the CDC, and the cultural sensitivity scores of the primary care physicians at the medical center where the women receive care.

H_a2: There is an association between the breast cancer screening follow-up compliance behavior of African American women, as measured by the recommendations of the CDC, and the cultural sensitivity scores of the primary care physicians at the medical center where the women receive care

RQ 3: What is the association between cultural sensitivity scores of medical centers screening and follow up compliance, and early stage breast cancer detection (Stages I and II) among African American women and the cultural sensitivity scores at the medical center where the women receive care?

H_03: There is no association between early detection rates for breast cancer (Stages I and II), of African American women patients, their compliance with screening and follow-up, and the cultural sensitivity scores of medical centers where they receive care.

H_a3: There is an association between early detection rates for breast cancer (Stages I and II), of African American women patients, their compliance with screening and follow-up, and the cultural sensitivity scores of medical centers where they receive care.

Theoretical Framework

The PC-CSHC model was developed to link healthcare and patient adherence to treatment, behaviors for health promotion, and health outcomes (Tucker et al., 2011). The model was developed from extensive literature reviews, focus groups with an emphasis on patient-entered care, and perceptions of providers in culturally diverse groups (Tucker et al., 2011).

Cultural competency is a component of cultural sensitivity, and in healthcare is a reflection of a provider's understanding of the cultural differences between him or her and the patient. Understanding the cultural variances of an ethnic group is believed to enable the provider or system to communicate to a patient in a way that reflects empathy of the cultural differences, values, and beliefs of the group (Tucker, Arthur, Roncoroni, Wall, & Sanchez, 2013). Cultural sensitivity includes the use of language and the treatment of a patient that acknowledges the differences in nonverbal and spoken differences and their cultural sensitivity to the patient and knowledge of the healthcare system (Tucker et al., 2013). The PC-CSHC model was designed to promote cultural sensitivity to improve adherence with good health practices, following treatment recommendations, sensitive provider communication, and clear patient perceptions (Tucker et al., 2013).

The PC-CSHC model has been tested using various tools to determine competency of primary care providers and the perception of their patients (Tucker et al., 2011). For example, the Provider Behaviors and Attitudes subscale of the Tucker Culturally Sensitive Health Care Inventory–African American Patient Form was used to assess the cultural sensitivity of providers who care for African American patients (Tucker et al., 2011). The validation tools were focused on two racial groups, African Americans and Caucasian Americans (Tucker et al., 2011). The results of the testing and conclusions in the literature suggested a connection between cultural sensitivity and patient compliance with health and treatment recommendations of the provider (Tucker et al., 2011). Despite the model being relatively new, it has been validated and tested,

focusing on the relationship between cultural sensitivity, minority patients, and the effects on health outcomes.

In practice, providers and organizations with culturally sensitive patient interactions when communicating health information could positively affect patient outcomes (Roncoroni et al., 2014). To accomplish culturally sensitive communication with the patient, a provider must consider the culture of not only the patient but must understand his or her own prejudices and biases (Purnell, 2002). In CAHPS, a set of questions to measure culturally competent behavior of the provider includes provider sensitivity because the questions were developed to examine communication and provider interactions from the perspective of the patient and follow a patient-centered approach (AHRQ, 2015). Member Appraisal of Physician/Provider Services (MAPPS) is an internal tool used to measure cultural sensitivity, which has the same CAHPS questions and was the measure used in this study.

Because of the importance of culturally sensitive communication, studies have been conducted on the preparedness of providers to deliver culturally sensitive care. For example, Horwitz, Sonilal, and Horwitz (2011) found that some physicians were not adequately prepared to deliver cross-cultural care, partly because of their lack of training or lack of awareness of the kinds of differences in cultures. To address the lack of preparation, Palmer et al. (2011) studied ways to increase cultural sensitivity through a course that included information for primary care physicians about breast cancer disparities. After completing the education modules, provider awareness of racial breast

cancer disparities and the effectiveness of their communication with minority patients increased from 70% to 94% (Palmer et al., 2011).

During the patient and provider interaction, the provider may explain a condition in lay terms instead of medical terms. If the provider is not culturally sensitive, the words chosen to deliver the message may seem condescending to the patient and could negatively affect the way the patient receives and processes the health message (AHRQ, 2015). A provider using complex medical terms instead of lay language to describe a treatment can build a barrier between provider and patient (Wright et al., 2013). The major assumption of the PC-CSHC model is that care that is patient centered and culturally sensitive relates to a patient's adherence to treatment and health promotion behaviors that might promote positive health outcomes (Tucker et al., 2013). If communication is free from prejudice and bias and clearly and appropriately delivered, a provider can influence a patient to be an active participant in the setting of goals, plans, and interventions recommended for their own healthcare (Tucker et al., 2013).

The quality of healthcare practice and the provider/patient relationship from the perspective of the patient is demonstrated in the PS-CSHC model (Tucker et al., 2011). The perceptions of the provider about the population he or she serves may influence the way the information is delivered and the way the patient receives it (Robert Woods Foundation, 2011). This statement was shown in studies conducted by the foundation that found breast cancer screening and follow-up and health outcomes were not followed if there were negative patient perceptions (Robert Woods Foundation, 2011).

Nature of the Study

I conducted a cross-sectional study using archival data from the 14 medical centers in the Southern California region of a national health maintenance organization (HMO). I used these secondary data to examine if the cultural sensitivity of a medical center where the women received care determined by the overall cultural sensitivity score is associated with compliance with breast cancer screening and follow-up of African American women aged 50 to 74 and if the cultural sensitivity of the medical center is associated with early detection of breast cancer in the same population.

According to a 2014 program for the HMO, the 14 medical centers of the HMO serve 7% of the African American female population in this age group. Southern California includes appropriately 6% African Americans in this age group (U.S. Census Bureau, 2014), which makes the African American women in the 50-74 age served by the HMO comparable to the population of Southern California. I selected this age group because the U.S. Preventive Services Task Force (2014) concluded that women between the ages of 50 and 74 who have an average risk of developing breast cancer benefit from bi-annual breast cancer screening. The HMO follows U.S. Preventive Services Task Force guidelines.

Data Sources

The HMO has developed an internal tracking tool called MAPPS that collects patient perceptions of the provider visit. MAPPS is focused on the perceptions of the patient's trust of the provider, the effectiveness of the communication from the provider, and if the patient perceived discrimination (Hyatt, 2007). The HMO sends MAPPS

questionnaires randomly to patients after each visit at the rate of 30 questionnaires per provider per week. The average return rate is 1% (Hyatt, 2007).

In a personal communication on August 14, 2014, the director of diversity at the HMO stated that one section of the MAPPS survey is focused on doctor communication and includes questions that measure cultural sensitivity. MAPPS scores of provider/patient interaction for departments are of interest to the diversity department because the information is obtained from the patient. The department uses the scores to develop scorecards for each department and medical center, which are then used to learn how to increase awareness of cultural sensitivity. Departmental scorecards are then combined to generate overall cultural sensitivity scores for each medical center. I used the overall medical center score as the measure of cultural sensitivity for this study.

Health records were examined using the HMO internal tracking tool called POINT, to determine compliance with screening and follow-up recommendations for 2012 through 2016. I compared data about the cultural sensitivity of each medical center with breast cancer screening and follow-up and early detection data. The data for early detection of breast cancer were determined using the staging of cancer by the breast cancer registry. Stages I and II breast cancers are considered early stages (National Cancer Institute, 2015). Each medical center was assessed to determine the rate of early stage breast cancer among its African American patients. I requested a de-identified data file for the information needed from POINT and the other databases for statistical purposes and received a single de-identified data file with information compiled from all the databases.

Analytical Strategies

I conducted a cross-sectional analysis to measure the association between the independent and dependent variables. The sample was comprised of African American women between the ages of 50 and 74 who had medical care at the HMO from 2012 through 2016. The independent variable was the medical center cultural sensitivity score. The dependent variables were rate of early detection and compliance with screening and follow-up recommendations after screening. The examination of the group included using percentages as well as compliance and noncompliance rates to determine if compliance with recommendations for breast cancer screening and follow-up were associated with the cultural sensitivity of their providers and subsequent early detection of breast cancer. To determine if there was an association, I used regression analysis. More details about the independent and dependent variables are presented in Chapter 3.

For the women diagnosed with breast cancer, stage at diagnosis was also examined to determine if there is an association between cultural sensitivity score of the medical center, compliance behavior, and early stage cancer diagnosis. The differences in compliance with screening recommendations for African American women diagnosed with Stages I or II breast cancer were examined by percentages using p values (2-sided) based on the chi distribution. Covariates included were age at diagnosis, medical facility, geocoded income, dates of mammogram screenings, and stage of cancer. I assessed if there was an association between early detection of cancer (Stages I and II), cultural sensitivity scores, and compliance with breast cancer screening and follow up recommendations. All statistical analyses were conducted using SAS version 9.3.

Definitions of Terms

Initial compliance with or adherence to screening: Undergoing breast cancer screening in the intervals recommended by the U.S. Preventive Services Task Force. Women between the ages of 50 and 74 who have breast cancer screening every 24 months (bi-annually) are considered compliant (U.S. Preventive Services Task Force, 2014).

Compliance with or adherence to recommendations after initial screening: A patient who follows recommendations of the provider because of breast cancer screening results is considered compliant (ACS, 2012).

Cultural sensitivity of a medical provider: Whether a provider's own culture, thoughts, and environment do not influence how he or she communicates or interacts with someone from another culture. A culturally sensitive provider will not manifest negative judgment of a person with a different background by accepting and respecting his or her culture and adapt care to match the cultural beliefs of the patient to provide patient-centered care, influencing the patient to adhere to health recommendations. This type of provider will also effectively communicate health information to affect health outcomes (Purnell, 2005).

Early stage breast cancer: Stages I or II breast cancer versus late stages, Stages III and IV. Cancers are classified by the Cancer Registry by tumor size. Tumors less than 2 cm are classified as Stage I. Tumors greater than 2 cm but less than 5 cm are classified as Stage II.

Income: For purposes of this study, women meeting the screening criteria were grouped into four percentiles: Q1 was lower than 25% or less than median income; Q2 was $34,504 to $59,148; Q3 was $59,149 to $95,178; Q4 was $95,179 or greater.

Mammogram: A low-dose X-ray of the breast used to screen for early detection of breast cancer (ACS, 2013).

Medical center cultural sensitivity: Patients' averaged Likert scale rankings on a scale of 0 (lowest) to 10 (highest) of questions only for cultural sensitivity of primary care providers at a medical center from data gathered from MAPPS surveys. Scores were trichotimized: 0-4 (poor), 5-8 (average), 9-10 (good).

Primary medical care for women: Family medicine, internal medicine, and obstetrics and gynecology.

Provider: A physician or other medical professional who provides health care.

Service area: The locations of the HMO as the provider of healthcare for the population as grouped by ZIP codes.

Ultrasound: An examination of the breast using sound waves to detect abnormalities suggested by findings on the screening exam (ACS, 2013).

Assumptions

All study participants had HMO health insurance; therefore, insurance coverage was eliminated as a barrier to care. Patients with HMO health insurance are assigned to a service area based on ZIP code in an attempt to provide adequate access to care based on the distance of the residence of the patient to the medical facility ("Strategies for Leadership," n.d.). Given these facts, I assumed access to care did not contribute to

noncompliance with breast cancer screening and follow-up recommendations among

African American women. I also assumed race and ethnicity were accurate in the

electronic health record because they are self-reported (Goldberg, Jones, Takeda, &

Wong, 2012). Another assumption for the purpose of this study was that answers to the

questions pertaining to cultural sensitivity were based on patient-provider interaction.

During patient visits, I assumed the provider had told the patient of the need for breast

cancer screening and/or follow-up. I also assumed the provider recognized the

importance of communicating clearly and explained the health benefits of breast cancer

screening and follow-up to all female patients, including African American women

between the ages of 50 and 74.

Scope and Delimitations

The focus of this study was on whether the cultural sensitivity of a medical center

for the locations of a HMO in Southern California positively influenced the compliance

behavior of African American women. In this study, cultural sensitivity was measured by

participants' perceptions that came from the MAPPS survey scores for the medical

center's cultural sensitivity. I used the overall cultural sensitivity scores for the primary

care departments of the medical center to determine if the cultural sensitivity of the

medical center appeared to have an effect on early detection of breast cancer in African

American women between the ages of 50 and 74. The compliance rate of African

Americans was determined using an internal system that has a database of all women

between the ages of 50 and 74 with a distinction made for compliance and

noncompliance within ethnicities, specifically including African American women between the ages of 50 and 74.

Mortality from breast cancer among African American women, regardless of compliance with recommendations for breast cancer screening or follow-up, was not included in the study. This study also did not include whether similarities or differences in patient/physician race and ethnicity was a factor in determining cultural sensitivity. Furthermore, I did not include observations of patient/provider interactions or examine questionnaires patients typically complete that are not included in the medical record of the patient. The participants were only those patients in Southern California who had the same HMO for medical insurance.

Limitations

The study sites were14 medical centers of the same HMO in Southern California, each of which had a different percentage of African American patients. For example, 3% of the patients in the service area of Baldwin Park were African American, while in Los Angeles and West Los Angeles, 12% of the patients were African Americans. Comparing other facilities to these facilities, Los Angeles or West Los Angeles might have skewed the results of this study because of additional training received by providers. The West Los Angeles facility, in fact, was the first Center of Excellence for Culturally Competent Care in 1999 ("Strategies for Leadership," n.d.).

Cultural sensitivity was measured for the medical center by the perceptions of patients for primary care providers. Previous studies used self-administered measures such as the implicit bias test, Internet-based courses for provider self-assessment, and the

perceived cultural sensitivity scale. A limitation of previous studies was that patients were not asked to assess the communication skills of the provider, and few even mentioned using the perceptions of patients to measure cultural sensitivity of providers. For this reason, perceptions of cultural sensitivity from the perspective of patients may be useful for future education of providers to improve their communication with those of different cultures.

As a result of the factors mentioned above, I used secondary data because there were no direct observations of patient/provider interaction, an acknowledged limitation of the study but one that was necessary to preserve the anonymity of both provider and patient. Another limitation was that data gathering did not occur in the natural environment of the participant (Babbie, 2010). Real-time provider/patient interaction, including observations of oral and nonverbal cues, could add useful information in subsequent studies, but it was not included here.

Because I did not consider individual providers, I used the mean, median, and mode scores for the cultural sensitivity of the 14 medical centers of the HMO. Medical center data are averaged from MAPPS data for each primary care department for each center. As a result, providers and departments with lower cultural sensitivity scores may not be adequately represented because individual provider data are not available.

Significance of the Study

The study results may help to determine the extent to which breast cancer screening and follow-up compliance behaviors of African American women are associated with culturally sensitive medical centers. I also explored whether the cultural

sensitivity of the medical center is associated with compliance and early detection of breast cancer (Stages I or II). Many interventions seek to determine the individual factors that affect breast cancer screening compliance, but few have considered interpersonal factors of providers and patients that may affect effective communication (Tucker et al., 2013). The results of this study could aid in developing interventions for medical centers' providers to improve breast cancer screening and follow-up compliance of African American women. A few of the factors contributing to higher death rates among African American women include limited access to care and lack of early detection and treatment (DeSantis, Naishadham, & Jemal, 2013). Culturally sensitive presentation of medical information is thought to positively influence the behaviors of patients and increase compliance with recommendations of their healthcare providers (Hayward & Li, 2014).

Currently, the states of California, New Jersey, Washington, New Mexico, and Connecticut require providers to have cultural sensitivity training, and Maryland strongly suggests cultural sensitivity training for medical professionals (Like, 2011). This training is designed to provide an appreciation for different beliefs, define stereotyping and explain its effects, and recognize patterns of health disparities (Like, 2011). Culturally sensitive communication at a medical center might encourage African American women to comply with provider recommendations for breast cancer screening and follow-up if health concerns arise after the initial breast cancer screening. Because African American women are also less likely to return for follow up in 30 days, the time suggested by the ACS, examining the cultural sensitivity of medical center's providers could help explain the reasons they are diagnosed with later stage cancers and suffer a higher mortality rate

despite the lower incidence of breast cancer in the population. The findings from this study may indicate if there is a need for strengthening culturally sensitive communication of a medical center's providers could in turn lead to improved breast cancer diagnosis outcomes for African American women, a result that would have positive social change.

Summary

The purpose of this study was to explore if an association exists between the cultural sensitivity of medical centers and the compliance of African American women with breast cancer screening recommendations and timely follow up. Chapter 1 provided the goals, background, significance, purpose, and nature of the study. It also provided definitions of key concepts and how the outcome of the study might help to improve health outcomes of African American women if they manifest better compliance with breast cancer screening and follow up because the population has a higher risk of death from this disease than Caucasian women. Chapter 1 also included the assumptions, scope, delimitations, limitations, theoretical, and conceptual frameworks. Chapter 2 is a comprehensive review of the literature and current perspectives on the effects of the cultural awareness of healthcare providers on the behaviors of African American women recommended for additional breast cancer screening and follow-up.

