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Healthcare Access for Elderly African American Type 2 Diabetics on Medicare

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Walden University
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Abstract

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Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

Prior research has shown that African Americans have less access to healthcare than do White Americans. The study's purpose was to determine the association between race/ethnicity and quality care measures in a population of Medicare recipients with Type 2 diabetes, aged 65-75 years and over. Covariates predicted satisfaction with doctor care, compassionate doctor care, and indifferent doctor care using Andersen's health behavior theory. The Medicare Current Beneficiary Survey (MCBS) sample consisted of 1,716 people with Type 2 diabetes, with most (76.6%) being non-Hispanic Whites, and the remainder non-Hispanic Blacks (10.8%) and Hispanics (12.6%). Race/ethnicity were associated with quality-of-care measures assessed by one-way analysis of variance, with multiple regression showing racial and ethnic differences. Satisfaction with doctor care was higher for Hispanic Americans under 75 years of age, respondents who were male, and those who had fewer than 4.5 chronic conditions, $F(7, 1708) = 9.30$, $p = .001$, $R^2 = .037$. No racial/ethnic differences were shown on compassionate doctor care, although increased adherence existed for all groups, $F(7, 1708) = 3.09$, $p = .003$, $R^2 = .013$. Indifferent doctor care revealed racial/ethnic differences between the three groups. Differences were higher for Hispanic respondents and those with more chronic conditions and low adherence frequency, $F(7, 1708) = 4.64$, $p = .001$, $R^2 = .019$. Differences found that enhance the positive social change imperative of providing care through the patient-centered medical home may compel further research. Policymakers should consider this innovative model to reduce healthcare disparities.

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Dedication

Without family support, this endeavor could not come to completion especially for those who encounter the ravages of diabetes and the inequities in healthcare that exist.

Acknowledgments

Thanks to God for his grace and guidance in pursuing this research. With the support of Anita (wife), sons Brian and Justin, and their children, this research has been accomplished. Sincere appreciation goes to Dr. Chester Jones, Dr. Heba Athar, and Dr. W. Sumner Davis for their advice and recommendations in conducting this study. Additional thanks go to Dr. Vasileios Margaritis, Dr. Zin Hitway, Dr. Michael Furukawa, Dr. Max Michael, and Dr. Tom Granoff for support and guidance as needed. Special thanks to my parents William and Juanita Floyd for the inspiration and drive needed to pursue further education.

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Section 1: Foundation of the Study and Literature Review

Overcoming barriers that prevent access to healthcare would significantly contribute to the improvement of health status in older African Americans on Medicare with Type 2 diabetes mellitus (T2DM). The barriers faced include no access or limited access to healthcare providers and healthcare facilities, inconsistent preventive behaviors, nonadherence to prescribed medications, inability to obtain timely care, insufficient health literacy, lack of trust, and racism (Tarraf et al., 2017). Elderly individuals are those 65 years of age or older, for whom accessibility of health care results in improved health status and outcomes despite the disparities that are encountered (Smalls et al., 2020). For example, in a study assessing glycemic control and medication adherence in an insured diabetic population, findings showed that access to care resulted in similar glycemic levels regardless of racial and ethnic background (Goonesekera et al., 2015). On the other hand, African Americans with fragmented access to healthcare exhibited inadequate glycemic control and failed to adhere to medication regimens when prescribed several different costly medications to manage their T2DM (Goonsekera et al., 2015). Regular visits to the primary care provider improve the quality and quantity of life (Gooseberry et al., 2015). Earlier research showed that older African Americans (those over 65, morbid, frail with numerous healthcare needs, and comorbidities) on Medicare have less access to care compared to their White counterparts (Centers for Disease Control and Prevention [CDC], 2018). Improving access to care for this vulnerable population is achieved by

implementing programs that increase healthcare services access. This study aimed to determine the relationship between race, Type 2 diabetes, and measures of quality care that may be associated with the satisfactory delivery of care, the provision of compassionate or indifferent care by doctors.

Problem Statement

Improving access to healthcare services for elderly African American Type 2 diabetics on Medicare improves health and quality of life. Medicare, a federal health insurance program for U.S. citizens 65 years of age or older provides coverage for medical expenses incurred by hospital stays, doctor's visits, preventive screenings, and medications (Centers for Medicare & Medicaid Services [CMS], 2018). However, having Medicare may not result in equal access to care or a regular primary care provider or care site. Older African Americans with T2DM and several comorbidities see numerous healthcare providers and specialists and face unorganized primary care devoid of quality (Chan et al., 2019). Hospital outpatient departments and emergency rooms are utilized more often by this population, compared to their White counterparts, as a regular source of care to meet health care needs (Hochman & Asch, 2017; Moon & Choi, 2018).

The patient-centered medical home (PCMH) is a possible solution to the limited access to primary care providers and unstructured primary care. The chronic care model of primary care and standards established by the National Committee for Quality Assurance (NCQA, 2019) and the American College of Physicians (2019) serve as the building blocks of the standards that constitute the PCMH model. PCMH's effect on

healthcare disparities warrants further evaluation to explore its advantages to improve healthcare access for elderly minority populations such as African Americans and Latinos (NCQA, 2019; Tarraf et al., 2017). The Veterans Administration Patient Aligned Care Team Initiative program is an example of a PCMH model used to decrease racial and ethnic differences and to improve access to available healthcare services (Washington et al., 2017).

Purpose of the Study

The purpose of this study was to determine if being African American was associated with the overall satisfaction with the delivery of doctor care, with the provision of compassionate doctor care, and whether the provision of indifferent doctor care was influential in increasing or decreasing access to healthcare in an elderly population of people with Type 2 diabetes on Medicare.

Research Questions and Hypotheses

The following research questions guided this study:

RQ1: What is the association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and the level of satisfaction with the doctor?

$H_0$1: There is no association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and the level of satisfaction with the doctor.

H_a1: There is an association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and the level of satisfaction with the doctor.

RQ2: What is the association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and the level of compassionate doctor care?

H_o2: There is no association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and the level of compassionate doctor care.

H_a2: There is an association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and the level of compassionate doctor care.