Chapter 2: Literature Review

Introduction

Effective communication across cultures enables a person to relate to and show respect for the values, behaviors, and needs of people from differing backgrounds and communities (OMH, 2013). However, it is not only spoken language and choice of words that determine the degree to which communication is clear and effective. The meaning attached to regional expressions and pronunciations, observable nonverbal cues, and subtle nuances of tone of voice may be characteristic of one cultural group but unrecognized or not understood by another (OMH, 2013). Culture influences communication and behavior as people interact with others, particularly persons of differing customs, beliefs, races, ethnicities, and religious or social groups (OMH, 2013). Miscommunication is not the result of language alone but may be a combination of spoken language as well as physical and aural cues. Those who are aware of the differences in social, ethnic, and even regional groups are those who understand the differences in the way culture drives communication effectiveness (OMH, 2013). Those who communicate with people who are culturally different from them in a way that respects those differences are considered culturally sensitive or to manifest cultural competence.

Chapter 2 is an overview of research on the cultural sensitivity of primary care departments, which includes OB/GYN for the HMO, a group of medical centers, and how the knowledge of and sensitivity to cultural differences may influence providers' communication with African American women patients. In addition, the chapter includes

a discussion of the literature on the influence of bias on provider communication with patients and how that communication may influence the medical treatment and screening behavior of the latter. This topic has relevance because failure of a healthcare provider to be aware of and to respect cultural differences in communication could lead to healthcare disparities in the treatment and health status of African American women who do not heed the provider's recommendations.

Literature Search Strategy

To find literature on the topic, I used the following search terms: *oral and nonverbal cultural sensitivity and competency, African American women, breast cancer in African American women, race and ethnicity differences in healthcare, healthcare providers, clinicians, culturally sensitive communication, patient/provider communication, patient/physician relationship, provider behavior, patient behavior, barriers, health disparities, breast cancer screening and follow-up, cancer, preventative care, bias, disparity, perceptions, primary care, healthcare providers, physician education,* and *cross-cultural care*. The databases used for this search included ProQuest, AcademicSearchComplete, EBSCOhost, SagePremier, and Medline. I also used the websites of the CDC, AHRQ, CAHPS, and MAPPS. The relevant articles were published between 2002 and 2014. Some older articles are included because of the groundbreaking concepts presented for cultural sensitivity and its relevance to health disparities, improving health initiatives and outcomes, and the development of recent cultural sensitivity theories.

Need for Cultural Awareness

Lack of knowledge of different ways people from different cultures communicate may lead to an inexact or incomplete understanding of information, and in a healthcare setting, lack of clear communication could have dire consequences if the patient is noncompliant with recommendations for healthcare screening, further tests, or treatment. Researchers have determined that the effects of inexact or incomplete communication can affect positive health outcomes. Likewise, culturally sensitive providers are thought to aid in reducing health disparities by positively changing patient health behaviors through clear communication that respects the differences between the provider's ethnicity or culture and that of the patient (Blair et al., 2013).

Respect for and understanding of the patient is a component of cultural sensitivity. How the provider views, understands, and involves the patient in managing his or her health is one component of respect (Brusin, 2012). Using CAHPS as a measure for providers in The Colorado Permanente Group, Hardee and Kasper (2008) reported on providers with various patient satisfaction ratings. Patients who believed the doctor treated them with respect ranked highest. The report defined *respect* as including the patient in ideas to solve health issues and providers having a nonjudgmental attitude regardless of the race, ethnicity, or age of the patient. Hardee and Kasper (2008) concluded that providers who have cultural awareness and an understanding of their patients can improve patient/provider communication, a factor that could result in healthier patients and better medical outcomes (Brusin, 2012). Some reports have

suggested that positive patient/provider relationships positively influenced behaviors linked to compliance with screening and treatment recommendations (Kagawa-Singer, Dadia, Yu, & Surbone, 2010). The patients of providers who deliver culturally sensitive care and try to understand and respect the values, preferences, and beliefs of their patients generally have better health outcomes (Brusin, 2012).

Despite the significance of culturally sensitive care, there has been poor progress in at least 40 years to advance the understanding of culture in health organizations, including the delivery of care by providers (Kawgawa-Singer et al., 2010). Kawgawa-Singer et al. (2010) noted that provider communication skill is vital for influencing patient behavior so that the patient acts positively on recommendations to undergo testing or to change personal health habits. An awareness and knowledge of the patient's culture is essential to clear communication and information from the healthcare provider.

The way a provider communicates with patients is especially important for compliance with breast cancer screening. Meguerditchian et al. (2012) found that the way a provider communicates with a patient might influence the patient's decision to have breast cancer screening. In a cohort study of 413 physicians from 1993 to 1996, with a follow-up in 2006 of approximately 33,000 women, the researchers examined the association between provider communication skills and patient compliance with having recommended breast cancer screening. The cultural sensitivity of healthcare providers may influence patient satisfaction with the provider visit, which in turn may influence general patient behaviors as well as whether the patient acts on recommendations of the provider. The findings suggested the need for further examination to more clearly explain

the relationships between provider cultural sensitivity and patient health (Meguerditchian et al., 2012).

Cultural sensitivity has also been linked to patient satisfaction in African American patients, which can lead to better adherence to health recommendations and improved health outcomes (Tucker et al., 2014). Tucker et al. examined data from 298 primary care patients self-identified as African American who completed anonymous patient satisfaction questionnaire surveys about their provider experience. The results were that patients did not perceive that the lack of cultural sensitivity/competency and respectful communication were contributors to health disparities (Tucker et al., 2014).

In contrast to Tucker et al.'s (2014) study, Nielsen, Wall, and Tucker (2016) used the PC-CSHC model to examine the relationship between patient-perceived cultural sensitivity and treatment adherence and found that cultural sensitivity can create health barriers. The study was a subset of the larger study of the measure of patient satisfaction for African American patients based on the culturally sensitive communication of their providers. Questionnaires from the larger study were modified and translated into Spanish for the smaller study. The results of the study revealed that provider cultural insensitivity and low adherence to health recommendations was not only a factor of the language barrier, but of a lack of understanding of the culture of the Latino population (Nielsen et al., 2016).

The interaction between providers and Latino patients who speak and understand English and those who do not is another area where a provider's cultural sensitivity influences perceptions and understanding (Becerra, Androff, Messing, Castillo, &

Cimino, 2015). In a 2007 study using data from the Pew Hispanic Center, Becerra et al. (2015) included 4,013 Latinos, 2,783 foreign-born and 1,220 born in the United States. Interviews were conducted in Spanish and English. The researchers concluded that Latino patients did not trust the health information communicated by the provider and perceived the care provided was of less quality than that provided to a Caucasian patient (Becerra et al., 2015). Whether participants spoke English, Spanish, or a mixture of those languages, they all perceived some indifference in their treatment from Caucasian providers and attributed those differences to their ethnicity. These findings echo those of other studies and also suggest a lack of cultural awareness of providers (Becerra et al., 2015). Becerra et al. concluded that the level of acculturation of Latino immigrants and those born in the United States should signal how a provider communicates with them.

Implicit or Unconscious Bias of Providers and Health Disparities

Unlike explicit bias, which is reflected in the attitudes or beliefs that someone expresses at a conscious level, implicit bias is the reason only some recommendations are made. It is the cause of displaying various stereotypical attitudes and behaviors that result from subtle cognitive processes that operate at a level below conscious awareness or intention. The underlying attitudes and stereotypes responsible for implicit bias are those beliefs or simple associations that a person makes between an object and its evaluation that "are automatically activated by the mere presence (actual or symbolic) of the attitude toward the object shown on the screen" (Dovidio, Gaertner, Kawakami, & Hudson, 2002, p. 94). People may declare themselves unbiased toward those of other races or ethnicities

because they choose to be fair-minded; however, if they have not known people unlike

them, their opinions may be based on hearsay.

The reason for implicit bias is that prejudice and stereotyping are often

unconscious (Dovidio & Fiske, 2012). Bias can be explicit (conscious) or implicit

(unconscious), but disparities in care are often linked to implicit bias (O'Reilly, 2013).

Provider biases also create cultural barriers, a communication block that could contribute

to the delivery of low quality care (Michalopoulou, Falzarano, Arfken, & Rosenberg,

2009). O'Reilly (2013) suggested that when providers are rushed, the probability of

unconscious bias increases. Primary care providers usually have more patients than

specialists have, but they are expected to maintain their current time with patients despite

the numbers or the needs of the patient. Although providers are trained not to base

decisions on their emotions, the demand to examine more patients in a shorter time might

result in unconscious bias affecting those decisions. Providers' awareness of their own

bias, conscious or unconscious, through self-awareness is another important component

of cultural sensitivity (Kodjo, 2009).

Blair et al. (2013) studied the potential implicit biases of 134 clinicians using the

implicit association test, one that measures the speed at which a person responds to

negative or positive words when shown the faces of different ethnicities. They showed

photos of 2,908 patients: 612 African Americans, 1,437 Caucasian, and 859 Latinos

(Blair et al., 2013). Two-thirds of the providers who treated African American patients

exhibited greater implicit bias toward them than when they assessed the treatment of

Caucasian and Latino patients. The study consisted of different ethnicities; however,

results suggested that a perception of bias was higher in African Americans (Blair et al., 2013). The researchers concluded that providers with high levels of implicit bias lacked cultural sensitivity because they failed to place the patient in the center of the visit, a factor that could lead to jeopardize health outcomes (Blair et al., 2013). They further concluded that increasing provider awareness could aid in improving how providers address their biases, improvement that could increase patient compliance with recommendations for health screening.

It is not known whether implicit bias necessarily leads to poor cultural sensitivity, as the former does not necessarily predict the latter. However, those who manifest a lack of cultural sensitivity may either harbor biases or lack concern for the needs and feelings of patients. Although I did not measure cultural sensitivity in this study, available information suggests that some providers seem to be unaware of their biases when treating patients from ethnic groups different from their own.

According to Levine and Ambady (2013), unconscious bias is nonverbal behavior on the part of the provider that may lead to poorer health outcomes in minority patients. Levine and Ambady examined the race, nonverbal communication of providers, and Caucasian effects on the perceptions of the minority patient. If the patient perceived the provider was biased, the patient probably did not trust that provider (Levine & Ambady, 2013). Patients also perceived anxiety of the provider as prejudice and stereotyping (Levine & Ambady, 2013). Fewer African American patients, compared to Caucasian patients, trusted the provider, believed the provider listened to their concerns and communicated well, and treated them with respect. The provider who is not aware of his

or her lack of cultural sensitivity when providing care to minority patients may unconsciously influence worse patient health outcomes (Levine & Ambady, 2013).

Levine and Ambady (2013) also described how patients from non-Western backgrounds show emotions differently from Caucasian providers. Patients from East Asian cultures, for example, were found to be more focused on being calm, and Latino and Native American patients were unlikely to make eye contact during conversations (Levine & Ambady, 2013). Levine and Ambady also suggested that providers unaware of cultural differences might have concluded those patients lacked interest in their health information, but they also concluded patients whose providers were culturally sensitive and who could interpret patients' nonverbal communication often had better patient health outcomes.

Implicit racial and ethnic bias in health care is a recurring theme in the literature. Manfredi, Kaiser, Matthews, and Johnson (2010) described how disparities with treatment decisions for hypertension of ethnic groups were less successful when compared to Caucasians in America. The researchers reviewed studies of primarily Latino patients that dealt with implicit bias and the effects it had on treatment decisions. The most obvious bias was manifested among Caucasian male physicians when interacting with non-Caucasian patients (Manfredi et al., 2010). Manfredi et al. also examined African American physicians, revealing that some displayed implicit bias toward Caucasian patients, a bias that was attributed to their lack of cultural sensitivity.

Primary care providers may have an advantage over specialists because of the greater frequency of their patients' appointments (Mejia de Grubb et al., 2015). In the

spring of 2013, a 13-question survey was sent to first- through third-year residents in primary care, occupational medicine, and obstetrics and gynecology, asking if they were prepared to provide care and communication to a person whose beliefs conflicted with their own. They were also asked whether understanding the culture of the patient was important and if they understood the culture of the patient population they were preparing to serve (Mejia de Grubb et al., 2015). Of the 78 responses (70.9%), primary care residents reported having the most difficulties communicating with people from different cultures when discussing and recommending cancer screenings. The study concluded that primary care physicians might need additional training in cultural sensitivity and emphasized the need for manifesting cultural sensitivity during patient encounters to aid in decreasing cancer health outcome disparities.

Micro-aggression as a result of the implicit bias of health care providers can also affect physical as well as mental health outcomes. Walls, Gonzalez, Gladney, and Onello (2015) studied micro-aggression (implicit bias) among physicians and the impact on mental health for adult American Indians suffering from Type 2 diabetes. Using a participatory research approach, the researchers assessed associations between micro aggressions and three behavioral health outcomes: depressive symptoms 2 weeks prior to the survey, depressive symptoms for self-reported heart attacks, and depressive symptoms for patients who were hospitalized within the past year (Walls et al., 2015). A total of 218 patients recruited from two Native American health clinics were included in the study (Walls et al., 2015). The results showed a negative association between micro aggressions in the health care setting and the behavioral health outcomes that were

examined (Walls et al., 2015). The results also indicated that one in three patients who participated in the study believed their health provider manifested implicit bias (Walls et al., 2015), but the results did not include whether patient health was affected.

Patients' Perceptions of Providers' Cultural Sensitivity

Patient perceptions are a vital part of assessing a provider's cultural sensitivity. A study by Johnson, Saha, Arbelaez, and Beach (2004) of 6,299 adult participants included ethnicities described as 3,488 Caucasian, 1,037 African American, 1,153 Hispanic, and 621 Asian. When the patients were interviewed after a visit with the provider, the African Americans believed the provider lacked cultural sensitivity, a trait they perceived as bias. This factor, they concluded, led them to experience less satisfaction with the visit than Caucasian patients did. This was one of the premier studies of cultural sensitivity of the provider from the perception of the patient (Johnson et al., 2004).

Provider satisfaction is linked to a patient's perception of a provider's cultural sensitivity. Another study of patients from four medical clinics with a total of 322 African American and 68 Caucasian patients concluded that lack of provider cultural sensitivity resulted in African American patients reporting lower satisfaction with the provider visit than Caucasian patients did (Michalopoulou et al., 2009). Similarly, Weech-Maldonado, Hall, Bryant, Jenkins, and Elliott (2012) analyzed data about patient/provider satisfaction with visits to 1,509 physicians and concluded that those who expressed dissatisfaction with the visit believed that providers lacked cultural sensitivity. Weech-Maldonado et al. (2012) also used the patient-driven assessment of providers and CAHPS to measure results and reach their findings. The providers whose patients

believed they lacked cultural sensitivity were rated 15 points lower than providers whose patients perceived they were culturally sensitive (Weech-Maldonado et al., 2012). The study also showed an association between less satisfaction with the visit and less satisfactory patient outcomes (Weech-Maldonado et al., 2012). The results further suggested that, conversely, sensitive providers might positively influence health outcomes by influencing patients to follow their instructions (Weech-Maldonado et al., 2012).

Studies have been conducted to determine if cultural sensitivity aids in communicating health information. Mott-Coles (2013) conducted a study of 14 providers who treated African American and Latina women diagnosed with breast cancer to learn whether culture was considered when communicating the diagnosis and information about breast cancer to the patient. The responses from the providers were measured against literature describing patients' perceptions of providers. Providers who treated African American and Latina women appeared to expect the patient to follow their communication style rather than the provider presenting the information in ways that considered the needs of the patient (Mott-Coles, 2013). This led the researchers to conclude that providers in this study did not communicate information with cultural sensitivity, as only one of the providers of the 14 indicated that in practice he or she considered the cultural beliefs of the patient when communicating health information (Mott-Coles, 2013). The information examined by Mott-Coles (2013) for the study also revealed the perceptions of the patients and how the communication of the provider influenced their choices and actions.

The effects of implicit bias can also result in different treatment of and communication with minorities with the same medical conditions as Caucasians, as racial and ethnic minority patients were less likely to have surgery for oral cancers than Caucasian patients were (Dovido & Fiske, 2012). Kagawa-Singer et al. (2010) asserted that providers should recognize that, although each ethnic group has a unique set of characteristics and health concerns, each needs the same quality of treatment. Another important aspect of the study was whether all groups are given information in a way that was sensitive to their culture, language usage, and understanding (Kagawa-Singer et al., 2010).

Differences in communication of primary care providers with different ethnic groups were reported in a study by Burt, Lloyd, Campbell, Roland, and Abel (2015) in which 1.5 million respondents evaluated the health communication delivery of primary care physicians to their ethnically diverse patient population. In this study conducted from 2012-2104, the Caucasian British population dominated the number of returned surveys at 1.3 million or 82% (Burt et al., 2015). The other groups--African American, Asian, Pakistani, Chinese, Arab, or other--were approximately 1,800 respondents and comprised 2-3% of the respondents (Burt et al., 2015). African Americans and respondents of Caribbean descent reported the perception of more negative experiences with providers compared with their Caucasian counterparts and believed that providers treated them differently from Caucasian British patients. The negative perception of communication was expressed by all minority ethnicities who responded, especially females (Burt et al., 2015). As a result of this study, the primary care providers were sent

to cultural sensitivity training (Burt et al., 2015). This study is believed to be one of few to evaluate age, gender, ethnicity, and the effects of communication between the patient and the primary care provider (Burt et al., 2015).

Studies have been conducted to determine if a provider has had implicit bias when treating a patient because of race. In a study by Dovidio and Fiske (2012), when physicians were asked to prescribe treatment based on clinical information without knowing the race or ethnicity of the patient, the treatment ordered for Caucasian and African American patients was similar. However, a meta-analysis conducted by Dovidio and Fiske (2012) revealed that when race was introduced into the clinical information to prescribe treatment, disparities occurred, and doctors were less likely to recommend that African Americans have surgery to treat oral cancers compared to Caucasians and other ethnicities. The same bias was reported in a study by Smedley, Stith, and Nelson (2003), in which patients of different ethnicities with the same heart condition were given different treatments. When the physicians were made aware of the actions, some rationalized that African American patients, in a view based on their experience, were less likely to adhere to treatment recommendations. Based on the PC-CSHC Model, those providers lacked cultural sensitivity (Tucker et al., 2011).

Some studies have suggested that providers might be unaware of the perception that they are manifesting their cultural biases and need to develop an awareness of how patients interpret their communication. Stone and Moskowitz (2011) found that when providers lacked cultural sensitivity, their interactions created negative reactions in patients, as it caused people to believe they were being treated as stereotypes. This

reaction, in turn, negatively influenced treatment evaluation and interaction, particularly with minorities. The conclusion was that providers with implicit bias manifested a lack of cultural sensitivity and were perceived as lacking interest in the patient. Similarly, Like (2011) reported that underlying provider bias negatively affected patient evaluations. Tucker et al. (2014) also noted that patient dissatisfaction played a role in adherence to health recommendations and negative effects of health outcomes.

Implicit provider bias may occur during racially discordant medical visits and is thought to affect patient outcomes. A study by Hagiwara, Slatcher, Eggly, and Penner (2016) examined the effects of unconscious or implicit bias has when the provider and patient are not the same ethnicity. The study was focused on words used by the non African American provider with an African American patient (Hagiwara et al., 2016). The study consisted of 14 non African American physicians (12 Asians and two who identified as Caucasian), and 178 self-identified African American patients (Hagiwara et al., 2016). Physicians and patients completed a pre- and post- interaction questionnaire, and the interaction was video recorded. The results suggested that when the patient is African American, non-African American physicians used the first person plural pronoun *we* and emotion-related words if he or she had implicit bias (Hagiwara et al., 2016). According to the post interaction questionnaire completed by African American patients, when providers used the first person plural (we) with African American patients, the latter reacted negatively (Hagiwara et al., 2016). This illustrates how perceived negative communication affects outcomes. Studies have also illustrated that providers with implicit bias assume African American patients are less likely to comply with health

recommendations, a factor that might contribute to poorer health outcomes (Hagiwara et al., 2016). The researchers concluded that more study is needed to define further how implicit bias affects a provider's choice of words or whether a non Caucasian provider communicates with African American patients differently from the way he or she does with a Caucasian patient (Hagiwara et al., 2016).

Latino patients who preferred English in interactions with health care providers and those who preferred Spanish in those interactions were the topic of an examination by Nielsen, Wall, and Tucker (2015). Questionnaires from 194 English-preferring and 361 Spanish-preferring patients revealed that regardless of the language the provider used, both groups followed treatment recommendations at about the same rate when they perceived the provider to be culturally sensitive to them (Nielsen et al., 2015).

Cultural Awareness Through Sensitivity Training

Some researchers have found that effective training in cultural sensitivity might decrease implicit bias. A Brusin (2012) meta-analysis of provider behaviors that measured the cultural sensitivity initiative of a hospital providing care for children revealed significant implicit bias. In this 2-day training, 2,000 hospital staff exhibited different tones of voice, body language, and unintentionally may even have conveyed their uneasiness to patients (Brusin, 2012). Another study identified in the meta-analysis of Brusin (2012) was of primary care providers. Through a pre- and post-test methodology, the results revealed only 45% of the providers answered the pretest questions correctly before the training. The percentage increased to 95% after they completed a course designed to increase cultural sensitivity. A weakness of the study,

however, was lack of follow-up to determine whether recognition of their bias led to greater sensitivity to the patient as an individual rather than what appeared to be seeing him or her as a member of an ethnic group with consistent characteristics.

Developing cross-cultural skills through multicultural training for providers is one method thought to aid in reducing implicit bias (Burgess, Van Ryn, Dovidio, & Saha, 2012). Kelly (2011) also suggested that cultural sensitivity training might enable a provider to understand how he or she might decrease health disparities among various ethnic groups. Most models, however, found that providers had used self-evaluation to assess their cultural sensitivity, a process that is an inexact way of learning a person's own biases if he or she is unaware of them, particularly since the provider must consider input from the patient. Without having knowledge of the opinions of the patient, a provider could not be objectively aware of or determine whether his or her communication reflected bias.

Not recognizing and so not correcting bias shown by some medical providers was revealed in a study by Tummala-Narra, Singer, Li, and Esposito (2012), who stressed the importance of multicultural training for mental health providers. Using Qualtrics, an online survey program, 196 participants from the fields of psychology, social work, and psychiatry responded to the 21-item California brief multicultural competence test that uses a Likert-like scale for responses. The results of the test suggested the need for provider training to improve cultural sensitivity (Tummala-Narra et al., 2012). Although some institutions used the results to raise provider awareness of their cultural sensitivity or lack of it, there was no patient evaluation after the training to determine whether

providers had been effective communicating with minorities. As a result, there was no measure of whether the results were used to improve patient satisfaction through enhanced communication effectiveness with them. Nonetheless, this factor did support the assertion that providers of mental health services may need to increase their cultural sensitivity when communicating with patients of another culture.

Studies have demonstrated how bias and the lack of cultural sensitivity reduce healthcare quality. In a study by Michalopoulou et al. (2009), cultural barriers and biases were found to be possibly contributing to lower quality of care. African American patients from four medical clinics in metropolitan Detroit, Michigan, completed a survey to determine their perceptions of the cultural sensitivity of their healthcare providers. The data revealed that unconscious bias caused by cultural differences might affect provider communication with minority patients, bias that could negatively affect patient outcomes because of their decision not to follow recommendations for additional tests or treatment (Michalopoulou et al., 2009). African American women are more frequently diagnosed with later stages of cancer than their Caucasian counterparts if they have not followed screening and follow-up recommendations after screening, which was the focus of this study (ACS, 2014).

Wong et al. (2015) described the importance of health organizations in understanding the culture of the population they serve by designing health initiatives to address health disparities, including cultural sensitivity training for physicians. Wong et al. (2015) noted that infant mortality is two to three times higher in African Americans compared to the overall population and that there are differences in treatment of African

American and Latino populations who are diagnosed with diabetes. Wong et al. (2015) concluded that when providers were trained to present information in a culturally sensitive manner, patients were more likely to comply with their recommendations. One example was the need for Asian American parents to recognize the importance of infant vaccination for hepatitis, a condition that is prevalent in Asian infants. Asian parents responded to providers who were considered culturally sensitive with almost complete compliance by having their infants vaccinated following the information that it was necessary (Wong et al., 2015).

In a systematic review, Rocque and Leanza (2015) confirmed that culturally sensitive communication between primary care physicians and patients creates a significant part of patient compliance with health recommendations and improves care. A secondary study included 57 articles and 1,852 patients in North America and Europe between 1995 and 2015 (Rocque & Leanza, 2015). When communication from the providers was perceived as negative, patients believed providers did not listen, did not present necessary health-related information, and that the quality of their care was poor. Different ethnicities were included in the study. Of note is that Muslim patients perceived the communication and treatment from a primary care physician was different because of their religious attire (Rocque & Leanza, 2015), and African American patients perceived communication from a primary care provider made them believe they were being stereotyped as unintelligent, lazy, and poor (Rocque & Leanza, 2015). In both scenarios, the perception of negative communication between the provider and African American and Muslim patients resulted in lower compliance with health and treatment

recommendations. On the other hand, of those who perceived the provider to be culturally sensitive, the patient was more likely to comply with health and treatment suggestions (Rocque & Leanza, 2015).

Training and education for cultural sensitivity has been shown to improve communication (Moshkovich et al., 2015). Compliance with cervical cancer screening was examined in racial and ethnic minority patients because achieving and monitoring compliance is a requirement of the Affordable Care Act (Moshkovich et al., 2015). Although cervical cancer screening improved overall, cancer-screening rates among minorities improved minimally, with only 58% of minority patients having cervical cancer screenings (Moshkovich et al., 2015). When providers had cultural sensitivity training to improve outcomes for the population they served, compliance with cervical cancer recommendations improved (Moshkovich et al., 2015). Only 41% of patients of providers without training complied with cervical cancer screening recommendations compared with 79% compliance among patients of providers who had had the training (Moshkovich et al., 2015), a significant difference.

Communication Bias and Health Information

One of the factors influencing provider cultural sensitivity is awareness of differences in communication with ethnicities other than one's own (Campinha-Bacote, 2002). A study by Palmer, Samson, Triantis, and Mullan in 2011 consisted of providers using a web-based course to aid in raising cultural awareness of African American women to increase their compliance rates for breast cancer screening. Pretests determined the level of cultural sensitivity of 103 providers in Montgomery Cares, a program for

uninsured adults in Montgomery County in Maryland, with the analysis revealing

communication bias in 94% of the providers. These providers had not recommended

breast cancer screening for their African American patients because they perceived their

inability to effectively communicate with them. The conclusion suggested the need for

improved communication of healthcare information because African American women

have disproportionately higher mortality rates from breast cancer despite the lower

incidence of the disease in that population than in Caucasian women. The physicians in

the study did not perceive their actions as discriminatory, yet their communication with

African American women patients may have contributed to health disparities (Palmer et

al., 2011).

The cultural differences between providers and patients were also shown to be a

factor contributing to poor communication in studies. The research conducted by Shaw,

Huebner, Armin, Orzech, and Vivian (2008). Gordon, Street, Sharf, and Soucheck (2006)

also examined provider/patient communication and found that providers from a race

different from the patient did not relay the same amount or kind of information about

pulmonary nodules or lung cancer to their different race patients when controlled for age,

gender, marital status, clinic site, and health status. The sample ($n = 137$) was derived

from two clinics and one hospital and consisted of predominantly male patients, 30

African Americans and 107 Caucasians, with varied education levels within each group.

The stated purpose of the study was to learn if provider information given to patients of

different races with similar conditions was different. The findings indicated providers

without culturally sensitive communication gave different degrees of details of information to the members of the two groups.

One of the three factors thought to increase provider communication with patients is the attitude the provider manifests towards the patient. Analysis of the taped visits in the Gordon et al. (2006) study suggested Caucasian providers did not understand the culture of African American patients and provided less information than they did to Caucasian patients. Additionally, Meguerditchian et al. (2012) examined the records of 6,667 physicians from 1993 to 1996 to determine the degree of patient adherence with a recommendation for breast cancer screening. In this cross-sectional study of 1,509 Medicaid patients using the CAHPS, the participants were 30.8 % Caucasian, 40.4% Hispanic, 24.9% African American, and 4.0% other. African Americans reported perceptions of discrimination because of race, and some perceived that providers treated Medicaid patients differently from the way they treated those with private insurance or Medicare (Weech-Maldonado et al., 2012), which revealed a different kind of cultural bias.

Culturally sensitive communication is linked to breast cancer screening compliance. Garcia et al. (2012) studied the factors that influenced mammography use and breast cancer detection among Mexican American and African American women. The study consisted of 670 women with breast cancer: 388 Mexican American and 282 African American (Garcia et al., 2012). Data on mammography use, detection, and delay in seeking treatment were collected using medical records and questionnaires. Findings in the study suggested Mexican American and African American women were more

compliant with a recommendation for mammography screening and follow-up when culturally sensitive communication from the provider explained the benefits of screening and the importance of breast health awareness (Garcia et al., 2012).

Studies have shown differences in communication of providers to different ethnicities, age and gender lead to health disparities. A study of interest conducted between 2012-2013 and 2013-2014 in England by Burt, Lloyd, Campbell, Roland, and Abel (2016) described the variance of primary care physician/patient communication by ethnicity, age, and gender of the provider. The data were derived from a composite score of five survey items to evaluate the provider from the perceptions of patients. Of 1.8 million in the study, 1.5 million completed the five survey items about provider-patient communication. Of the respondents, 1.3% (21,131) were African, .9% (13,175) were African American, and .4% Caribbean reported themselves as non-Caucasian (Burt et al., 2016). Asians and other ethnic groups combined comprised the largest non-Caucasian group (5%), and more women responded than men. Although language was often a barrier, patients perceived that language differences minimally affected their feelings of culturally insensitive communication (Burt et al., 2016). The study concluded non-Caucasian patients perceived they received care of lesser quality when compared to Caucasian patients, and the data suggested that insensitive communication resulted in health disparities (Burt et al., 2016).

Communication Bias

Studies indicate providers that lack cultural sensitivity often give African American patients less information. To compound the problem of cultural bias in

communication, Manfredi et al. (2010) reported that African American patients are typically given less information because of reduced engagement of providers from a different culture who may lack the communication skills to talk with them candidly and comfortably. In a study of 492 patients, 248 African American and 244 Caucasian, Manfredi et al. (2010) reported providers were less likely to offer the name of a cancer expert or a cancer center to patients of a different culture from their own. Manfredi et al. (2010) also found that the lack of African American patient trust in providers led to patient reluctance to discuss their health concerns during provider visits.

A Meguerditchian et al. (2012) study result also showed that provider cultural sensitivity affected which patients were given information about breast cancer screenings and pointed to lack of cultural sensitivity in providers as one of the causes for the differences in suggested treatment options. In addition, a finding of a Smedley et al. (2002) study was that some providers even suggested different treatment options for patients with the same medical condition. The report attributed some of the health disparities that negatively affected minorities to the lack of culturally sensitive provider communication. Another reason given was the provider's belief that a patient's ethnicity might reduce the likelihood of their understanding those recommendations or complying with them.

Crenshaw et al. (2011) examined 29 providers and a mix of 45 clinician educators and researchers using random grouping for four sessions. It was found that participating in the education sessions increased provider awareness of how communication deficiencies affect health outcomes. In another study, Betancourt and Green (2010)

suggested that cultural sensitivity training for providers is the foundation for improving health outcomes. The researchers also suggested that a provider who lacks cultural sensitivity might stereotype patients and not give them information that might directly affect their health outcomes.

An additional problem that affects communication is that not all providers encourage African American women to seek breast cancer screening, the focus of a study by Gorin, Ashford, Lantigua, Desai, Troxel, and Gemson (2007) of African American and Hispanic women living in the New York boroughs of Manhattan and the South Bronx. The participants were selected using census data and a randomized selection of primary care physicians in those boroughs. The physicians were evaluated using pre- and posttests of the effectiveness of their communication with and presentation of instructions to the women. The 192 physicians in the study manifested a statistically significant ($p =$ .05) improvement in communication when they followed the ACS guidelines for educating patients about breast cancer screening, clinical breast examinations, and how to perform breast self-examinations (Gorin et al., 2007).

Patients with providers who are perceived as having culturally sensitive communication manifest better compliance with breast cancer screening. Meguerditchian et al. (2012) found that providers who learned how to communicate better with their patient population increased patient compliance with recommendations for breast cancer screening. Physicians were given information about the population and were instructed in ways to increase engagement of Hispanic and African American women using culturally sensitive methods. To assess if the education aided in understanding their patients,

physicians were given another test after the instruction. Of these participants, 77%

viewed the education sessions as helpful because the results increased their own cultural

awareness (Meguerditchian et al., 2012). They also believed they had improved their

treatment of and communication with African American and Hispanic patients.

Other researchers had similar results of improved treatment and communication

with African American and Hispanic patients. Kagawa-Singer et al. (2010) determined

that providers with an awareness of cross-cultural communication or the ability to

communicate with cultural sensitivity to different ethnicities improved cancer patient

adherence to follow-up recommendations for treatment. The Meguerditchian et al. (2012)

study of 413 physicians from 1993 to 1996 and a follow-up in 2006 showed that patient

noncompliance was caused in part by the providers' not explaining the importance of

breast cancer screening. This failure was attributed to providers erroneously believing

that fully informing African American women about their need for screening would not

influence their behavior. The result of a telephone study conducted by Johnson et al.

(2004) was that the cultural sensitivity of a provider is vital to improving health outcomes

and reducing disparities. According to Saha, Beach, and Cooper (2008), the core of

cultural sensitivity is a provider's understanding of the beliefs and values of a patient and

communicating information in a way that reflects their respect for those beliefs.

In a study of underutilization of breast cancer screening among immigrants,

Wallace, Torres, Beltran, and Cohen-Boyar (2014) interviewed primarily Somali and

Latina women participants in the languages spoken by those populations. Among the

reasons offered for lack of compliance with breast cancer screening recommendations

was the providers' lack of cultural sensitivity (Wallace et al., 2014). Later cultural

sensitivity training of providers along with using community health workers aided in

bridging the acknowledged cultural sensitivity gap and improved breast cancer screening

compliance of these populations (Wallace et al., 2014).

Provider Cultural Sensitivity and Health Disparities

Breast cancer screening is not the only health condition that improved if the

provider had culturally sensitive communication. Traylor, Schmittdiel, Uratsu, Mangione,

and Subramanian (2010) described how culturally sensitive provider/patient relationships

were factors that influenced patient compliance with recommended monitoring of blood

glucose. This study of 109,745 patients and 1,750 providers employed a logistic

regression design (Traylor et al., 2010). The findings indicated that the ethnicity, race, or

culture of providers and patients negatively affected efforts to communicate physician

recommendations and led to lower compliance, particularly those about reducing and

monitoring blood glucose levels. Caucasian patients with Caucasian providers were not

similarly affected.