RQ3: What is the association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and the level of indifferent doctor care?

H_o3: There is no association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and the level of indifferent doctor care.

H_a3: There is an association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and the level of indifferent doctor care.

RQ4: What is the association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and doctor satisfaction while controlling for frequency of adherence to medications and patient demographics?

H_o4: There is no association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and doctor satisfaction while controlling for frequency of adherence to medications and patient demographics.

H_a4: There is an association between race and ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and doctor satisfaction while controlling for frequency of adherence to medications and patient demographics.

RQ5: What is the association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and compassionate doctor care while controlling for frequency of adherence to medications and patient demographics?

H_o5: There is no association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and compassionate doctor care while controlling for frequency of adherence to medications and patient demographics.

H_a5: There is an association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and compassionate doctor care while controlling for frequency of adherence to medications and patient demographics.

RQ6: What is the association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and indifferent doctor care while controlling for frequency of adherence to medications and patient demographics?

H_o6: There is no association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and indifferent doctor care while controlling for frequency of adherence to medications and patient demographics.

H_a6: There is an association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and indifferent doctor care while controlling for frequency of adherence to medications and patient demographics.

Theoretical and/or Conceptual Framework

The methods in which healthcare access influences health-seeking behaviors were assessed through a theoretical framework. Behaviors may be affected by race, age,

gender, satisfaction with care, utilization of healthcare services, delivery of patient-centered care, and perceived healthcare need and prevention. The behavioral model used is a derivative of the social cognitive theory, the precede-proceed model, and the health belief model. This conceptualized model widely used in health education was developed in 1973 and has undergone four iterations since its initial formation (Goldberg et al., 2000). The model illustrates how and why individuals access and utilize healthcare services through the healthcare system. Predisposing, enabling, and need are the essential conceptual components of this framework (Gilbert et al., 2000). Predisposing demographic elements such as age and gender lead individuals to seek requisite care, whereas enabling factors such as health insurance empower individuals to seek healthcare services (Andersen, 1995). Need is determined by one's perception of health status or state of health evaluated by a provider (Andersen, 1995). Consequently, based on the model, effective and efficient access is propagated by the predisposing, enabling, and need factors that increase the use of and satisfaction with medical services delivered (Andersen, 1995).

Nature of the Study

An ex post facto, nonexperimental research design was used to answer the research questions posed in this quantitative study. Evaluating the independent and dependent variables' efficacy determines the probability of associations using predictive research questions. The descriptive analysis compares the predictor variable race (i.e., African Americans) to White and Hispanic Americans along with predisposing variables

that include age, and gender. Enabling factors were those dependent variables that enhance one's capacity to access healthcare through health insurance to gain access to healthcare facilities or services. Need for care was determined by using clinical characteristics Basal Metabolic Index (BMI), the number of chronic conditions, and frequency of medication adherence. Chronic conditions such as diabetes with increased obesity in the elderly are associated with increased morbidity and mortality due to prolonged disease burden (Rahman et al., 2018). Further, the quality-of-care measures used, such as satisfaction with doctor care, provider compassion care, and indifference, are those thought to be determinants of access to healthcare.

Literature Search Strategy

This literature review included the following databases: CINAHL, Medline, ProQuest Health & Medical Collection, Google Scholar, Google Scholar alerts, and Science Direct. Search terms used were *access to care, Medicare, elderly, African American, diabetes mellitus, primary care, patient-centered medical home, usual source of care, behavioral theory, medication adherence, utilization, patient satisfaction,* and *healthcare quality*. This review focused on providing information from peer-reviewed journals for a 5-year period, 2015-2020.

Theoretical Framework

Because the aim of this study was to determine whether relationships existed between race and access to healthcare, I needed a theoretical framework that could be used to assess patients' health-seeking behaviors with chronic illnesses such as T2DM.

In this research study, I used Andersen's behavioral theory to describe how health behavior (healthcare access) is influenced by race, age, or gender, insurance, and clinical elements of BMI and chronic conditions establishing need (Gelbert et al., 2000).

Overall, Andersen's model aligns with the research questions and hypotheses developed for this study. Ryvicker and Sridharan (2018) reported that psychosocial attributes of care are significant predictors of health services use. Environmental features exhibited in the ecological model of aging in conjunction with Andersen's health behavior theory promote the assimilation of possibilities and limitations toward health services access and utilization (Ryvicker & Sridharan, 2018). Further, this research study conducted by Ryvicker & Sridharan (2018) indicated that elderly people with Type 2 diabetes and increased needs due to chronic conditions where the frequency of adherence to medications is high, compassion, indifference, and satisfaction with doctor care are essential psychosocial traits that influence the propensity to access healthcare.

Literature Related to Key Variables and/or Concepts

Healthcare Access

African American Type 2 diabetics on Medicare can benefit from patient-centered access through reformed primary care practices and hospital-based ambulatory clinics using principles of the PCMH. Access to services provided in the medical home includes care delivered that is patient-centered to meet patient and family needs free of disparities (Figueira et al., 2018). For vulnerable minority populations, including the elderly, access

to healthcare is crucial to improving quality of life and health status, especially for those with diabetes (Figueira et al., 2018). Consequently, access to diabetes care for adults 65-75 years and over, results in improved glycemic control, leading to a reduction in hospitalizations and a decrease in unnecessary use of medical services (Abdelhafiz et al., 2015). Older patients with T2DM are a varied group in which the state of health ranges from healthy and able to complete independent activities of daily living to people with diabetes who are very old (> 75 years of age), frail, and subject to several comorbidities (Abdelhafiz et al., 2015). Therefore, there is a need for access to patient-centered care and treatment for older diabetics, though more research will be required to validate these assertions (Abdelhafiz et al., 2015).