In a 2008 study, Teal and Street reviewed components of cultural sensitivity

revealed by ways providers communicated with patients. The process they followed was

to compare the provider/patient encounter with models of accepted culturally sensitive

communication. The Teal and Street (2008) conclusion was that information from a

provider who considers the patient's culture influences behaviors that increase patient

understanding of their health issues. The findings are similar to theories examined by

Gallegos et al. (2008) that promoted the need for providers to develop cultural sensitivity

to reduce health disparities. These researchers concluded the need to further investigate how provider lack of cultural sensitivity increased health disparities across medical disciplines.

The analysis of Singer et al. (2010) also emphasized the need for increasing physicians' cultural sensitivity to reduce health disparities among their patients. The analyses included increased ACS breast cancer goals to reduce cancer deaths by 50%, cancer incidence by 25%, and to improve the life of cancer patients. According to statistics published in 2013 from *Surveillance, Epidemiology, and End Results*, adjusted cancer mortality rates from 1996 to 2010 differed for African American and Caucasian women, with the mortality rate for African American women decreasing from 102.73 to 88.16 deaths per 100,000 and the mortality rate for Caucasian women decreasing from 95.01 per 100,000 to 68.12 per 100,000.

A provider's awareness of the connection between patient health outcomes and cultural sensitivity is essential in treating minority patients if healthcare professionals are to reduce disparities. The Michalopoulou et al. (2009) study consisted of 322 African American patients using the perceived cultural competency scale (PCCS) that measures patient perceptions, physician cultural awareness, and physician skills. The results showed that if the provider had a positive combination of cultural awareness, skill, and knowledge, the patient was more satisfied with the visit.

Paez, Allen, Beach, Carson, and Cooper (2009) examined the records of 123 patients and 26 providers of primary care using the PCCS in a study of 15 Baltimore medical practices in low- and middle-income communities. The patients of physicians

with higher sensitivity scores had better health outcomes than those of physicians whose

PCCS scores indicated they were not sensitive to the differences between their own

cultures and those of their patients.

Purnell, Thompson, Kreuter, and McBride (2015) studied the disparities in cancer

screening by race, ethnicity, and socioeconomic status, using communication tools of

behavioral economics that consisted of judgment, decision-making, and choice

architecture. In behavioral economics, judgment is the subjective assessment of achieving

an outcome (Purnell et al., 2015). If the interaction between the provider and patient is

positive toward cancer screening, the patient is more likely to comply with screening

recommendations. Purnell et al. (2015) also noted that to ensure the patient understands

the health message, the provider should deliver the message in a culturally sensitive

manner to increase patient awareness of the benefits of screening.

Levin-Zamir et al. (2014) explored the need for culturally appropriate

communication from providers and the written information for diabetic Arab patients in

Israel. Culturally inappropriate communication and how the information was distributed

were reasons identified as a barrier to compliance with diabetes interventions (Levin-

Zamir et al., 2014). The study consisted of four groups of 13-15 Arab patients with Type

2 diabetes separated by gender and 10 primary care physicians (Levin-Zamir et al., 2014).

Patients did not perceive diabetes as an illness with serious consequences, despite

literature and communication with their providers (Levin-Zamir et al., 2014). Participants

expressed satisfaction with their providers; however, the lack of compliance with diet and

medication recommendations suggested the need to learn the reason for noncompliance

(Levin-Zamir et al., 2014). The researchers learned that although professional providers had developed evidence-based interventions, they had failed to tailor the information or communication outreach to the Arab population, which requires inclusion of not only the patient, but his or her family and community. The lack of cultural awareness of family and environmental factors resulted in noncompliance with health recommendations (Levin-Zamir et al., 2014).

Like others who studied the effects of culturally sensitive communication on health disparities, Tucker et al. (2011) found similarities in their research with respect to cultural sensitivity of providers and adherence to health recommendations. The Tucker et al. (2011) research concluded links exist between perceived cultural sensitivity by patients and adherence to provider-recommended medical recommendations such as screening exams. Additionally, the PC-CSH model advocates that providers who focus on keeping the patient at the center of care are providing culturally sensitive care are supporting a practice that yields potentially greater adherence to health recommendations than methods that ignore those aspects (Tucker et al., 2014).

Theoretical Foundation

Measuring Provider Cultural Competence

Campinha-Bacote (2002), who created the foundation for the Purnell model, developed another model to measure provider cultural sensitivity in healthcare delivery. Cultural sensitivity, according to Campinha-Bacote (2002), is an "integration of cultural awareness, knowledge, skill, encounters, and desire" (p. 182). Another model placed cultural sensitivity in the four categories of cultural action, sensitivity, awareness, and

knowledge (Sperry, 2012, p. 312). Both models of measurement explored the importance of the need for providers to understand and practice cultural awareness, knowledge, and skills to positively influence health outcomes in minorities. The models used independently do not cover all measurements needed to raise awareness of provider cultural sensitivity; however, the components of each model include factors that should lead to raised provider cultural sensitivity and improved patient compliance with screening and follow-up recommendations.

Models for Increasing Cultural Competence and Sensitivity

The Campinha-Bacote model (2002) described how the five elements of the desire to understand different cultures—cultural desire, awareness, knowledge, skills, and encounters—influence health outcomes of patients (p. 182). This social work-based model described the process as ongoing and suggested methods to retain cultural sensitivity. The Culhane-Pera model (1997) also focused on the education needed to become culturally sensitive, but neither model used patient feedback to determine cultural sensitivity (Kelly, 2011). Rather, they used self-evaluation through testing to make that determination.

The study of perceived discrimination by Weech-Maldonado et al. (2012) presented results linking improved health outcomes because of an increased awareness of cultural sensitivity. Provider awareness improved communication, a factor that in turn resulted in the ability to influence health behaviors of the patient. One method to determine how a provider should communicate to the patient is to ask the patient. This was different from the previous method of the provider performing a self-

evaluation. Survey data from the Weech-Maldonado et al. (2012) study, which consisted of a telephone survey of 1,509 randomly sampled Medicare recipients in Florida, aided in developing an educational intervention, with the researchers concluding there was a need for providers to achieve cultural sensitivity for effective communication across cultures.

The PC-CSHC model is one of few that use patient feedback (Tucker et al., 2013) in addition to education of providers to measure cultural sensitivity. I used patient feedback to aid in determining if cultural sensitivity of the provider is associated with patient compliance with breast cancer screening and follow-up. The primary difference in the several evaluation models is how to determine whether a provider is a culturally sensitive communicator that influences patient adherence to health and treatment recommendations (Tucker et al., 2013). Saha and Beach (2008) evaluated the historical evolution of cultural sensitivity of providers and concluded that models that include patient feedback and place the patient at the center of an encounter increase positive health outcomes (as cited in Tucker et al., 2013). Figure 1 is an illustration of the PC-CSHC Model used for adherence to health recommendations such as medication and adherence to dietary orders (Tucker et al., 2013).
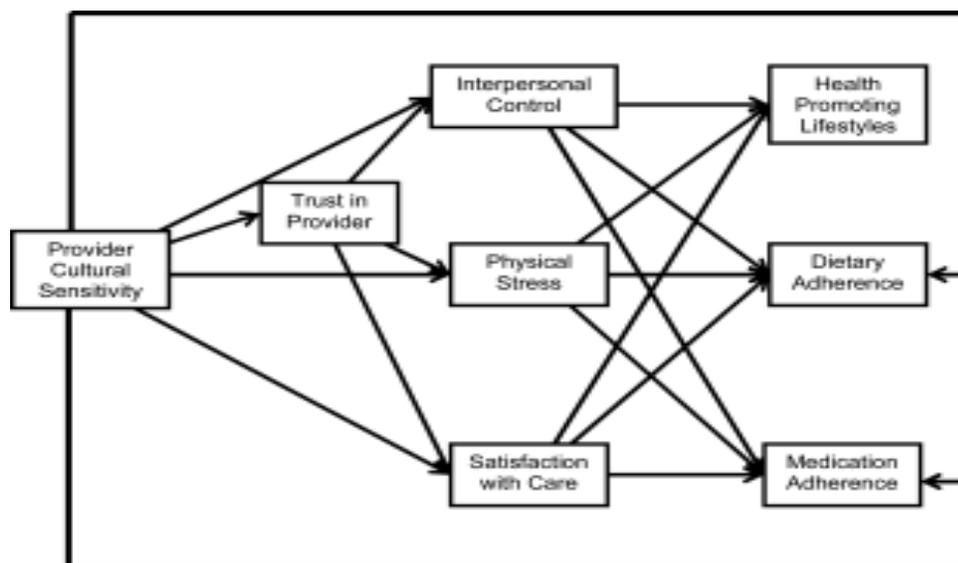
Figure 1. PC-CSHC model. From "Patient-Centered Culturally Sensitive Health Care: Model Testing and Refinement," C. Tucker, T. Arthur, J. Roncoroni, W. Wall, & J. Sanchez, 2013, *Journal of Lifestyle Changes,* p. 18. Reprinted with permission.

Conceptual Framework

I used the PC-CSHC as the conceptual framework for this study, with the focus specifically on satisfaction of care, trust in provider, and interpersonal control as influences on compliance with breast cancer screening and follow-up to screening recommendations. Additionally, I examined whether the cultural sensitivity scores of a medical center influenced compliance with breast cancer screening and follow up and was associated with a diagnosis at an earlier stage (I and II) of cancer. I also examined whether breast cancer screening and follow-up screening recommendations for African American women were related to the cultural sensitivity of a medical center. To determine the degree of cultural sensitivity, I used patient responses from the MAPPS survey for the medical center. Roncoroni et al. (2012) concluded PC-CSHC is recognized as a best practice approach to improve adherence to health recommendations and outcomes using patient perception.

Summary

Effective communication in healthcare is associated with patient compliance with medical treatment and recommendations for further testing or treatment (Zolnierk & DiMatteo, 2009). However, few researchers have studied whether provider bias, conscious or unconscious, affects communication processing and inhibits understanding, a factor that may directly influence patient compliance with recommendations for breast cancer screening and follow-up as needed.

In Chapter 2, I presented results of studies that show the effects of lack of cultural sensitivity of healthcare providers as well as the effects of sensitivity in communication,

how unconscious bias may affect the communication of providers, how the cultural sensitivity of providers may affect treatment of patients, how cultural sensitivity affects patient behaviors regarding health decisions, and studies that measured provider cultural sensitivity. There are limited studies and models studying the importance of cultural sensitivity and its effect on African American women's adherence to breast cancer screening or follow up to screening recommendations. Although African American women have a lower incidence of cancer when compared to Caucasian women (ACS, 2012), African American women have a higher morbidity rate and are diagnosed at later stages of cancer. The ACS (2012) has also concluded that African American women have more aggressive cancers when diagnosed, a factor that might be attributed to poor screening, failure to follow-up with compliance recommendations, or waiting too late to follow the screening recommendation—or all three. Chapter 3 includes details of the methods used to measure provider cultural sensitivity and to examine cultural sensitivity from the patient's perspective using MAPPS data for primary care departments of a medical center in a bounded geographic area served by a major national HMO.

Chapter 3: Research Method

This chapter details the quantitative methodology I used to examine the

association between the cultural sensitivity of physicians in the primary care departments

of 14 medical centers and compliance with breast cancer screening and other follow-up

recommendations given to African American women. The chapter includes the research

design, sampling plan, procedures for gaining access to data, the data collection and

analysis plan, a description of the instrument used to measure cultural sensitivity, the

target population, and ethical considerations for participants.

Research Design and Rationale

The purpose of this study was to learn if the cultural sensitivity of providers at a

medical center was associated with the compliance behavior of African American women

between the ages of 50 and 74 who are recommended for breast cancer screening and

follow-up after screening and the early detection of breast cancer. Early diagnoses are

cancers that are detected in Stages I or II of the four possible stages. I followed a

quantitative research design, which is considered appropriate to test a hypothesis and

determine if a relationship exists between two elements (Trochim, 2006). I also used a

cross-sectional, quantitative, secondary analysis of data for the years 2012 through 2016.

As the study did not include measuring before and after an intervention, the methodology

included an observational quantitative design. The strengths of this design are

reproducibility, the ability to use larger sample sizes, and the use of numerical data

(Trochim, 2006). A quantitative design can also be used to evaluate a numeric description

of trends, attitudes, or behaviors from a sample of a population (Babbie, 2010). Although

direct contact with participants could provide further details of what motivates a person to carry out behaviors needed to comply with breast cancer screening or follow-up recommendations, HIPAA regulations and the large numbers of potential participants prohibited following that process.

The population for the study was patients who met study criteria and who were enrolled in a single large, diverse, integrated prepaid health plan. The health plan covers 15% of the population from San Diego to Los Angeles County to the Inland Empire in California ("Strategies for Leadership," n.d.). Given the area covered by the health plan and the diversity of the population, the participants were representative of the population of Southern California. Advantages of using electronic medical records of patients enrolled in an HMO for data are that patients have the same insurance carrier with similar services and greatly reduced access-to-care barriers (Traylor et al., 2010). The data collection was standardized, a factor that minimized inconsistencies in reporting.

Research Questions

RQ 1: What is the association between the breast cancer screening compliance of African American women between the ages of 50 and 74, as measured by the U.S. Preventive Services Task Force recommendations, and the cultural sensitivity score of the medical center where they receive care?

H_o1: There is no association between the breast cancer screening compliance of African American women between the ages of 50 and 74, as measured by the U.S. Preventive Services Task Force recommendations, and the cultural sensitivity scores of the medical center where they receive care.

H_a1: There is an association between the breast cancer screening compliance of African American women between the ages of 50 and 74, as measured by the U.S. Preventive Services Task Force recommendations, and the cultural sensitivity scores of the medical center where they receive care.

RQ 2: What is the association between the breast cancer screening and follow-up compliance behavior of African American women, as measured by the recommendations of the CDC, and the cultural sensitivity scores of medical center where the women receive care?

H_o2: There is no association between the breast cancer screening and follow-up compliance behavior of African American women, as measured by the recommendations of the CDC, and the cultural sensitivity scores of the medical center where the women receive care.

H_a2: There is an association between the breast cancer screening and follow-up compliance behavior of African American women, as measured by the recommendations of the CDC, and the cultural sensitivity scores of the medical center where the women receive care.

RQ 3: What is the association between early detection rates for breast cancer (Stages I and II) of African American women patients, their compliance with screening and follow-up, and the cultural sensitivity scores of the medical centers where they receive care?

H_o3: There is no association between early detection rates for breast cancer (Stages I and II) of African American women patients, their compliance with screening

and follow-up, and the cultural sensitivity scores of the medical centers where they receive care.

H_a3: There is an association between early detection rates for breast cancer (Stages I and II) of African American women patients, their compliance with screening and follow-up, and the cultural sensitivity scores of the medical centers where they receive care.

Table 1 presents the research questions, variables of interest, and statistical measures.

Table 1

Research Questions and Statistical Measures

Research questions	Dependent variables	Independent variable	Covariates	Instrument to measure variable	Statistical test
1. What is the association between compliance behavior of African American women between 50 and 74, as measured by the USPSTF recommendations, and the cultural sensitivity score of the medical center where they receive care?	Compliance with screening	Medical center CC score (Includes individual questions that provide total score)	Age, geo-coded income, age at diagnosis, mammography compliance within the last 2 years, medical facility	MAPPS POINT, EHR	Logistic regression
2. What is the association between breast cancer screening follow-up compliance behavior of African American women as measured by the CDC and the cultural sensitivity scores of the medical center where they receive care?	Compliance with follow-up after screening	Medical center CC score	Follow up dates of follow up (additional diagnostic testing, ultrasound or additional mammogram views)	POINT, MAPPS, EHR	Logistic regression
3. What is the association between cultural sensitivity scores of medical centers, screening and follow up compliance, and early stage breast cancer detection (Stages I and II) among African American women at the medical center where they receive care?	Percentage of early detection	Medical center CC scores	Stage of breast cancer, age at diagnosis, geocoded income, and mammogram compliance within the last 2 years	POINT, MAPPS, Breast Cancer Registry	Pearson correlation

Instrumentation and Data Sources

Data sources for this study were the overall results of the medical center's

primary care departments of the 14 medical centers in the HMO following self-reported

questionnaires from patient surveys (MAPPS) on quality of care collected by the HMO.

The AHRQ created the cultural competency section that described cultural sensitivity

because the emphasis was on patient-centered care from the perception of the patient

(AHRQ, 2012). The section is a subset of the AHRQ clinician and group survey

conducted in 2011. Weech-Maldonado et al. (2012) assisted with providing the reliability

and validity for the questions to specifically measure the culturally competency of

providers from the view of the patient. AHRQ wanted to ensure the questions were

reliable and valid. According to the AHRQ (2012), when asked whether they perceived

they would have had better care if they were a different race or ethnicity, 15% of African

Americans, 13% of Hispanics, and 11% of Asians replied they believed they would have

had better care if they had been a different ethnicity or race (AHRQ, 2012). Only 1% of

Caucasians indicated a belief that better care would have been afforded them had they

been a different ethnicity or race (AHRQ, 2012). The director of diversity for the HMO

in this study stated that they use the CAHPS to improve the quality of care to the patient

because the questions are deemed reliable, valid, and are asked from the perspective of

the patient.