Further studies on accessibility have confirmed that minority populations, especially elderly African Americans, are sicker and use primary care medical services much less than their white counterparts (Adini, 2019). Inequities in healthcare access for this vulnerable group may be due to relational issues such as provider mistrust, low literacy, as well as the lack of an optimal number of primary care providers, and access to care through flexible appointments, such as on weekends or after hours (Adini, 2019; Tarraf et al., 2017). Further, older racial-ethnic minorities with T2DM have less access to office visits due to environmental factors such as transportation and non-walkable communities (Ryvicker & Sridharan, 2018). The resulting outcome is more frequent hospitalizations emanating from the absence of preventive care (Ryvicker & Sridharan, 2018). Several studies have indicated that the lack of access to care occurs due to racial

disparities and inequities in healthcare (Butkas et al., 2020). Social determinants are attributed to stigmatization by race and ethnicity, gender, age, socioeconomic status, culture, religious practices, low health literacy, and social structures (Butkas et al., 2020). Thus, removing or limiting these barriers may account for better access to care, quality of life, and improved health status in the elderly Type 2 diabetic on Medicare (Butkas et al., 2020).

Patient-Centered Access

African American T2DM patients on Medicare can benefit from patient-centered access through reformed primary care practices and hospital-based ambulatory clinics using principles incorporated in the PCMH. Improving access to services includes ensuring that the care delivered is patient-centered with accessibility to meet patient and family needs and reduce disparities (Tarraf et al., 2017). A cross-sectional study involving a patient base that was 45% Black and Hispanic utilizing federally funded primary care centers and patient experience (90% satisfaction rate) revealed that patient-centric care was essential in assessing patient perceptions about care received (Cook et al., 2015). A primary consideration of patient-centered access was the provision of care that was relational and offered with compassion, and that included the availability of options to make appointments by phone or email (Cook et al. 2015; Nuti et al., 2015). Additional literature review revealed that African Americans encountered barriers in gaining timely appointments because of racial differences (Wisenewski & Walker, 2020). A cross-sectional study of urban primary care practices using Black, White, and Latino

patients discovered that Black patients could not obtain timely appointments and were required to wait longer to get future appointments more often than White patients (Wisenewski & Walker, 2020). The primary reason for not giving timely appointments to Black patients stemmed from the receptionist's ability to identify Black patients by voice and by asking questions about insurance status. Regardless, Black patients with insurance received appointments despite the inference of race.

Quality of Care Process Measures

The absence of quality care affects access through the negative associations encountered by patients with chronic illnesses who perceive a lack of patient-centered care from their usual source or care provider. More specifically, provider attitudes, lack of professionalism, and cultural insensitivity to patient need dramatically reduce access and attention to preventive health practices for African Americans and other ethnicities (Hong et al., 2018). Providers who seem hurried or rushed to complete the patient encounter without discussing or answering questions regarding the patient's care create distrust and the perception of discrimination. Thus, rushed encounters alter the patient-provider relationship, impacting the need to seek or continue routine medical care. (Diamantitis, 2019; Hong et al., 2018). Among White adults with diabetes in the United States, approximately 75% had two or more HbA1c screenings, 65% had one eye exam, and 85% had a cholesterol test, whereas non-Hispanic Black diabetics and other ethnic groups had a smaller percentage of these screening tests performed (Canedo et al., 2017).

Health problems and healthcare expenses and deaths decrease when the patient-provider relationship improves (Canedo et al., 2017).

The American Diabetes Association's (ADA, 2019) Standards of Care for older diabetic patients emphasizes that individualized care is most important in this patient population and positively affects access and the continuation and adjustment to preventive care services. Clinical measures of quality care include but are not limited to blood pressure screening and control, cholesterol screening, blood glucose testing, cognitive ability testing, adherence to medications, reducing polypharmacy, and improved patient satisfaction (ADA, 2019). Further, in older adults with diabetes, these quality care measures must be individualized, including but not limited to relaxing stringent glycemic goals to lessen hypoglycemia (ADA, 2019).

Usual Source or Place of Care

The availability of a usual source or place of care is an essential factor that affects access to healthcare for elderly African Americans with T2DM on Medicare. According to the CDC (2020), in a report detailing the burden of diabetes in the United States, approximately 78% of individuals with diagnosed diabetes had at minimum one usual source of care that was either a physician, place, or other healthcare provider. The implementation of PCMH programs for the elderly and other high-risk patients with T2DM should consider patient perceptions regarding usual care sources. Findings from a qualitative study showed that barriers to seeking preventive care through PCMH interventions occurred when the patients had several concerns regarding attitudes toward

them when seeking care (Raja et al., 2015). A similar study indicated that providers should treat elderly patients with dignity regardless of insurance status, be sensitive to cultural differences, and recognize their need to have a consistent provider managing all aspects of their care (Rosland et al., 2017). Several studies have also focused on the phenomenon concerning healthcare access and behaviors toward African Americans. In communities divided by race and demographics, when African Americans perceive distrust in seeking healthcare from providers in ambulatory clinics and primary care practices, they prefer to use the emergency department as their regular source of care (Arnett et al., 2016). The PCMH may be an effective alternative source of primary care acceptable to African Americans to reduce racial disparities. The positive attributes of having a usual source or place of care are grounded in comprehensive, patient-centered, and continuous care provided to elderly patients in managing their chronic conditions (Arnett et al., 2016). Medicare is an enabling factor that increases access to care to decrease the need for elderly patients to rely on the emergency room as their site of care (Arnett et al., 2016). The source of care available in the way of a PCMH might be amenable to elderly African American Medicare beneficiaries with T2DM (Arnett et al., 2016).

The availability of a usual source or place of care also decreases inpatient admissions and emergency room utilization for episodic care in high-risk patients with T2DM and some mental health conditions (Fullerton et al., 2017). Having a usual care provider or site reduced the need for using exogenous sources for primary care because of

the continuity and comprehensiveness of care provided (Fullerton et al., 2017). It is plausible that older African Americans benefit from access to care provided in PCMH's rather than small practices and ambulatory care centers even though they have Medicare and if prior studies show mixed results. Additionally, the findings of Tarraf et al., (2017) further suggested that African Americans living in the southern region of the United States were predisposed to having less access to a usual source or place of care than White Americans at 58% and 35.3%, respectively. More specifically, African Americans living in the South had consistently reduced access to a primary care provider and less access to available appointments.