Consumer Assessment of Healthcare Providers and Systems (CAHPS)

In 2012, the AHRQ issued a revised version of CAHPS to measure how well

providers communicated with patients based on patients' perceptions. This survey

differed from the original version in 2007 because it included a section that grouped

questions together to specifically measure cultural competence (AHRQ, 2012). The data

from CAHPS are reported in a national database with a section that measures

patient/provider communication, perceptions of discrimination, and experiences leading

to trust or distrust of providers (AHRQ, 2012). A main driver for increasing the cultural

competence that includes the sensitivity of providers is to improve communication

between provider and patients that increases patient compliance with provider

recommendations (AHRQ, 2012).

Focusing on evaluating the cultural sensitivity of providers began in 2011 by The

Joint Commission. To determine the cultural sensitivity of providers, facilities use the set

of questions in the CAHPS survey to measure cultural competency (Appendix) after the

provider/patient visit (AHRQ, 2012). The cultural competency subset of the CAHPS

survey includes three questions used to measure the perception of whether providers are

polite and considerate, a factor that manifests cultural sensitivity according to the PC-

CSHC model (Tucker et al., 2013). The patient responds to the questions using a Likert-

type scale with a range of 0 (lowest) to 10 (highest). The data from CAHPS are used to

improve the quality of provider communication and strategies for developing positive

provider/patient interactions (AHRQ, 2012). The target is a mean score of 9 out of 10

(AHRQ, 2012). CAHPS provides a uniform method to assess the cultural competence of

providers from the perspective of the patient.

Studies have shown the effectiveness and validity of using the CAHPS survey.

For example, Carle et al. (2012) used the CAHPS cultural competence survey to examine

different racial and ethnic groups and determine if the CAHPS cultural competence

survey yielded a valid measurement. The study consisted of an evaluation of

measurement bias for four of the eight questions on the CAHPS survey. The study

included 146 non-Hispanic African American and 148 non-Hispanic Caucasian patients

(Carle et al., 2012). The cross-sectional study included telephone survey data of 1,509

participants, 65% were African American or Hispanic (Carle et al., 2012). The results

confirmed that African American Hispanic and Caucasian patients validated the CAHPS

cultural competence survey questions that measured whether the provider listened,

showed respect, did not rush, gave instructions that seemed to be easily understood, and

was free from measurement bias (Carle et al., 2012). Cultural sensitivity, a component of

cultural competence, includes whether patients perceived they received impartial care,

which may lead to adhering to the provider's recommendations (Tucker et al., 2011). In

another study by Weech-Maldonado et al. (2012), the researchers examined the

perceptions of perceived discrimination because of the race or ethnic backgrounds in a

Medicaid population in Florida, which is considered a racially and ethnically diverse

state. Weech-Maldonado et al. (2012) concluded that lower CAHPS scores (0-8 on the

Likert scale measurement) are associated with the perception of the patient receiving

poorer care than patients who perceived providers as communicating in a culturally

sensitive manner.

Member Appraisal of Physician/Provider Services (MAPPS)

MAPPS, an internal reporting tool, tracks the total patient experience in addition

to the patient/provider experience. CAHPS, however, is used for external or public

reporting (AHRQ, 2012). The HMO in this study uses MAPPS for performance improvement and, similar to CAHPS, to measure patient/provider interactions. MAPPS questions also measure patient and provider interaction but have a cultural competency section that includes sensitivity because the patient-centered questions from the perceptions of patients are a subset of CAHPS (Strategies for Leadership, n.d.).

The HMO randomly mails the MAPPS survey weekly to six patients per provider ("Strategies for Leadership," n.d.). The annual return rate is 60-100 patient responses per provider in each department: primary care, family medicine, internal medicine, and obstetrics and gynecology, which is approximately 30% of the surveys that are sent ("Strategies for Leadership," n.d.). The HMO considers a 30% return an adequate rate for a representative survey ("Strategies for Leadership," n.d.). Questions that measure cultural sensitivity are included in the survey for each provider. The patient-generated scores from the MAPPS survey questions are averaged to provide a mean score for each department. These data are then averaged again to provide a score for the medical center ("Strategies for Leadership," n.d.). However, provider and department level data are not available for research purposes.

Permanent Online Interactive Network Tool (POINT)

The HMO's POINT database tracks patient compliance with screening procedures and tests for monitoring of a variety of chronic diseases and screening initiatives (Goldberg et al., 2012). The database used in this study determined compliance with breast cancer screening and follow-up recommendations for women who met the study

criteria. Race and ethnicity of patients were determined through self-identification (Goldberg et al., 2012).

For this study, MAPPS scores determined the cultural sensitivity of the medical center from the random surveys sent to the patient. The MAPPS scores provided were per medical center (department) of the HMO. The POINT system provided data from African American women that indicated whether they were compliant or noncompliant with breast cancer screening. The cancer registry provided data for African American women who were diagnosed with Stage I or II cancers after having breast cancer screening.

Sample

The population for the study was African American women between the ages of 50 and 74 who receive care at a Southern California medical facility. According to a report on the HMO, it serves 3.7 million patients: 42.5% Hispanic, 33.39% Caucasian, 14.82% Asian American, and 6.53% African American. The dataset I examined included African American women between the ages of 50-74 from the 14 HMO service areas in the Southern California region. The approximately 18.5 million women in the group make it both diverse and representative of women in the United States. The HMO has a population of approximately 88,000 African American women in Southern California between the ages of 50-74.

The HMO's medical centers were compared using cultural sensitivity results from the doctor communication section of the MAPPS survey that includes the cultural sensitivity questions. The dataset is information about African American women between the ages of 50-74 who received medical care from 2010 through 2013 in Southern

California at one of the 14 HMO facilities. Services from the same parent HMO led to greater consistency in services than those provided by centers with no association whatsoever. The age range of the members in the dataset was based on the screening guidelines recommended by the United States Preventative Task Force (2012). The dataset of African American women between the ages of 50-74 who had breast cancer screening or follow-up to screening came from the HMO's system called POINT. I had permission from the IRB of the HMO to use the data and from Walden University, IRB approval number 01-18-17-0180120.

I used this quantitative study to determine if there was an association between the cultural sensitivity of the medical center and a patient's decision to have breast cancer screening, follow-up after screening, and stage of breast cancer at diagnosis. Each member of the HMO is assigned a unique medical record number upon joining the health plan, a number that is retained in perpetuity, irrespective of whether the patient leaves or rejoins the health plan. Each patient's unique medical records used were linked to healthcare utilization files with patient records in the cancer registry. The biostatistics section of the research department of the HMO provided me with data-linked files.

Power Analysis

Statistical power analysis can determine the relationships, if any, among sample size, effect size, and inference (Cohen, 1992). The study included a descriptive quantitative design that analyzed data from an existing dataset of health outcomes and cultural sensitivity survey results. The dataset included 32,016 African American women who were between the ages of 50 and 74 when they were patients at one of the14 HMO

Southern California facilities. The cross sectional, secondary analysis of the data did not include measuring before and after an intervention and did not allow a researcher to control the size of the sample. Due to the nature of the secondary analysis, the statistical power was set at 80%, with a total sample size of 32,016.

An a priori power calculation ensured the sample size was sufficient for the statistical analysis. Using the statistical software G *Power 3.1 (Faul, Erdfelder, Lang, & Buchner, 2009), I calculated the power for each research question. For Question 1, I selected a *z* test family using the statistical test of logistic regression. The type of power analysis selected was a priori to calculate the sample size. I set the power at 80% and selected a medium effect size using an odds ratio of 1.3 An odds ratio of 1.3 would suggest that mammography is associated with a 30% increase in odds of breast cancer detection, which is a conservative estimate based on previous studies that showed organized mammography programs are associated with a 30% decrease in breast cancer mortality (Heinävaara, Sakeala, & Anttila, 2016). Using these parameters yielded a required sample size of 721 and a compliant sample size of 21,884.

To determine the sample size for Research Question 2, I again used G*Power (Faul et al., 2009), and selected a *z* test family for the statistical test of logistic regression. The type of power analysis selected was a priori to calculate the required sample size for a study with at least 80% power. I used estimates from the National Cancer Institute Breast Cancer Surveillance Consortium (2014), which concluded that 10% of African American women need additional testing or follow-up after breast cancer screening. Additionally, reports from the ACS (2012) indicate that 25% of African American

women do not have recommended additional testing following a mammogram. Therefore, a smaller effect size and an odds ratio of 1.2 determined the study would be powered at .80 with a sample size of 1,484. The actual sample size was 4,537.

To calculate the sample size for Research Question 3, I conducted an a priori analysis for correlations with two independent Pearson's r. According to the National Cancer Institute (2014), 2.5% of women who return for follow up are diagnosed with breast cancer, so a small effect size was used in the power calculation protocol to determine the required sample size. I estimated a correlation coefficient of $r1=0.3$ and a correlation coefficient of $r2=0.5$, as these suggest a moderate correlation (Gerstman, 2008). The power was set at .80, and the probability of error was set at .05. Based on these parameters, the estimated sample size needed to examine Research Question 3 was 554. The actual sample size used was 451.

Inclusion and Exclusion Criteria

The study population was limited to African American women between the ages of 50 and 74 because that age group may benefit most from breast cancer screening (U.S. Preventive Services Task Force, 2012). It excluded women with a history of breast cancer in the initial screening group by linking with the HMO cancer registry. However, women diagnosed with breast cancer after screening were included. The population was selected because of the increased incidence of breast cancer in the population despite the lower prevalence of the disease compared to Caucasian women and the fact that I had an existing dataset (ACS, 2014). The study was also limited to women who received care at one or more of the HMO centers in its Southern California region.

Procedures

Patients' records were accessed after the HMO IRB approval was completed. After obtaining permission from the Walden University IRB # 01-18-17-0180120, the first phase of the process was to identify those who were eligible for breast cancer screening and follow-up to screening from 2012 through 2016. A de-identified retrospective dataset was obtained from the POINT database derived from the electronic health records of African American women between the ages of 50 and 74. Any women who had a breast cancer diagnosis prior to their first screening mammogram were removed. Compliance with breast cancer screening was defined as women who received at least two screening mammograms during the study period. The time for compliance was ≥ 730 days after the first mammogram and up to 912 days after the first mammogram. The percent compliance for screening was calculated by using the number of women who had two mammograms during the study period as the numerator divided by the total number of women in the sample as the denominator.

Follow-up compliance was defined as having had a follow-up mammogram or procedure within 30 days after the initial mammogram. I then used the HMO's internal cancer registry to identify those who were subsequently diagnosed with breast cancer. The data from these two databases were linked using the women's electronic medical records. For women who received a subsequent cancer diagnosis, stage at diagnosis was examined and stratified by early stage (Stages 0-II) and late stage (Stages III-IV). Women who complied were coded 1 (yes), and those noncompliant were 0 (no). Likewise, women compliant with follow-up were coded as 1 (yes) and noncompliant 0 (no). To

assess early detection, early stage was coded as 1 (yes), and late stage was coded as 0 (no).

Cultural sensitivity of the medical center was derived from the scores of the cultural sensitivity questions of the MAPPS patient survey for primary care physicians The MAPPS data for each question of the compiled responses in PAMS allowed for the extrapolation of an average score (medical center level data) for questions related to the cultural sensitivity communication of each medical center and an overall average score of the CAHPS questions (see Appendix A) of cultural competency together. MAPPS mirrors CAHPS, which uses a Likert scale from 0-10 for responses, with 0 being the lowest and 10 being the highest. The cultural sensitivity of each medical center was obtained from PAMS, which stores MAPPS patient survey data. The medical center-level scores were used because any primary care provider can issue orders for screening. The average for each question for each center was averaged to the cultural sensitivity score for each center, which was then trichotomized into the following: poor (88-89), average, (90-91), and good (92-93).

After approval to conduct the research by the Walden IRB, I received a password-protected dataset via secure e-mail that included the data variables shown in Table 2.

Table 2

Details of the Independent and Dependent Variables

Variable	Coding	Data source	Purpose
Age	Continuous	Membership	Covariate
Income	4 income groups (4 quartiles, Q1-lower 25%, Q2->25%-50%, Q3->50%-75%, Q4-top 25%)	Geocoded	Covariate
MAPPS score of medical center	Trichotomized 1-4 poor 5-8 average 9-10 good	Medical center	Independent /covariate/ stratification
Stage of BC dx	Early v late (If the woman complied with breast cancer screening and follow-up recommendations; if cancer was found was it early or late stage)	Cancer: The cancer registry classifies cancers by stages based on the tumor size from the pathology report. Stage I- tumors < 2cm, Stage II-tumors >2cm but <5cm	Covariate
Screening mammograms and dates	Yes/No (If the woman had a mammogram within the recommended 2 years from the previous one.	POINT	
Follow-up mammograms and dates	Yes/No (If the woman completed the additional mammogram suggested by the screening exam within 30 days	POINT	
Ultrasound	Yes/No (If the woman had the recommended ultrasound within 30 days suggested by the screening exam (in follow up data)	POINT	

Data Analysis

The internal biostatistics group of the HMO assembled the dataset from PAMS

for medical center data and POINT for the study subjects during 2012-2016. After I

conducted data linkages using medical record numbers, I received a de-identified

password-protected dataset per the HMO's research protocol to release information for

this study. The list of variables included the independent variable: MAPPS score

(trichotomized), dependent variables of screening compliance (yes = 1, no = 0),

compliance with follow-up screening (yes = 1, no = 0), and covariate demographics (age

at screening, geocoded education level, geocoded income). Women were geocoded by

socioeconomic elements based on their State of California census tracts.

Definitions of Dependent Variables

I examined two outcomes: screening compliance and follow-up compliance.

1. Screening compliance: Women between the ages of 50 and 74 who had a

recommended mammogram every 2 years (2012-2016), were classified as compliant. To

be considered compliant, women have had two mammograms, the initial and one

additional follow-up mammogram ≥ 730 days but before 912 days after the initial

mammogram. Those who had a screening mammogram after 912 days were classified as

noncompliant.

2. Follow-up compliance: Women between the ages of 50 and 74 who had a

recommended follow-up procedure (ultrasound or additional mammogram) within 30

days of the initial screening exam were classified as compliant. Those who did not were

classified as noncompliant.

Data Assembly

The data from the POINT system included age, ethnicity, breast cancer screening date, follow up procedures (additional mammograms or ultrasound recommended after screening), breast cancer screening and follow-up compliance behaviors. The analytic dataset contained the following variables:

1. Compliance or noncompliance with breast cancer screening recommendations (yes = 1, no = 0) was determined if the woman had an initial mammogram and a second mammogram greater than or equal to 730 days after the initial mammogram but no more than 912 days. Allowing a range of 2-2.5 years allowed for patient appointment preference and availability of appointments at the medical center.

2. Compliance or noncompliance with recommended breast cancer screening follow-up was determined by whether the woman had additional studies as recommended by her physician within 30 days of the initial screening (yes = 1, no = 0).

3. Early detection of breast cancer was determined based on the stage of diagnosis reported in the cancer registry: Women diagnosed with Stages 0-II breast cancer, Stage 0-II (yes = 1) Stage III-IV (no = 0)

4. Cultural sensitivity scores of the medical center (trichotomized (1-4 = poor;

5. 5-8 = average; 9-10 = good).

6. Medical center (dummy/indicator variables were created for the 14 medical centers).

7. Geocoded income. Geocoding was based on the State of California census. Women were geocoded into socioeconomic elements based on their census tracts by four quartiles (Q1 = <25%; Q2 = >26% - 50%; Q3 = >51% - 75%; Q4 = 76% or higher).

The dataset included three dependent variables: breast cancer screening compliance (coded 1 for yes or 0 for no), breast cancer follow-up compliance (coded 1 for yes or 0 for no), and percent of early detection by facility. The dataset also included the independent variables of the medical facilities total cultural sensitivity score and question sub-scores (Appendix A). Covariates included age, education, and income. Race was not included because participants were the same race.

Statistical Analyses

I first conducted descriptive statistics and compared the distribution of the MAPPS scores and patients' characteristics (age, and education), and breast cancer occurrence by medical center. These were compared by chi-square analysis to determine if these factors varied significantly by medical center. Next, I compared the percent of screening for average-risk women by medical center as well as the percent compliance among high-risk women.

Secondly, I conducted multivariable modeling. To determine if there was an association between the culturally sensitive communication score of a medical center and compliance with breast cancer screening and follow up, I used logistic regression. The

independent variables and covariates (age and income), along with the medical center, were entered and included in the full model. Variables were removed in stepwise fashion, and variables that changed the odds ratio by 10% or more were retained in the full model (Hosmer, Lemeshow, & Sturdivant, 2013). I used the Pearson correlation to determine if the culturally sensitive communication score of a medical center influenced the woman to have breast cancer screening. Table 1 shows the statistical test and explanation of each research question and variable.