Patient Satisfaction

Access to healthcare for those Medicare recipients connected to a medical home through the Medicare program encountered decreased inequities and improved patient satisfaction (NCQA, 2019). Patient experience and communication through the patient-physician relationship affect satisfaction with healthcare delivery for elderly African Americans with diabetes and other chronic illnesses (Prakash, 2018). In a qualitative analysis of several databases, factors that affected patient satisfaction were those experiences based on insufficient communication and the inadequate use of resources by providers, resulting in dissatisfaction with care delivery transitioning to medication regimen nonadherence (Rocque & Leanza, 2015). Findings from this analysis indicated that for African Americans compared to other ethnicities, poor communication from negative experiences such as being disrespected by providers, discriminatory practices,

inadequate time spent with the patient by the provider, as well as powerlessness from feeling stigmatized result in adverse patient satisfaction. Improved communication and compassionate provider relational skills result in affirmative actions and outcomes for African American patients, and other minority groups as well. Therefore, the accentuation of access to healthcare manifests itself through positive patient satisfaction, which culminates in better patient self-care and a commitment to follow medication regimens (Rocque & Leanza, 2015).

Utilization

A review of several studies revealed that African Americans 65-75 years of age and over have a higher percentage of the population with diabetes than the White population of the same age group (13.0% vs. 8.0%, respectively; CDC, 2019). Poor glycemic control, complications such as end-stage renal disease, and fewer screenings, characterize the morbidity associated with older African Americans (Kiefer et al., 2015). Older African Americans with T2DM have higher rates of hospitalizations with longer lengths of stay and poorer outcomes than their White counterparts with nonroutine discharges and more than one comorbidity (Nataraj et al., 2017). Further, readmissions occurred more often in African Americans with diabetes following 30-day release (Rubin, 2015). This phenomenon was due to the number of comorbidities, being male, leaving the hospital against medical advice, income status, lack of understanding of discharge instructions, and missing outpatient follow-up appointments after hospital discharge (Rubin, 2015). Contrastingly, in a study of the healthcare utilization habits of

Pacific Islanders on Medicare, findings indicated that lack of a usual source or place of care stood out as a barrier to utilizing accessible services notwithstanding the effects of culture and health literacy (Gandhi et al., 2018). Even though Medicare provides coverage for all individuals over 65 years of age, vast underutilization of services occurs for example, in Pacific Islanders with chronic conditions such as T2DM compared to Whites (Ghandi et al., 2018). Similarly, in a study of an urban population of African Americans living in metropolitan South Los Angeles, California, this population was found to significantly overuse the emergency room and providers as regular care sources for chronic medical conditions (Bazargan et al., 2019). Thus, regardless of the ethnic or racial group, transformative modalities to improve service utilization to improve outcomes should expand service accessibility (Bazargan et al., 2019). Patients with chronic illnesses utilize healthcare because of their need for care to acquire information and improve their disease state to function as healthily as possible (Committee on Health Care Utilization and Adults with Disabilities, 2018).

Medication Adherence

The provision of primary care through the PCMH may be an appropriate venue to ensure adherence to medications for managing Type 2 diabetes care in older patients. This model establishes a single point of care structured to have services provided by an identified usual source of care provider or place through a cadre of professionals offering team-based care (NCQA, 2019). Older patients with chronic illnesses such as T2DM and several comorbidities require care management from a single provider or team that

reduces the need for the older patient to seek care from numerous specialists (Adams et al., 2015). Nonmodifiable factors such as cultural beliefs and social connections mediate medical adherence as do modifiable influences such as relationships between the older patient and the usual care provider or source of care (Adams et al., 2015). Furthermore, in a series of studies determining mediators to medication adherence by race, findings indicated that increasing medication compliance would improve HbA1c control, significantly reducing differences in outcomes (Adams et al., 2015). Newly enrolled Medicaid patients with diabetes in a medical home who received new medications had a higher proportion of days covered through adherence to prescribed medications than patients not enrolled in the medical home (Beadles et al., 2015). Thus, reviews of studies from various databases using a randomized controlled trial determined that medication adherence improved for older adults with chronic diseases through behavioral and educational approaches and pharmacist-directed programs (Marcum et al., 2017). This behavioral and educational approach provided adherence therapy through seven weekly one-on-one sessions at the patients' residence, improving self-reported compliance with medication regimens (Marcum et al., 2017). Furthermore, utilizing pharmacist instructions one day before hospital discharge significantly improved adherence at follow-up (Marcum et al., 2017). Hence, from the review of the results attained from the noted studies, the PCMH model and its tenets of patient-centered, team-based care present important qualities in improving access to care and adherence to medications for African American Type 2 diabetics on Medicare.

Medicare

Under the Medicare program, beneficiaries receive benefits under Part A that cover inpatient hospital and skilled nursing care. In contrast, Part B includes doctor visits and outpatient care, and Part D provides prescription drug coverage that lowers high out of pocket costs for needed medications (Patient Protection and Affordable Care Act [ACA], 2010). However, once the Medicare beneficiaries' total out-of-pocket costs exceed the allotted limit, access to care may be limited due to the lack of personal resources (Myerson & Laiteerapong, 2016). Medicare patients with T2DM receive the same benefits without copays, coinsurance, and high deductibles, allowing them to manage comorbid conditions better to improve health outcomes (Shih et al., 2015). An additional review of the literature revealed the American College of Physicians' thoughts regarding healthcare in America and the methods such as the ACA to improve accessibility to healthcare. Healthcare in the United States is too costly, encourages inequities and disparities in access to care, and leaves too many patients who need care without care, further neglecting primary care and public health (Doherty et al., 2020). Implementation of innovative models of care, such as the PCMH, has the propensity to provide access to healthcare for older Medicare patients with chronic conditions.

Hopefully, the Medicare program will reduce the effects of diabetes on the elderly in the coming years. Although the prevalence of T2DM among older adults has increased, patient-centered care programs promoted by Medicare that utilize a team approach may be significant in meeting the cultural needs of affected individuals

(Beverly et al., 2016; Bigelow & Freeland, 2017). Diabetes affects more than 29 million people in the United States alone and will require the implementation of patient-centered and compassionate care to treat and manage the disease in the older population (Freeman-Hildreth et al., 2019).

The ACA

The ACA was enacted in March of 2010 as a remedy to provide access to health insurance coverage to the uninsured population of the United States with income levels between 100% and 400% of the federal poverty level (ACA, 2010). The ACA benefits for uninsured patients with Type 1 and Type 2 diabetes are the provisions of screening and preventive services, leading to the management and treatment of the disease and lessening the effects of chronic conditions (Myerson & Laiteerapong, 2016). The ACA provides benefits for the diabetic patient that reduces high out of pocket costs and removes the cost barrier (Myerson and Laiteerapong, 2016). One of the features of the ACA is a provision in the act that highlights the need to create new healthcare models to improve primary care delivery. The provision of evidence-based patient-centered care in multigroup physician practices, hospitals, and other providers of coordinated care to Medicare patients such as accountable care organizations (ACOs), comprehensive primary care initiatives, and PCMHs are projects that increase access to care (ACA, 2010). The delivery of care to the insured and the uninsured diabetic individuals through the PCMH program has proven to be comprehensive and continuous (ACA, 2010; Myerson & Laiteerapong, 2016). Due to the fragile nature of the law, the ACA's benefits

are yet to be determined. One aspect of the law is the ability for each state to participate in the Medicaid expansion program that will allow uninsured patients, including people with diabetes access to needed care and services (ACA, 2010). People with T2DM will benefit from the provisions of the act for preventive care offering treatment for hypertension, cholesterol, nutritional recommendations, and obesity counseling (Shi et al., 2015).

PCMHs

Implementing new modes of care for treating chronic conditions such as T2DM has been ongoing by various entities. Physician organizations such as the American Association of Family Physicians and establishments such as the NCQA were instrumental in designing new primary care initiatives to improve and transform care for all patient types (Group Health Research Institute, 2020). Care redesign efforts using the PCMH model to improve primary care access for target patient populations are useful (Aysola et al., 2015; Cline et al., 2018). The impact of PCMH's on the reformation of primary care has been endorsed by the ACA initially through the launch of the Comprehensive Primary Care Initiative of 2012 by the Centers for Medicaid and Medicare Services (Peikes et al., 2018). Five core areas of the PCMH program that include patient access and continuity and coordination of care emanate from the principles of the Chronic Care Model (Group Health Research Institute, 2020). Foundations of the community, the health system, self-management support, delivery system design, decision support, and clinical information systems sprang from this model

(Group Health Research Institute, 2020). Refinement of these elements became the precursors to the six (6) current standards of PCMH's to decrease primary care fragmentation, improve chronic care treatment, and enhance patient-centric access to care (NCQA, 2019). Team-based care and organization, knowing and managing patients, patient-centered access, and continuity, care management and care coordination, care transition and performance measurement, and quality improvement reflect the updated 2017 Standards and Guidelines for recognition as a PCMH (NCQA, 2019).

Implementation of these program concepts certifies/recognizes primary care practices, ACOs, federally qualified health centers (FQHC), and hospital outpatient departments as PCMH's. Small primary care practices and ACOs that implemented the PCMH domains have realized improved access by producing efficient and less costly patient care through reduced service utilization (Cuellar et al., 2016). Significant reductions in emergency room utilization and hospitalizations have stemmed from better T2DM management than improved access to care (David et al., 2014). Studies that have looked at primary care transformation efforts to reduce hospitalizations, emergency department use, and mortality in older adults have shown mixed results. Intensive primary care initiatives were implemented and designated as home-based, clinic-based, and specialized primary care entities to treat frail geriatric patients with team-oriented care provided by physicians, nurse practitioners, dietitians, and other professionals (Edwards et al., 2017). As a result, these programs showed modest decreases in hospitalizations, patient deaths, and emergency room usage, even though care was

managed and coordinated across different settings (Edwards et al., 2017). Although these programs showed negligible results from their implementation, they provided the impetus for using more integrated systems such as PCMH's to provide care for the high-needs elderly patient population (Edwards et al., 2017). Various studies also indicate innovative applications of the PCMH model in Medicare demonstration projects through Veteran's Administration outpatient clinics, FQHC's, and efforts to implement PCMH domains in small primary care practices. In a Medicare multi-payer state demonstration project involving eight states and certified and non-certified PCMH's, the Medicare program realized cost-savings through implementing care that was patient-centered, comprehensive, and team-based with enhanced patient access (Burton et al., 2018). As the project developed, an additional finding was that these state-run demonstrations realized cost savings for Medicare recipients and corresponding improvements in outcomes generated from reductions in hospitalizations, and prevention efforts (Burton et al., 2018). Cost savings were more pronounced over a more extended period of program implementation (three years) and if the PCMH state-run programs had attained certification (Burton et al., 2018).

Furthermore, implementation of the PCMH model in Veterans Administration programs has improved the delivery of primary care and reduced racial disparities in veterans with Type 2 diabetes, through a program known as the Patient-Aligned Care Team (Woodward et al., 2018). This approach offered person-centric team-based care to veterans to learn whether measures to improve glycemic and dyslipidemia outcomes were

effective after PCMH implementation (Woodward et al., 2018). Findings indicated that glycemic control improved marginally in a select group of veterans, male, and female, and pre and post PCMH implementation with lipid control showing almost no improvement (Rosalind et al., 2018; Woodward et al., 2018). These findings reiterated those found in other studies from initiatives implemented in FQHCs. Results from advanced FQHCs (those using NCQA certification standards) found that lipid testing and retinopathy screening were higher in the certified initiatives than non-certified or less advanced PCMH programs for their Medicare patients (Timbie et al., 2017). Additionally, those entities who were advanced PCMH programs with high patient visits and continuous care reported increased referrals to specialty physicians and emergency departments even though care provided to the Medicare recipients improved their healthcare outcomes (Timbie et al., 2018).