Threats to Validity

Construct validity, like external validity, refers to the generalizability of the procedures and results (Trochim, 2006). The foundation of how screening behavior and cultural sensitivity were measured because they are considered a threat to construct validity. Other influences affected screening behaviors in addition to the cultural sensitivity of the department. In construct validity, I assumed the pattern in the data reflected actual patient behavior because I used existing clinical procedure data from the HMO databases. Content validity means that the data reflect the sample population because the HMO Southern California member population was socioeconomically diverse and broadly representative of the racial/ethnic groups living in Southern California. I also assumed the MAPPS questions adequately measured cultural sensitivity and that the average departmental scores from 2012 through 2016 of the eight cultural sensitivity questions correctly represented the performance of the medical center. In this study, the data from MAPPS were used to measure the cultural sensitivity of the provider using random patient surveys that had been tested and evaluated as reliable. I also

assumed the questionnaires completed by the patients were truthful reflections of their

provider visits from 2012 through 2016. The HMO entered the data from the

questionnaires when received, regardless of when the patient was seen, as any lapse

might have affected construct validity. The method of extrapolating data directly from the

electronic health record eliminated selection bias because there was no interaction with

the patient. As the information about patient age and ethnicity was self-reported, I

assumed that self-reported data were accurate. Errors were also prevented by ensuring

participants fit the inclusion criteria.

Using an integrated healthcare provider enhanced the validity of the study, as

patients with coverage from an HMO typically have access to similar levels of health

coverage, especially for screening exams and related services. Studies by Blair (2013),

Dovidio and Fiske (2012), and Michalopoulou et al. (2009) concluded that insurance

coverage and location might affect health outcomes.

The type of insurance coverage a patient has might also influence access to care.

Breast cancer screening is a covered benefit of the population I studied, while in other

settings, different insurance coverage may influence patients' healthcare decisions.

Although the Affordable Care Act (ACA) of 2010 requires a plan to cover preventative

treatment, plans sold after March 23, 2010, had until August 2012 to include preventative

services without co-pays or deductibles. Additionally, the ACA did not defray the cost if

follow up to screening was needed.

Ethical Procedures

To ensure I knew the responsibilities of obtaining and using data, I undertook

research compliance training about different modules required by the HMO. The content

of the training modules also included requirements for federal regulations, adverse event

reporting, breach of PHI, protocol violations and deviations, and sponsor responsibilities.

The training qualified me to conduct a research project. The institutional review board of

the HMO granted me permission to use the data retrieved from MAPPS and POINT. The

de-identified data used in this study were saved on a computer with several layers of

security, including a password and token to gain access. The saved data were stored on a

secure, encrypted server. The data used in this study were retained by the HMO on a

secure server for quality analysis purposes.

Summary

In Chapter 3, I described the methods that were used to accept or reject the

hypotheses. Using different statistical methods, I determined that culturally sensitive

medical centers affected the follow-up breast cancer screening behaviors of the study

population. The significant conclusion from the data was that improved cultural

sensitivity of the 14 medical center providers of the HMO in Southern California might

positively affect the health outcomes of their patients, particularly African American

women. The data gathered also determined there was an association between the cultural

sensitivity of a medical center and the compliance behavior of African American patients,

particularly early detection of breast cancer. If health outcomes of African American

women are improved as a result of the greater cultural sensitivity of the medical centers

in the region, the results will be congruent with the commitment to social change

espoused by Walden University.

Chapter 4: Results

Introduction

The purpose of this study was to learn if the cultural sensitivity of a medical center, as measured by its patients' opinions, influences African American women's compliance with recommended mammography screening and follow-up. This was determined by using cross-sectional data from HMO centers in Southern California from 2012-2016. The data used were the cultural competency (sensitivity) scores at the women's medical centers and medical record data indicating patient compliance with recommendations for screening and follow up testing.

The target population for this study was African American women between the ages of 50 and 74 with no history of breast cancer. After determining whether they had complied with breast cancer screening and follow up recommendations, the HMO's cancer registry data were reviewed to determine if members of the sample had been diagnosed with cancer at or after the screening and follow-up visits and to determine whether those who were diagnosed with breast cancer had early or late stage breast cancer. Results were calculated through logistic regression and Spearman rank-order correlations using SAS, version 9.3.

Chapter 4 presents the results of the data analysis in Chapter 3. First, I describe participant demographics including age, income quartile, MAPPS rating, breast cancer diagnosis, screening compliance, and stage of breast cancer diagnosis, along with the breast cancer screening and follow up visit frequency of participants who are patients at

each medical center. As a preliminary analysis, chi-square tests of homogeneity were calculated to determine if patient demographics were consistent across medical centers.

Research Question 1 enabled the exploration the relationships between mammogram screening compliance behaviors as measured by frequency of mammograms. The medical center's cultural sensitivity was measured by their MAPPS value. A logistic regression determined whether higher MAPPS ratings were associated with a significantly higher probability of being compliant with screening recommendations.

Research Question 2 was used to test the association between screening compliance and follow-up compliance after initial mammogram screening and the cultural sensitivity rating of the medical center as measured by their reported MAPPS value. A second logistic regression determined whether higher MAPPS scores were associated with a significantly higher probability of being compliant with follow-up screenings.

Research Question 3 was used to measure the association between a patient diagnosed with breast cancer after the initial screening or follow up and the MAPPS rating of their medical center. Participants who had been diagnosed with breast cancer prior to the initial screening or follow up were excluded. This was measured by a Spearman rank-order correlation.

Model significance, model fit, odds ratio, and model prediction efficiency were presented and discussed for logistic regression equations. Strength and significance were reported for correlations. Chi-square tests conclusions suggested a cause for concern

because of nested data structure, possibly inflating the risk of a Type I error. This was addressed by using increased risk and an alpha level of .005. A magnitude of 10 smaller than the traditional .05 was chosen to determine significance for subsequent statistical testing. All statistical tests were conducted using SAS.

Demographic information (participant income and age), screening compliance, follow-up compliance, and MAPPS score ratings were collected from 32,016 participants across 14 different hospitals. Statistics related to these variables are reviewed in the sections below.

Participants in the sample were divided into four income quartiles: 25% (7,988) were in Quartile 1; 25% (7,979) were in Quartile 2; 25% (7,998) were in Quartile 3, and 25% (7,992) were in Quartile 4. Less than 1% (59) declined to report their income. The income quartiles defined by the U.S. Census Bureau (2017) are as follows:

- Quartile 1: Mean income: $12,943

- Quartile 2: Mean income: $34,504

- Quartile 3: Mean income: $59,149

- Quartile 4: Mean income: $95,178

The ages ranged from 50 to 69, with most participants under 50. About half indicated they were between 55 and 64, and the smallest group was between 65 and 69 years old. Ages in this sample are shown in Table 3.

Table 3

*Age Frequencies (*N *= 32,016)*

Age	Frequency	Percentage
50-54	9,736	30.40
55-59	9,002	28.11
60-64	7,967	24.80
65-69	5,311	16.59

Screening Compliance

Of the 32,016 participants, 21,884 (68.35%) complied with breast cancer screening recommendations (Table 4). Concerning recommendations for follow-up screenings, 4,544 of the 32,016 participants (14.19%) had recommendations for follow-up after their mammogram screening. Of those 4,544, participants, 3,901 (85.85%) were considered compliant with follow-up visits. Table 4 also presents the frequencies for breast cancer diagnosis in this sample. In this sample, 457 women were diagnosed with breast cancer. Of those diagnosed, 370 (80.96%) were considered mammogram screening compliant within the last 5 years. In addition 299 (65.42%) were considered follow-up compliant.

Table 4

Participant Compliance and Diagnosis Frequencies

Mammogram screening compliance (*N* = 32,016)		
Screening compliance	Frequency	Percentage
Yes, screening compliant	21,884	68.35
No, not screening compliant	10,132	31.65
Patient follow-up screening compliance (*N* = 4,544)		
Follow-up compliance	Frequency	Percentage
Yes, follow-up compliant	3,901	85.85
No, not follow-up compliant	643	14.15
Breast cancer diagnosis frequencies (*N* = 32,016)		
Diagnosis	Frequency	Percentage
Diagnosed with breast cancer	457	1.40
Not diagnosed with breast cancer	31,559	98.60
Mammogram screening compliance of those diagnosed (*N* = 457)		
Screening compliance	Frequency	Percentage
Yes, screening compliant	370	80.96
No, not screening compliant	87	19.04
Patient follow-up screening compliance of those diagnosed (*N* = 457)		
Follow-up compliance	Frequency	Percentage
Yes, follow-up compliant	299	65.42
No, not follow-up compliant	158	34.58

Cultural Competency (Sensitivity) Scores

MAPPS score ratings of the medical center ranged from 88 to 93 of a possible

100. Higher MAPPS values indicate higher levels of cultural sensitivity, and a MAPPS

value of less than 90 is considered low. The majority (58.06%) rated their facility with a

MAPPS score of 90 or 91. The average MAPPS score rating for medical centers was

90.70, with a standard deviation of 1.23. The average MAPPS score rating for patients

diagnosed with breast cancer was 90.72, with a standard deviation of 1.26, indicating that

the majority rated their practitioners as having a higher degree of cultural sensitivity.

Participants' MAPPS ratings are presented in Table 5.

Table 5

Medical Center's MAPPS for Providers Rating Frequencies

MAPPS rating	Frequency	Percentage
88-89	7883	24.60
90-91	18588	58.10
92-93	5545	17.30

MAPPS ratings were also examined across age. In general, participants ages 50-59 tended to give a MAPPS rating of 90-91, whereas those ages 60-69 tended to report a MAPPS rating of 88-89. Frequency statistics related to age and MAPPS ratings are shown in Table 6.

Table 6

Medical Center MAPPS Ratings for Providers and Age Frequencies

Age	MAPPS Scores						
	88-89		90-91		92-93		Total (row)
50-54	2170	22.29	5928	60.89	1638	16.82	9736	100.00
55-59	2143	23.81	5371	59.66	1488	16.53	9002	100.00
60-64	2079	26.10	4459	55.97	1429	17.94	7967	100.00
65-69	1491	28.07	2830	53.29	990	18.64	5311	100.00

In addition to age, MAPPS ratings were also examined across income quartile. The majority of those in income quartile one reported the lowest MAPPS rating of 88-89. Those in income Quartile 2 tended to report a higher MAPPS rating of 92-93, and the majority in income Quartiles 3 and 4 reporting the middle MAPPS rating of 90-91. Frequency statistics related to income and MAPPS rating are shown in Table 7.

Table 7

Medical Center MAPPS Ratings for Providers and Income Quartile Frequencies

Income Quartile	MAPPS Score						
	88-89		90-91		92-93		Total (Row)
Q1	2809	35.17	3676	46.02	1503	18.82	7988	100.00
Q2	2132	26.72	4280	53.64	1567	19.64	7979	100.00
Q3	1688	21.11	4935	61.70	1375	17.19	7998	100.00
Q4	1243	15.55	5655	70.76	1094	13.69	7992	100.00
Missing/ Unknown	11	18.64	42	71.19	6	10.17	59	100.00

Medical Center Statistics

Frequency. Data were collected from 14 different medical centers: eight in Los Angeles county, two in Orange county, one in San Diego county, one in San Bernardino county, one in Riverside county, and one in Kern county. Most in the sample used

medical centers from LA County. The distribution of participants per medical center by county is presented in Table 8.

Table 8

Participants' Frequencies per Medical Center by County

Medical Center	Frequency	Percentage
LA County	21,355	66.60
San Diego County	2424	7.60
Orange County	982	3.10
San Bernardino County	4431	13.80
Riverside County	2517	7.90
Kern County	299	0.90

To examine participant demographics across medical centers, a series of chi-squared tests were performed using SAS version 9.3. An unequal distribution of patient age, income, screening compliance, breast cancer diagnosis, or stage of breast cancer diagnosis across medical centers indicates the potential for a nested-data structure. To address this, chi-square tests of homogeneity were conducted to determine whether patient age, income, screening compliance, breast cancer diagnosis, and stage of breast cancer diagnosis were equal across medical centers.

Age. Age was not equally distributed across the 14 medical centers in this sample, χ^2 (39, $n = 32016$) = 247.948, $p < .0001$ and is shown in Table 9. Most patients came from medical centers G, D, and C, and most were between the ages of 50 and 54, with the exception of medical center G. For all medical centers, the group 65 to 70 years old contained the smallest number of patients. Medical centers generally differed in the number of patients they had between the ages of 55 and 59 and 60 and 65.

Table 9

Patient Age Distribution Across Medical Centers

Medical Center	Age 50-54		Age 55-59		Age 60-65		Age 65-70		Total (Row)	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
A	610	27.05	603	26.74	609	27.01	433	19.20	2255	100.00
B	984	31.96	885	28.74	734	23.84	476	15.46	3079	100.00
C	1638	29.54	1488	26.83	1429	25.77	990	17.85	5545	100.00
D	1457	32.87	1337	30.17	1007	22.72	631	14.24	4432	100.00
E	785	32.34	725	29.87	582	23.98	335	13.80	2427	100.00
F	245	30.82	238	29.94	189	23.77	123	15.47	795	100.00
G	1880	26.53	1922	27.13	1901	26.83	1382	19.51	7085	100.00
H	193	38.68	141	28.26	100	20.04	65	13.03	499	100.00
I	809	32.14	710	28.21	612	24.31	386	15.34	2517	100.00
J	252	29.72	238	28.07	223	26.30	135	15.92	848	100.00
K	97	32.44	80	26.76	78	26.09	44	14.72	299	100.00
L	265	34.69	223	29.19	176	23.04	100	13.09	764	100.00
M	74	33.94	58	26.61	45	20.64	41	18.81	218	100.00
N	447	35.67	354	28.25	282	22.51	170	13.57	1253	100.00
Total	9736	30.41	9002	28.12	7967	24.88	5311	16.59	32016	100.00

Table 10

Patient Age Distribution Across Medical Centers by County

Medical Center	Age 50-54		Age 55-59		Age 60-65		Age 65-70		Total (Row)	
LA Co.	6249	29.26	5869	27.48	5467	25.60	3774	17.67	21359	100.00
San Diego Co.	785	32.34	725	29.87	582	23.98	335	13.80	2427	100.00
Orange Co.	339	34.52	281	28.62	221	22.51	141	14.36	982	100.00
San Bern Co.	1457	32.87	1337	30.17	1007	22.72	631	14.24	4432	100.00
Riverside Co.	809	32.14	710	28.21	612	24.31	386	15.34	2517	100.00
Kern Co.	97	32.44	80	26.76	78	26.09	44	14.72	299	100.00
Total	9736	30.41	9002	28.12	7967	24.88	5311	16.59	32016	100.00

Income. Income quartile was not equally distributed across the 14 medical centers in this sample, χ^2 (52, n= 32016) = 3518.000, $p < .0001$. For most medical facilities, patients were categorized as in the lower 25% of income, with the exception of medical

centers D, I, J and L, which had a greater number of high-income patients. Distribution of

patient income quartile across medical centers is shown in Tables 11 and 12.

Table 11

Patient Income Quartile Distribution Across Medical Centers

Med. Cent.	Missing		Income Q1		Income Q2		Income Q3		Income Q4		Total (Row)	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq.	%
A	6	.27	782	34.68	512	22.71	516	22.88	439	19.47	2255	100
B	5	.16	929	30.17	1026	33.32	688	22.34	431	14.00	3079	100
C	6	.11	1503	27.11	1567	28.26	1375	24.80	1094	19.73	5545	100
D	13	.29	706	15.93	831	18.75	1296	29.24	1586	35.79	4432	100
E	7	.29	498	20.52	594	24.47	669	27.56	659	27.15	2427	100
F	1	.13	113	14.21	210	26.42	214	26.92	257	32.33	795	100
G	10	.14	2666	37.63	1945	27.45	1503	21.21	961	13.56	7085	100
H	1	.20	33	6.61	110	22.04	132	26.45	223	44.69	499	100
I	7	.28	347	13.79	490	19.47	628	24.95	1045	41.52	2517	100
J	0	.00	63	7.43	125	14.74	276	32.55	384	45.28	848	100
K	0	.00	110	36.79	77	25.75	53	17.73	59	19.73	299	100
L	1	.13	38	4.97	132	17.28	156	20.42	437	57.20	764	100
M	0	.00	8	3.67	34	15.60	57	26.15	119	54.59	218	100
N	2	.16	192	15.32	326	26.02	435	34.72	298	23.78	1253	100
Totals	59	.18	7988	24.95	7979	24.92	7998	24.98	7992	24.96	32016	100

Table 12

Patient Income Quartile Distributions Across Medical Centers by County

Med Cent	Missing		Income Q1		Income Q2		Income Q3		Income Q4		Total (Row) %	
LA.	31	0.15	6281	29.41	5821	27.25	5139	24.06	4087	19.13	21359	100
San Diego.	7	0.29	498	20.52	594	24.47	669	27.56	659	27.15	2427	100
Orange .	1	0.10	46	4.68	166	16.90	213	21.69	556	56.62	982	100
San Bern	13	0.29	706	15.93	831	18.75	1296	29.24	1586	35.79	4432	100
Riv'side	7	0.28	347	13.79	490	19.47	628	24.95	1045	41.52	2517	100
Kern.	0	0.00	110	36.79	77	25.75	53	17.73	59	19.73	299	100
Totals	59	0.18	7988	24.95	7979	24.92	7998	24.98	7992	24.96	32016	100

Screening Compliance. Mammogram screening compliance was not equally

distributed across the 14 medical centers in this sample, χ^2 (16, n= 32016) = 209.30,

p < .0001. For each center, more patients were considered screening compliant than

noncompliant. One center lacked data for mammogram screening compliance for five

patients and was excluded from the analysis. The distribution of patient screening

compliance across medical centers is shown in Tables 13 and 14.