PCMHs' effectiveness in transforming primary care through a retrospective review of the literature provided an analysis of several payer based PCMH initiatives (Sinaiko et al., 2017). Results contradicting findings from earlier studies showed that the PCMH model's implementation produced cost-savings (Sinaiko et al., 2017). Savings stemmed from reduced hospitalizations and emergency room visits and improvements in quality indicators of HbA1c levels, lipid ratios, and dilated eye exams (Sinaiko et al., 2017). Results from other initiatives evaluated and reviewed by Sinaiko et al. (2017) also determined that PCMH conversion did not result in cost savings from decreased hospital services utilization, nor were there improvements in the three quality measures evaluated

for T2DM management. In the final analysis, it is the framework used to develop PCMH initiatives that determine their effectiveness (Sinaiko et al., 2017). PCMH's formed on foundations to improve access for patients with chronic conditions promoting team-directed care compared to those created through the context of patient-centered access and continuity have been deemed more successful (Sinaiko et al., 2017). The realization of these facts may justify the financial incentives made by large multi-provider practices, Medicare, and Commercial Payers, in their attempts to redesign primary care and improve access to healthcare.

While the need to improve care for elderly African Americans with T2DM is vital, how the medical home evolves should be noted. In a review of three primary care clinics certified as PCMH's for senior care, all the PCMH model elements were not implemented due to physician and staff reluctance (Hoff & DePuccio, 2016). Reasons cited by the staff rejecting the implementation of all the standards were the lack of time available to complete patient assessments along with the staff's inability to coordinate senior patient care from various settings due to the lack of required medical record and other necessary patient information from specialists (Hoff & DePuccio, 2016). Being a recognized PCMH may not be enough to fill the gaps in care or promote access for elderly patients on Medicare with a chronic disease such as Type 2 diabetes.

Definitions

Access to healthcare: Refers to the ease with which a patient can initiate an interaction for any health problem with a clinician (e.g., by phone or at a treatment location) and includes efforts to eliminate barriers such as those posed by geography, transportation, administrative hurdles, financing, culture, and language (Doherty et al., 2020).

African American: An American of Black African ancestry (Merriam-Webster. (n.d.).

Beneficiary: Refers to a person sampled for participation in the Medicare Current Beneficiary Survey (MCBS) interview or one who receives Medicare and not included in the MCBS interview (CMS, 2018).

Continuously enrolled: Medicare beneficiaries who enrolled from day 1 of the calendar year who had not died before the fall round of interviews (CMS, 2018).

Diabetes mellitus: Is a disease of the endocrine system where the body does not produce insulin or uses insulin properly. The body does not metabolize carbohydrates through this mechanism, and elevated glucose becomes concentrated in the blood and urine (American Diabetes Association, 2020).

Ever enrolled: Those beneficiaries of the Medicare program enrolled at any point in time during the calendar year, who died or withdrew before their fall interview (CMS, 2018).

Healthcare services: Refer to an assortment of services that healthcare professionals perform under their direction to promote, maintain, or restore optimal health (Doherty et al., 2020).

Medicare beneficiary: One who is 65 years of age or older, less than 65 years of age and disabled, or any age with End-Stage Renal Disease (ESRD) and is eligible for insurance benefits (CMS,2018).

Medicare: A federal health insurance program for U.S. citizens 65 years of age or older, which provides medical coverage toward medical expenses incurred for hospital stays doctor's visits, preventive screenings, and medications (CMS, 2018).

Medication adherence: Situations in which providers prescribe medications that result in timely compliance and taking medications correctly to decrease illness symptoms and improve care outcomes (Smaje et al., 2018).

National Committee for Quality Assurance PCMH Standards and Guidelines: The NCQA establishes guidelines for program recognition consisting of concepts, competencies, and criteria required for certification as a PCMH. Attaining full recognition occurs when organizations or practices meet 40 core criteria and earn 25 credits in elective criteria across 5 of the six concepts. Earning a combination of 1-credit and 2-credit elections is the minimum required for recognition. The six concepts of the recognition program are as follows:

- Team-Based Care and Practice Organization (TC)
- Knowing and Managing Patients (KM)

- Patient-Centered Access and Continuity (PAC)
- Care management and Support (CM)
- Care Coordination and Care Transitions (CC)
- Performance Measurement and Quality Improvement (QI)

(NCQA, 2019)

Old/Elderly: That segment of the population 65 years or older with complex healthcare needs due to comorbidities rendering them to experience frailty and experience considerable morbidity as they age (Hoff & DePuccio, 2016).

Patient-centered care: The delivery of care that is relational, explanatory, and involves the patient in the decision-making process regarding treatment, including considering recommendations made by other providers (Almaki et al., 2018).

Patient-centered medical home: Care provided that is patient-centric, accessible, comprehensive, compassionate, and delivered with quality assurance in all services offered (NCQA, 2019).

Patient satisfaction: Is the culmination of one's hopes, desires, or needs in receiving care that is beneficial for improving health status and outcomes and is a significant indicator of the quality of provider care or hospital performance. (Prakash, 2018).

Physician (Doctor): One who practices the healing arts through education in the field of medicine and licensed to practice as a Doctor of Medicine (M.D) or Doctor of Osteopathy (D.O.) in the city, county, or state in which they reside (Merriam-Webster. (n.d.).

Primary care: Provides integrated, accessible healthcare by clinicians accountable for addressing a vast majority of personal healthcare needs developing continuing alliances with patients to meet family and community needs (Doherty et al., 2020).

Quality of care: The delivery of healthcare that is impartial, effective, safe, and patient-centric enhancing an individual's health status and that of diverse populations (Agency for Healthcare Research and Quality [AHRQ], 2019).

Usual source of care: Is a regular place or consistent provider of care other than treatment accessed through emergent services or a different setting offering specialty services by specialty care providers (Fullerton et al., 2017)

Utilization: A description of patients' use of services to manage health problems and improve the quality of life and health status (Ghandi et al., 2018).

Assumptions

The data provided originated from the dataset selected for this study, namely the 2016 MCBS's Public Use Files. Data in this database comes in three segments from the Fall, Winter, and Summer of 2016. The 2018 MCBS database is the latest available. However, the reasons for not selecting the 2018 database were that the MCBS Public Use File would not be available until the third quarter of 2020 (CMS, 2018).