Table 13

Patient Screening Compliance Across Medical Centers

Medical Center	Compliant		Noncompliant		Total (Row)	
	Freq.	%	Freq.	%	Freq.	%
A	1507	66.83	748	33.17	2255	100.00
B	1865	60.57	1214	39.43	3079	100.00
C	4049	73.06	1493	26.94	5542	100.00
D	2995	67.59	1436	32.41	4431	100.00
E	1636	67.49	788	32.51	2424	100.00
F	561	70.57	234	29.43	795	100.00
G	4871	68.76	2213	31.24	7084	100.00
H	294	58.92	205	41.08	499	100.00
I	1753	69.65	764	30.35	2517	100.00
J	615	72.52	233	27.48	848	100.00
K	180	60.20	119	39.80	299	100.00
L	489	64.01	275	35.99	764	100.00
M	144	66.06	74	33.94	218	100.00
N	918	73.26	335	26.74	1253	100.00
Totals	21877	68.35	10131	31.65	32008	100.00

Table 14

Patient Screening Compliance Across Medical Centers by County

Medical Center	Compliant Number	%	Noncompliant Number	%	Total (Row) Number	%
LA Co.	14680	68.74	6675	31.26	21355	100.00
San Diego Co.	1636	67.49	788	32.51	2424	100.00
Orange Co.	633	64.46	349	35.54	982	100.00
San Bern. Co.	2995	67.59	1436	32.41	4431	100.00
Riverside Co.	1753	69.65	764	30.35	2517	100.00
Kern Co.	180	60.20	119	39.80	299	100.00
Totals	21877	68.35	10131	31.65	32008	100.00

Cancer Diagnosis. Frequency of cancer diagnosis was equally distributed across the 14 medical centers in this sample, χ^2 (13, *n*= 32016) = 13.991, *p* =. 375. For each medical center, the majority of patients were not diagnosed with cancer. The distribution of cancer diagnoses across medical centers is shown in Tables 15 and 16.

Table 15

Patient Cancer Diagnosis Across Medical Centers

Medical Center	Not Diagnosed Freq.		Diagnosed Freq.		Total (Row) Freq.	%
A	2224	98.63	31	1.37	2255	100.00
B	3047	98.96	32	1.04	3079	100.00
C	5456	98.39	89	1.61	5545	100.00
D	4376	98.74	56	1.26	4432	100.00
E	2383	98.19	44	1.81	2427	100.00
F	786	98.87	9	1.13	795	100.00
G	6980	98.52	105	1.48	7085	100.00
H	494	99.00	5	1.00	499	100.00
I	2486	98.77	31	1.23	2517	100.00
J	835	98.47	13	1.53	848	100.00
K	296	99.00	3	1.00	299	100.00
L	748	97.91	16	2.09	764	100.00
M	213	97.71	5	2.29	218	100.00
N	1235	98.56	18	1.44	1253	100.00

Totals	31559	98.57	457	1.43	32016	100.00

Table 16

Patient Cancer Diagnosis Across Medical Centers by County

Medical Center	Not Diagnosed		Diagnosed		Total (Row) %	
LA Co.	21057	98.59	302	1.41	21359	100.00
San Diego Co.	2383	98.19	44	1.81	2427	100.00
Orange Co.	961	97.86	21	2.14	982	100.00
San Bern Co.	4376	98.74	56	1.26	4432	100.00
Riverside Co.	2486	98.77	31	1.23	2517	100.00
Kern Co.	296	99.00	3	1.00	299	100.00
Totals	31559	98.57	457	1.43	32016	100.00

Stage of Diagnosis. Frequency of stages of breast cancer diagnosis was equally

distributed across the 14 medical centers in this sample, χ^2 (52, n= 32016) = 52.201,

p =.466. The distribution of breast cancer diagnosis across medical centers is shown in

Tables 17 and 18

Table 17

Patient Cancer Stage Diagnosis Across Medical Centers for Entire Sample

Med Cent	Stage 1		Stage 2		Stage 3		Stage 4		Total (row)	
A	17	54.84	10	32.26	4	12.90	0	0.00	31	100.00
B	21	65.63	9	28.13	1	3.13	1	3.13	32	100.00
C	49	55.06	33	37.08	6	6.74	1	1.12	89	100.00
D	36	64.29	17	30.36	2	3.57	1	1.79	56	100.00
E	23	53.49	14	32.56	6	13.95	0	0.00	43	100.00
F	8	88.89	1	11.11	0	0.00	0	0.00	9	100.00
G	56	53.85	37	35.58	11	10.58	0	0.00	104	100.00
H	3	60.00	1	20.00	1	20.00	0	0.00	5	100.00
I	16	55.17	7	24.14	3	10.34	3	10.34	29	100.00
J	10	76.92	3	23.08	0	0.00	0	0.00	13	100.00
K	3	100.00	0	0.00	0	0.00	0	0.00	3	100.00
L	8	53.33	5	33.33	1	6.67	1	6.67	15	100.00
M	3	60.00	1	20.00	1	20.00	0	0.00	5	100.00
N	11	64.71	4	23.53	2	11.76	0	0.00	17	100.00
Totals	264	58.54	142	31.49	38	8.43	7	1.55	451	100.00

Table 18

Patient Cancer Stage Diagnosis Across Medical Centers by County

Medical Center	Stage 1		Stage 2		Stage 3		Stage 4		Total (Row)	
LA Co.	175	58.33	98	32.67	25	8.33	2	0.67	300	100.00
San Diego Co.	23	53.49	14	32.56	6	13.95	0	0.00	43	100.00
Orange Co.	11	55.00	6	30.00	2	10.00	1	5.00	20	100.00
San Bernardino Co.	36	64.29	17	30.36	2	3.57	1	1.79	56	100.00
Riverside Co.	16	55.17	7	24.14	3	10.34	3	10.34	29	100.00
Kern Co.	3	100.00	0	0.00	0	0.00	0	0.00	3	100.00
Totals	264	58.54	142	31.49	38	8.43	7	1.55	451	100.00

Summary

Screening compliance, age, and income quartile were not equally distributed across medical centers according to the results of the chi-square homogeneity tests, presenting concerns with a data structure nested under medical center. Single level analyses performed on multi-level nested data can result in an inflated Type I error, increasing the risk of a false positive (Clarke, 2008). To mitigate this risk, an alpha level of .005, a magnitude of 10 smaller than the traditional .05, was chosen to determine significance for subsequent statistical testing. Neither cancer diagnosis frequency nor cancer diagnosis stage was different across medical centers, according to the results of the chi-square homogeneity tests.

Results

For Research Question 1, I calculated a binary logistic regression to test the association between mammogram screening compliance and patients' perceptions of the cultural sensitivity of their medical center. For Research Question 2, I used an additional binary logistic regression to test if increased cultural sensitivity by medical center was

associated with increased likelihood of patients' follow-up screening. For Research

Question 3, I calculated a Spearman rank-order correlation to determine the association

between perceived cultural sensitivity of the medical center and stage of breast cancer

diagnosis.

Answers to Research Question 1

A binary logistic regression determined the association between breast cancer

screening compliance behavior and cultural sensitivity MAPPS score of the medical

center. The model was statistically significant, χ^2 (2, n= 32016) = 69.344, p <.0001, AIC =

39969.331. Medical centers with a MAPPS value of 88 or 89 had 0.78 times the odds of

being mammogram screening compliant compared to participants who rated their medical

center with a MAPPS value of 92 or 93. Additionally, participants who rated their

medical center with a MAPPS value of 90 and 91 had 0.76 times the odds of being

mammogram screening compliant compared to participants who rated their medical

center with a MAPPS value of 92 or 93. The gamma statistic for SAS binary logistic

regression is a descriptive evaluation of the predictive strength of the model. It is

calculated by comparing the classification predictions made by the model with the null

model (predictions made on chance alone) (Peng, Lee & Ingersoll, 2002). There were 7.4

fewer errors made in predicting which patients would be screening compliant using the

estimated probabilities generated from their MAPPS value compared to chance alone, Γ =

.074. These findings suggest rejecting the null hypothesis as shown in Table 19.

Table 19

Logistic Regression Statistics: Does MAPPS Value Predict Screening Compliance?

Effect	DF	Wald chi-square	*p*	Point estimate	Odds ratio estimates 95 Wald confidence limits	
MAPPS	2	69.3440	< .0001			
88-89	1	14.2674	0.0002	0.777	0.720	0.838
90-91	1	38.9490	< .0001	0.755	0.706	0.807

*MAPPS category 92-93 was excluded from the analysis as a reference level.

Answers to Research Question 2

To determine the association between breast cancer screening follow-up visit compliance and the cultural sensitivity MAPPS rating of the patient's medical center, I calculated a second binary logistic regression. The model was statistically significant, χ^2 (2, *n*= 4537) = 22.56, *p* <.0001, *AIC* = 3701.31. The odds of being noncompliant and not returning for a follow-up screening in the suggested time (within 30 days) after a mammogram were 86 points greater for patients who rated their medical center at 88 or 89 compared to patients who rated it at 90 or 91. Additionally, the odds of a patient being noncompliant and not returning for a follow-up screening in the recommended time after a mammogram were 41points greater for patients who rated their medical center at 90 or 91 compared to patients who rated it at 92-93. There were 17.4 fewer errors made in predicting which patients would be follow-up screening compliant using the estimated probabilities generated from their MAPPS rating compared to chance alone, Γ .174. This would suggest rejecting the null hypothesis. Statistics related to the binary logistic regression are in Table 20.

Table 20

Logistic Regression Statistics: Does MAPPS Value Predict Noncompliance with Screening Follow-up?

					Odds Ratio Estimates	
Effect	DF	Wald Chi-Square	*p*	Point Estimate	95 Wald Confidence Limits	
MAPPS	2	22.5764	<.0001			
88-89	1	0.2938	<.0001	1.847	1.425	2.395
90-91	1	0.0262	0.6616	1.414	1.102	1.814

*MAPPS category 92-93 was excluded from the analysis as a reference level.

Research Question 3

Research Question 3 was used to learn the relationship between medical center's cultural sensitivity rating and stage of breast cancer diagnosis. For the 457 patients diagnosed with breast cancer in the sample, 451 also provided a MAPPS rating. A Spearman's rank-order correlation indicated that there was no significant relationship between MAPPS score rating and breast cancer diagnosis stage in this sample (r_s (N=451) = -.002, p = .973). The findings did not reject the null hypothesis.

Conclusion

Previous research has raised concerns regarding the cultural sensitivity of a medical center and compliance of African American women with medical advice. I explored the association between African American women's perceptions of the cultural sensitivity of their medical center and their mammogram compliance, follow-up screening compliance and, for those diagnosed with cancer, their stage of diagnosis. Chi-squared tests of homogeneity of variance indicated that difference medical centers had patients of different ages and socio-economic status. While this finding is not unexpected,

it presents the possibility of inflated Type I error regarding patient data being nested under "medical center." To mitigate the effect of this potential Type I error inflation, a much smaller alpha level of .005 was used on subsequent statistical testing. Rate and stage of cancer diagnosis did not differ by medical center, according to the chi-square tests.

The results of the logistic regressions indicated that women who gave their medical center a higher MAPPS value had a significantly higher probability of having mammogram screenings at the suggested intervals and a significantly higher probability of returning to their medical center for follow-up tests after screening if instructed to. Model fit values indicated that the effect of cultural competence perception was stronger for follow-up compliance than for screening compliance. These results also suggested that the perceived cultural sensitivity of a medical center does affect screening and follow-up behavior of African American women. However, results of the Spearman rank-order correlation show no association between cancer stage diagnosis and patients' opinion of the cultural sensitivity of their medical center, suggesting that the decreased likelihood of screening and follow-up compliance is not affecting cancer stage diagnosis for medical centers. It is possible that women who rated their medical center with a lower cultural sensitivity completed their follow-up services with another medical center, but that is not known.

Taken together, the results suggest there is an effect of cultural sensitivity perception on patients' mammogram screening and follow-up behavior; however, more

research is needed to determine how that affects early diagnosis of breast cancer.

Discussion of these results and suggestions for future research will continue in Chapter 5.

Chapter 5: Discussion, Conclusions, and Recommendations

The purpose of this study was to determine if the cultural sensitivity of a medical center affected the compliance of African American women patients with recommended mammography screening and follow-up behaviors. I examined the possible association between African American women's perceptions of the cultural sensitivity of their medical center and mammogram compliance, follow-up screening compliance and, for those diagnosed with cancer, stage of diagnosis. It was posited that the communication styles of the medical centers, shaped by their cultural sensitivity, might have a significant effect on the way their African American patients accepted and followed the providers' recommendations. Even though the initial screening rates of African American women at-risk of having breast cancer were similar to the screening rates of Caucasian women, the rate of compliance with recommendations for subsequent and more far-reaching tests was significantly lower for African American women.

I used a PC-CSHC model as the theoretical framework and a quantitative cross-sectional design as the method to examine this phenomenon. I compiled secondary data gathered from 32,016 women between 50 to 74 years of age by 14 national HMOs operated by the same corporation in Southern California and found significant results. I summarized and restated the data and followed that by an interpretation of the findings, a discussion of the implications for practice recommendations, and a presentation of the study limitations. In this chapter, I also present recommendations for future research based on those findings.

Research Question 1

The first research question was focused on an association between the breast cancer screening compliance of African American women ages 50 to 74, as measured by the U.S. Preventive Services Task Force recommendations as well as the cultural sensitivity score of the medical center where they received health care. The null hypothesis claimed no association, and based on the regression analysis results for Research Question 1, the null hypothesis was rejected. Results indicated a significant association between mammogram screening compliance and the cultural sensitivity of the medical center. Participants who rated their medical center as having lower cultural sensitivity were also those who were less likely to comply with recommendations for further tests.

Research Question 2

I used the second research question to determine the link between the breast cancer screening follow-up compliance behavior of African American women as measured by the recommendations of the CDC as well as the cultural sensitivity scores of the medical center where the women received their care. The null hypothesis was also rejected based on the regression analysis conducted for Research Question 2. Results indicated a significant association between breast cancer screening follow-up visit compliance and perceived cultural sensitivity of the medical center. The chance of the patient failing to return for a follow-up screening within the recommended time after the initial mammogram was greater for those patients who rated their medical center with a lower MAPPS value.

Research Question 3

Research Question 3 asked the relationship between cultural sensitivity scores of medical centers during screening and follow-up compliance and early stage breast cancer detection for Stages I and II of the disease among African American women as well as the cultural sensitivity scores of the medical center where the women accessed care. After determining compliance with breast cancer screening and follow up, I compared the sample to the cancer registry to see if any patients were diagnosed with early or late stage breast cancer. Based on the Spearman's rank-order correlation test results, the null hypothesis was accepted, indicating no association between early detection rates for breast cancer (Stages I and II) of African American women patients, their compliance with screening and follow-up, and the cultural sensitivity scores of medical centers where they receive care.

Overall, these findings suggested that African American women are more likely to be compliant with breast cancer screening and follow-up if the medical center where they receive care has a higher cultural sensitivity score. The findings also indicated that perceptions of their center's cultural sensitivity are not connected to their diagnosis of breast cancer or the stage of their disease.

Interpretations of the Findings

The findings of the study can be interpreted using the PC-CSHC model, the theoretical framework used to support the study. The model claims strong relationships between the factors of healthcare and patients' adherence to treatment, behaviors for health promotion, and health outcomes (Tucker et al., 2011). The model is considered the

most appropriate because it is focused on patient-entered care and perceptions of providers in culturally diverse groups (Tucker et al., 2011). Under this model, cultural competency and sensitivity are thought to be important in the healthcare industry. Cultural sensitivity of a healthcare institution reflects the understanding of providers working in this organization with regard the cultural differences between them and their patients. Providers with limited understanding of these differences are thought unable to communicate to their patients effectively (Tucker et al., 2013). The findings of the study add to the growing evidence of what this theory claims. Because the PC-CSHC model is designed to help promote cultural sensitivity and increase adherence to recommended health regimens and treatments, provider communication, and patient perceptions (Tucker et al., 2013), the findings showed only that the conceptual framework was valid.

The main assumption of the PC-CSHC model is that care that is patient centered and culturally sensitive communication is associated with a patient's adherence to treatment and that health promotion behaviors can lead to positive health outcomes (Tucker et al., 2013). The findings revealed that culturally sensitive communication in the eyes of the patients could affect their adherence to recommended health promotion behaviors. The theory also assumes that if communication is without prejudice and bias, a provider could influence patients to be active participants in their healthcare progress (Tucker et al., 2013). The findings contributed to the body of evidence supporting this theory's assumption. In particular, the findings add to the growing evidence of the model's validity in associating cultural sensitivity of providers and the adherence to breast cancer screening of minority patients. Findings for the second research question

indicated that there is a significant association between breast cancer screening follow-up visit compliance and perceived cultural sensitivity of the medical center, showing patients' willingness to be more in control of their own health if they perceive they have cultural support from their centers.

The findings are supported in similar existing studies. Several studies spanning decades have shown that providers who engage in culturally sensitive patient interactions when relaying healthcare information could lead to positive patient outcomes (Brusin, 2013; Purnell, 2002; Roncoroni et al., 2014). The findings also showed that those who receive care at centers with a high cultural sensitivity rating are more likely to be compliant and, therefore, have a better chance of a positive health outcome.