Scope and Delimitations

Scope

The MCBS is a face-to-face, multi-faceted longitudinal survey with information on Medicare beneficiaries less than 64 years of age and information on beneficiaries 65 years of age and older (CMS, 2018). The survey's focus includes items indicating the Medicare recipient's use of healthcare services, obstacles that hinder access, healthcare costs, and issues that affect healthcare utilization. The survey includes demographic data, health status data about the beneficiary's relative access to care. Further, the use of the MCBS increases internal validity by procuring a sample from real-life data (Chew, 2019). Elderly African Americans identified in the dataset are compared with other ethnicities similarly affected by T2DM complexities that provide external validity (Chew, 2019). However, results from this study may not be generalized to other races and ethnicities. Inferences may be applicable in the explanation of differences that may exist between these groups. An ex post facto nonexperimental research design was selected to determine if associations existed between selected independent and dependent variables. As a result, a related theory not used in the proposed study was the path-goal model theory, which emphasizes a leader's capacity to influence those under his/her counsel to follow a specific set of goals and objectives (Freeman-Hildreth et al., 2019). Accurately, physicians are the usual source of care leaders for diabetic patients (Freeman-Hildreth et al., 2019). This form of leadership by the physician strengthens the physician-patient bond by promoting empathy towards the diabetic patients' concerns. (Freeman-Hildreth

et al., 2019). Being a participative leader encourages patients to adhere and to comply with medical advice.

Delimitations/Limitations

This study's delimitations include ensuring that MCBS weights are applied to form estimates using appropriate techniques to calculate standard errors. Additionally, attention must be given to nonresponses by survey participants accounting for missing data. In the MCBS, participant nonresponse is low due to the size of the sample in the survey. However, to account for missing data, an additional variable is included in the SPSS file, which counts the number of missing answers. In cases that have less than 5% missing data, missing values were estimated/imputed by using the grand mean (for continuous data) or the grand mode (for categorical/nominal data) (Pallant, 2018).

Significance

This study's significance and contribution to the body of knowledge was to formulate research sought to improve healthcare access for African American Type 2 diabetics on Medicare. T2DM is the most common form of diabetes such that people experience insulin resistance brought about by excess glucose in the bloodstream (Skyler et al., 2017). Estimates are that 30 million people over 18 years of age have diabetes, with approximately 11.4% of this total being non-Hispanic African American males and 12.0% of this total being non-Hispanic American females (CDC, 2020). Non-Hispanic White American males account for 8.6% of this total, while non-Hispanic White American females make up 6.6% of the total (CDC, 2020). More strikingly, of the fifteen

leading causes of death in the United States, diabetes is the seventh leading cause of death preceded by heart disease and cancer (Xu et al., 2018). Life expectancy at birth by race and gender for non-Hispanic African American females and non-Hispanic African American males was significantly lower than that of their non-Hispanic White American female and male counterparts in 2016 at 77.9 years and 71.5 years compared to 81.0 years and 76.1 years for both racial groups respectively (Xu et al., 2018).

By applying the PCMH model principles, evidence that unnecessary utilization of medical services for elderly African Americans may decrease through access to a regular care provider or place of care (NCQA, 2019). Accessing available preventive services is vital in managing chronic diseases to increase life expectancy and quality of life. While improving patient-centeredness in delivering care is essential, individualized care provided based on the patient-provider relationship, and cultural awareness, is vital but not the only path to improved health status. It is a starting point that enables elderly African Americans with diabetes to continually obtain quality care through strong relationships to continually maintain or improve health (Ford et al., 2017). Patient experiences from prior encounters with the healthcare system and the ease and flexibility of traversing administrative hurdles to accommodate patients' needs mediate barriers to healthcare access (Ford et al., 2017).

As a result, significant policy implications are brought to the forefront to improve access to care for older African American's with T2DM. PCMH intervention mechanisms may be put in place in small medical practices if applicable to help the

elderly African American Type 2 diabetic on Medicare cope with the complexities of the disease, providing an emphasis on prevention and the physician-patient relationship while also creating an avenue to reduce the use of numerous specialists and the emergency room (Almaki et al., 2018). The implications derived from this study provided insights into the importance of reducing fragmented primary care in small single physician fee-for-service (FFS) practices, large multi-physician organizations, or practices that tend exclusively to Medicare patients (Philip et al., 2019).

Social Change Implications

Improving healthcare for African Americans burdened with chronic illnesses is very challenging. The social change objectives are to increase access and availability of healthcare services to meet the unmet healthcare needs of affected populations. For low-income, older African Americans, prevention and preventive practices are congruent with the delivery of satisfactory care, and accessing care that is patient-centered, compassionate, and devoid of indifference. Prior research showed that older African Americans on Medicare have less access to this level of primary care (CDC, 2020).

One goal of Healthy People (2020) is to decrease the effect of diabetes in all populations, especially prediabetes (Healthy People, 2020; Patient-Centered Outcomes Research Institute, 2018). In 2007 the economic costs of prediabetes and diabetes in the United States were $218 billion, of which $153 billion was due to increased healthcare costs with $65 billion attributed to losses brought on by decreased productivity (Unger, 2015). Thus, lessening the effect of diabetes on all ages, races, and ethnicities is an

essential social change objective. Developing research highlighting the importance of access to primary and preventive care is critical for structured diabetes care management that reduces costs and utilization.

Summary and Conclusions

This study sought to provide information applicable to the current body of knowledge by evaluating patient-centered attributes and characteristics, and measures of healthcare quality including considerations relating to patient satisfaction with the quality of care provided, the presence or absence of compassionate care, and the level of medication nonadherence that either improved or reduced access to healthcare for elderly African American's with T2DMs on Medicare (Tarraf et al., 2017).

Further, a synopsis of the research reviewed in the literature search provided information supporting the PCMH as an innovative, transformative primary care policy initiative offering regular accessible quality care to older African American Type 2 diabetics on Medicare (Burton et al., 2018). Utilizing the standards developed by the NCQA to redesign primary care and create recognized programs may be necessary for the care and treatment of vulnerable patients in small primary care practices, multi-physician practices, and ambulatory clinics (Burton et al. 2018; Rosalind et al., 2018; Woodward et al., 2018;Timbie et al., 2017). However, research studies reviewed have reported mixed results on PCMH effectiveness in reducing emergency room usage, decreasing hospitalizations, and initiating quality improvements. Additional research is needed to ascertain if those findings have merit (Sinaiko et al., 2017). The

methodological assessment that follows provided findings to ascertain whether associations between the three quality of care dependent variables selected provide statistical inferences that support or refute the stated hypotheses.