Insufficient knowledge of people from a different culture or insensitivity to how people from different cultures communicate can lead to misunderstanding, conflict, and, in the case of this study, failure to act on recommendations for further health screening. In healthcare, misunderstandings and conflicts between providers and patients can be severe in terms of cost as well as in patient outcomes. One negative consequence noted in the literature is the patient's being noncompliant with recommendations for healthcare screening, having more tests, and for having certain treatments (Blair, 2013). This study showed that possibility, as the perceived cultural sensitivity of a medical center was associated with compliance with recommended mammography screening and follow-up. According to Blair (2013), the patients of more culturally sensitive health care providers are more likely to trust and act upon the recommendations of their healthcare providers. Blair also found that culturally sensitive providers communicate their messages more

clearly to patients, a practice that increases the likelihood that patients will comply with their recommendations. Similarly, Brusin (2013) emphasized the importance of cultural sensitivity of healthcare providers because that is a gauge of their respect their patients. Respect for and understanding of the patient is a component of cultural sensitivity, and the manner in which the provider views, understands, and involves the patient in managing his or her health are key signs of respect (Brusin, 2013).

As early as 2010, Kawgawa-Singer et al. had determined that healthcare providers' communication skills and cultural sensitivity are important. They also claimed that for the past four decades before their study, there had been inadequate progress in increasing medical providers' awareness of cultural differences among their patients. Provider sensitivity, in fact, has been shown to influence whether patients act on their providers' recommendations (Kawgawa-Singer et al., 2010). Healthcare providers who do not or seem unwilling to talk to their patients with sensitivity and respect are less likely to influence their patients to follow medical advice.

In a study by Becerra et al. (2015), if healthcare providers treated Latino patients with respect and sensitivity—both those who understood English well and those who did not—their patients were more likely to accept the healthcare information and adhere to the recommendations they were given. Providers, who are perceived by patients as being culturally insensitive, regardless of whether the patient spoke English, have also been reported as not trustworthy. In addition, and perhaps a more serious effect, patients viewed the providers' health information as less credible (Becerra et al., 2015).

Similar studies of breast cancer patients provide support for the findings of this study. In particular, Meguerditchian et al. (2012) revealed that the way a provider communicates with a patient can affect the patient's decision to undergo breast cancer screening. The researchers also concluded from their cohort study that the cultural sensitivity of healthcare providers shapes patient satisfaction with the provider visit, which may influence general patient behaviors, including acting on what has been recommended by the provider. Meguerditchian et al., however, claimed the need to better explain the relationships between provider cultural sensitivity and patient health. My study was designed to add to that knowledge, as it was focused on African American women with breast cancer risks.

Other studies about the effects of cultural sensitivity on African American patients also support the current study. For instance, Tucker et al. (2014) found that cultural sensitivity of healthcare providers was associated with satisfaction of African American patients. Tucker et al. also revealed that patient satisfaction subsequently leads to compliance with health recommendations and improved health outcomes. Even though Tucker et al. did not focus on African American women with breast cancer, it supports the idea that African American patients, in general, are more compliant and can better adhere to providers' recommendations when they believe they are understood better and when their cultural needs and values are respected.

Lastly, no relationship was found between early detection rates for breast cancer (Stages I and II) of African American women patients, their compliance with screening and follow-up, and the cultural sensitivity scores of medical centers where they receive

care. This means that whether African American women were diagnosed early in the course of a disease did not affect how they perceived the cultural sensitivity of the medical center where they received that diagnosis. This is a unique finding because the available literature did not establish a relationship between stage of disease and perceptions of provider cultural sensitivity. However, what some studies have shown is that perceptions are largely based on the treatment they received from their providers or centers and not for another reason. Nielsen et al. (2015), who examined Latino patients who preferred English in interactions with health care providers and those who preferred Spanish in those interactions, found that regardless of the language the provider used, both groups followed treatment recommendations at about the same rate when they perceived the provider to be culturally sensitive to them (Nielsen et al., 2015). The language of the provider was not a factor, as this was not the main measure of cultural sensitivity.

Implications of the Findings

Given that the null hypotheses of two research questions were rejected, which means the perceived cultural sensitivity of medical center has a relationship with compliance with recommended mammography screening and follow-up procedures. Healthcare organizations should seek to employ or train personnel who will employ culturally sensitive communication with patients. Cultural sensitivity, according to Tucker et al, (2013) is in fact the basis for compliance with health recommendations of providers. Many previous studies did not measure cultural sensitivity from the patient's perspective, which was determined by CAPHS as a more accurate manner to gain a true

picture of the patient's view (AHRQ, 2015). Providers helping patients with breast cancer worries and confirmed breast cancer diagnoses should strongly consider the culture of their patients—particularly the culture of African Americans—including their fears of and misconceptions about mammograms, screenings, and other recommended procedures related to breast cancer. With the knowledge of how important both early detection of cancer and cultural sensitivity are, it would enhance both the training and professional development programs for healthcare providers have this knowledge. Providers can be trained in ways to recognize their prejudices and biases and the best ways to avoid forcing their beliefs on African American women patients, whether consciously or not, as ignorance of the differences between cultures and how to handle these differences can make misunderstanding between the provider and the patient highly likely. Physicians could then be prepared to deliver cross-cultural care for African American women dealing with breast cancer worries and fears. The older study of Smedley, Stith, and Nelson (2003) increased awareness of provider communication or treatment disparities and suggested training for providers. Other studies that suggested training to gain cultural sensitivity were those by Like (2011), Mejia de Grubb, Kilbourne, Zoorob, Gonzalez, Mkanta, and Levine (2015), and Burt et al. (2015).

Several ways healthcare organizations might equip their personnel with competence and sensitivity is to include requiring providers to participate in cultural sensitivity courses, seminars, and other immersive activities. Also, apart from having a strong grasp of African American culture, providers should be trained to explain conditions in lay rather than technical terms, which patients of any culture should find

clearer and easier to understand. Providers who are not culturally sensitive are likely to persist in using technical terms instead of being considerate of their patients who may not understand the terms and need more explanations. Even though they do not intend to do so, healthcare providers who are culturally insensitive to their patients may use language that may be unintentionally condescending to their patients of African American descent, which is a point that is not lost on any patient. Training programs could help avoid these situations and their potentially dire patient outcomes, such as being noncompliant with screening recommendations and follow-up procedures. Even if they understand African American fears and concerns about mammograms and screenings, a provider's insisting on the use of complex medical terms instead of lay language might likely build a barrier between him or her and a patient, as some of the latter may be reluctant to ask for clarification (Wright et al., 2013).

The findings of this study suggest that the way a medical center communicates with a patient is important in influencing patient health behaviors regardless of whether they are diagnosed with breast cancer or the stage of their disease. This study results also suggested that if medical centers want African American women to be satisfied with their treatment, the patient must be treated with respect and understanding, particularly since healthcare organizations with high patient satisfaction ratings are those that are more likely to be profitable and successful (Brusin, 2012).

For healthcare organizations to increase their number of satisfied patients, cultural sensitivity training of providers cannot be overemphasized. Even though the current study did not specifically measure patient satisfaction, the findings suggest that culturally

sensitivity leads to more compliant patients and can lead to better health outcomes and, therefore, higher patient satisfaction.

Recommendations for Future Practice

Future researchers might build on the current study to evaluate the satisfaction of African American women going to healthcare providers for breast cancer risk assessment and diagnosis, as satisfaction can also suggest how patients will comply with treatment recommendations of providers. In addition, the current study did not evaluate whether the perceptions of patients were accurate, or if providers were truly insensitive because only medical center data not individual data, was not available for analysis. While assessing cultural sensitivity of providers is useful, patient perceptions of the cultural sensitivity of their providers are equally important, as perceptions are the same as truth to most people.

Future researchers might also compare individual physician's self-cultural sensitivity scores with patient perspectives of these physicians. Studies have shown that healthcare providers can be both aware and unaware of how they are acting towards patients from minority groups. For instance, Dovidio and Fiske (2012) found that physicians often prescribed the same treatments for patients regardless of race or ethnicity if they did not know there were differences among their patients in the first place. However, when some physicians learned the race or ethnicity of their patients, some acted differently, with the results showing that physicians recommended surgery to the minority population more frequently than to their Caucasian counterparts (Smedley et al., 2003; Tucker et al., 2011). Smedley et al. (2003), in particular, found that even with

patients who had the same heart conditions, those of different ethnicities were given varying treatment recommendations.

Tucker et al. (2011) found that culturally insensitive physicians themselves believed that African American patients were less likely to follow treatment recommendations and should be given different recommendations from those provided to Caucasian counterparts with the same disease or condition. Other studies showed that providers may be completely unaware of how they are perceived by their patients and do not realize that they are being deliberately insensitive (Stone & Moskowitz, 2011).

Regardless of whether physicians are aware or unaware, deliberate or not, patient perception is the sole element that matters regarding following through on provider recommendations; therefore, healthcare organizations should offer the right training to help providers overcome their lack of awareness of patients' needs. Organizations should be encouraged to adopt feedback and evaluation systems to ensure that providers are meeting the sensitivity and respect needs of all patients and are communicating in such a way that patients will be more likely to comply with their recommendations. Every available study has shown negative effects of perceived insensitivity, leading to not only noncompliance with physician recommendations but also dissatisfaction with the office visit and treatment. The findings of this study suggested that African American women value cultural sensitivity at their medical centers and are unlikely to trust those who lack that trait.

Limitations

The findings of this study provided insights into how cultural sensitivity of providers, based on medical center level data, tends to affect whether African American women will follow their recommendations for further breast cancer screening and follow-up. However, limitations inherent to the study must be disclosed. One of the main limitations is its context. I focused on whether the cultural sensitivity of providers based on medical center level data at the medical centers of one HMO in Southern California was associated with the compliance behaviors of one population. Using Southern California as the sole setting had limitations, as there were only 14 medical centers, each having a different percentage of African American patients when data were collected, with those in certain centers significantly lower than patients in the larger facilities in Los Angeles and West Los Angeles. As such, data from Los Angeles or West Los Angeles could have skewed the results of this study because these centers have more African American patients and the West Los Angeles location received additional training for cultural competence. The West Los Angeles center became the first Center of Excellence for Culturally Competent Care in 1999 ("Strategies for Leadership," n.d.). With the findings only from southern California, they cannot be generalized to other states or locations.

Another limitation raised in the implications of the study was that cultural sensitivity was measured using participants' perceptions shown in the MAPPS survey. There are other questions on the MAPPS survey that could possibly influence cultural sensitivity perceptions but were not included in this study. For example, physical layout

of a building, how the ancillary staff treated the patient, and other services the patients received could influence the patient's perception of culturally sensitivity of the provider

Other ways to measure cultural sensitivity might be from the perspective of the providers themselves, and it also cannot be assumed that all patient perceptions are accurate. One conclusion might have been that the low follow-up rate for treatment suggests the medical centers lacked sensitivity, but there are no data that support that. Finally, results cannot be assumed to represent all African American women.

Another limitation was that the compliance rate of African Americans was mainly derived from an internal system with a database of all women between the ages of 50 and 74, with a distinction made for compliance and noncompliance within ethnicity and age—specifically African American women between the ages of 50 and 74. I did not differentiate between patients with regard to age within this range and did not look at the effects of any potential confounders such as income or education in this result. Since age and income are related to MAPPs scores, this might represent another limitation. I could not evaluate whether age and income were related to screening compliance, even though doing so would have provided more targeted implications and recommendations, but I did not have access to those data to examine that issue. Not taking into account these differences might have affected the reliability of the data, so future researchers might create studies with greater definition among the participants. The education level of the patients might also have had an effect on compliance, as better-educated women might have a different or better understanding of a provider's advice.

Another limitation is that I examined only compliance or noncompliance and not whether the recommended actions, whether taken or not, had an impact on the recovery or mortality of patients. In the implications and interpretations of the findings, the relationship between compliance and mortality was merely assumed, in that I asserted that if African American patients chose not to comply with screening and follow-up recommendations, they could jeopardize their own health.

Medical center data was used for the study; therefore I could not consider individual providers' data. I used the mean, median, and mode scores for the cultural sensitivity of the 14 medical centers of the HMO. Medical center data are averaged from MAPPS data for each primary care department for each center. As a result, providers and departments with lower cultural sensitivity scores may not be adequately represented because individual provider data are not available.

I also was unable to include similarities or differences in patient/physician race and ethnicity as a factor in determining perceived cultural sensitivity of medical centers. I also did not seek to determine if the number of African American healthcare providers employed by a specific center affected the perceptions of cultural sensitivity rating of these medical centers. More African American healthcare providers might result in African American patients perceiving the centers are more culturally sensitive (Tucker et al., 2011), but the data were not available.

A final limitation is that I did not differentiate among the income levels of participants, which might also affect how they perceived cultural sensitivity of a medical center or whether they complied with provider recommendations. Different income levels

of African American women would lead to different lifestyles and perceptions of medical

services that might affect their perceptions of cultural sensitivity and compliance. It is

reasonable to believe that women from a higher socioeconomic class would not have the

same perceptions as those from a lower socioeconomic class. It might also have revealed

whether cost was a factor in following recommendations for further testing. Data on

income were also unavailable.

Recommendations

Several recommendations for future research are suggested from the findings and

limitations of the current study. The fact that cultural sensitivity was measured only by

the perception of patients does not invalidate the findings but suggests a limitation that

future researchers might consider. However, self-reports of cultural sensitivity of

healthcare providers could be affected by multiple factors outside the actual behavior and

communication skills of those providers, and future researchers should be mindful of

those. Future researchers might focus on the same topic, but unlike my study, they might

be able to secure primary rather than secondary data for patient/provider interactions at

the provider level.

Future researchers might observe interactions and even conduct interviews in a

qualitative study or even in a mixed methods study. If future researchers interview breast

cancer patients and gather their perceptions of their experiences with their providers, the

data might provide reasons for their ratings. Real-time provider/patient interaction,

encompassing observations of nonverbal cues, might also add useful information in

further research. Considering the subsequent mortality rates of minority patients who do

not follow provider recommendations might reveal whether the cultural sensitivity of providers might have had a long-term effect.

Future researchers might compare low-income African American women's perceptions to middle class or high-income African American women's perceptions. In addition, they might compare African American women's perceptions of cultural sensitivity to the perceptions of other racial minorities, such as Hispanic/Latina women, as both income and race can be factors affecting perceptions. High-income African American women may perceive cultural sensitivity of providers differently from low-income African American women. Hispanic women may perceive cultural sensitivity differently from African American women, even if both are racial minorities.

Future researchers might consider individual providers rather than medical centers as a whole for better and more reliable findings. Following this approach might mean that providers and departments with lower cultural sensitivity scores might not be adequately represented, but those data were not available for this study. I also did not consider an association between breast cancer screening compliance and early detection of breast cancer. I also did not consider individual providers with regard to their unique manifestations of sensitivity in the eyes of the patients and instead used the mean, median, and mode scores for the cultural sensitivity of the 14 medical centers of the HMO. To account for individual providers' sensitivity, future researchers might seek individual provider data, but that data were not available for this study.

Future research might include more medical center level data from the same MAPPS survey the patient completed for cultural sensitivity. Questions scoring

interactions with other health care works, such as laboratory technicians, x-ray technologists, or specialty medical providers are included on the MAPPS survey. Additionally, questions regarding the physical environment of the medical center are also included on the MAPPS. Perhaps, these other factors may have an affect on cultural sensitivity perceptions. These variables could be included in future studies as covariates in the regressions.

Conclusion

The study was designed to learn the extent to which breast cancer screening and follow-up compliance behaviors of African American women and if compliance resulted in early detection are linked to or influenced by the cultural sensitivity of medical centers. Results showed a significant association between mammogram screening compliance and patients' perceptions of the cultural sensitivity of the medical center. Results also indicated that there is a significant association between breast cancer screening follow-up visit compliance and perceived cultural sensitivity of the medical center, based on MAPPS data. African American women with breast cancer risks who rated their medical center lower on cultural sensitivity were also less likely to be mammogram-screening compliant or likely to return for a follow-up screening within the time recommended by the healthcare provider after a mammogram. Lastly, there was no relationship between early detection rates for breast cancer (Stages I and II) of African American women patients, their compliance with screening and follow-up, and the cultural sensitivity scores of medical centers where they receive care. This means that whether African American women received their diagnosis early was not associated with the cultural

sensitivity ratings of the medical center where they received care. Overall, the findings suggested that the value of the cultural sensitivity of a medical center should not be underestimated. The results of this study may provide an awareness for medical centers that the cultural sensitivity of providers who treat African American women patients may affect those patients' breast cancer screening and follow-up compliance rates and, ultimately, their lives.

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Appendix: CAHPS Questionnaire

Were the providers polite and considerate?

- Provider talked too fast.

- Provider interrupted when patient was talking.

- Provider used a condescending, sarcastic, or rude tone or manner with the patient.

The cultural competency section also includes five statements that reveal whether the

provider was caring and inspired trust. The statements are as follows:

- Providers were caring and inspired trust.

- Patient could tell provider anything.

- Patient could trust provider with medical care.

- Provider always told patient the truth about health.

- Provider appeared to care as much as patient did about patient health.

- Provider cared about patient as a person (showed care and concern from the

  perspective of the patient).