Section 2: Research Design and Data Collection

This quantitative ex post facto nonexperimental study explored the association between race, patient satisfaction with doctor care delivered, and doctor quality in terms of compassion and indifference. Additionally, an assessment determining how medication adherence and other covariates enhanced access to healthcare for elderly African Americans with T2DM on Medicare was studied.

Access to healthcare by elderly African Americans with T2DM on Medicare is essential to improve health outcomes and is an area of much-needed research. A series of studies concerning racial and ethnic disparities have reported inadequate glycemic control in African Americans compared to Whites with T2DM, resulting from the lack of access to care (Goonesekera et al., 2015; Tarraf et al., 2017). Nearly 50 million people in the United States will be diagnosed with Type 2 diabetes by 2050, with approximately 30% of the aged population being 65 to 74 years of age (Smalls et al., 2020). In Section 2, I discuss the research design, rationale, methodology, threats to validity, and ethical considerations.

Research Design and Rationale

Study Variables

The dependent variables studied include three quality care measures that characterize satisfaction with the provision of doctor care and the delivery of compassionate or indifferent care, which may improve healthcare access. The need factor, adherence to medications, was represented by variables that emphasized the

patients' use of prescription medications based upon the patient's self-perceived health status. Medication adherence was chosen as a covariate, along with BMI, and the number of chronic conditions to describe the clinical characteristics that delineated healthcare need. Demographic variables of age and gender were also included to determine whether there was a statistical effect that directly influenced the dependent variables (Pallant, 2018).

Andersen's conceptual framework illustrated the importance of these variables in determining health behavior. This theoretical framework conceptualizes individuals' access and use of healthcare through predisposing, enabling, and need factors established in the model (Andersen, 1995; Stein et al., 2007). The study variables are listed as follows:

- ***Predictor variable.*** Race (nominal with three levels – Non-Hispanic White, Non-Hispanic Black, and Hispanic).
- ***Predisposing (independent variables-covariates*).** Age (ordinal), Gender (nominal-two groups).
- ***Enabling (dependent variables).*** Health insurance (ordinal).
- ***Need.*** Characterized by both preventive measures of quality (ordinal), and quality measures that determine how good (compassionate or indifferent), the doctor is (ordinal). The covariates used were BMI (ratio) and the number of chronic conditions (interval-ratio), along with frequency of medication adherence consisting of ordinal variables operationalized to a scaled measure

that expressed the extent of prescription use by elderly people with Type 2 diabetes on Medicare. Further, medication adherence acted as a factor providing insight to explain how the need for maintaining prescription medication plans influenced the predictor variables impact on the criterion (dependent variable; Creswell & Creswell, 2018). See Appendix A and Table 1 for the designation of the variables used in this study.

Rationale

The literature review revealed a gap in establishing whether older African Americans with chronic diseases such as T2DM have less access to healthcare than White Americans (Fullerton et al., 2017; Tarraf et al., 2017). This study was structured to determine whether relationships existed between race and the outcome sought, healthcare access. In a study of White, Black, and Latino American adults, 55-64 years of age or older, African American individuals included in the study had lower life expectancies compared to White Americans and other racial-ethnic groups (Tarraf et al., 2017). African American and Latino American patients in the study received PCMH care that was not patient-centered, compassionate, nor comprehensive, which constituted structural impediments to healthcare access more often than for White American patients. Thus, the connection between theory and research questions using Andersen's behavioral model infer that race predisposes one to access healthcare notwithstanding age, gender, BMI, or number of chronic conditions. Health insurance (Medicare), which is a constant, enables elderly African American Type 2 diabetics access to healthcare. The need factor provides

inferences about methods that improve the person's health status with T2DM. Analyzing preventive screening measures that determine doctor quality and how patient satisfaction impacts the management of diabetic care gives an indication of how the person with T2DM follows medication regimens. As a result, the impact of each of these factors using Andersen's behavioral framework may profoundly predict behavior change promotion to improve access to healthcare for elderly people with Type 2 diabetes. (Travers et al., 2020).

Study Design

An ex post facto nonexperimental research design was used in this quantitative research study to answer the research questions. The variables of concern in this nonexperimental research design are not subject to random assignment or manipulation or conclusions (Goodwin & Goodwin, 2016). However, data collected on specific populations determine whether relationships between the variables of interest form predictions that infer behavior change in those populations instead of cause-effect conclusions (Creswell & Creswell, 2018; Pallant, 2016). I used previously collected secondary data from the 2016 MCBS (CMS, 2016), which I analyzed using a nonidentifiable free download in the Statistical Analysis System (SAS) format with data conversion to the Statistical Package for the Social Sciences (SPSS, Version 25) available in a .save file. Appendix B contains the links to the 2016 MCBS Data Users Guide and Methodology Report.

Time and Resource Constraints

Ex post facto nonexperimental research designs provide a process of evaluating statistical data that is convenient, does not require a control group, is not costly to carry out, and does not assume causation (Creswell & Creswell, 2018). For example, in a longitudinal study of older diabetic patients (greater than 60 years of age) affected by sleep disorders and self-care processes as well as by confounders such as diabetes distress, extreme tiredness, and sleeping during the day, an ex post facto design was used (Zhu et al. 2018). Moreover, this nonexperimental research design implies that the provision of predictive results based on the relationships between variables of interest might impact health policy (Curtis et al., 2016). Further, this research design had been deemed appropriate through a study investigating the effects of polypharmacy and reduced prescribing tendencies on a culturally ethnic diverse cohort of older patients from South Florida (Chiang-Hanisko et al., 2015). Findings indicated that being a racial-ethnic minority group member was significantly associated with polypharmacy (Chiang-Hanisko et al., 2015).

Methodology

Population

The target population used in this study were survey respondents whose data I obtained from the 2016 MCBS panels beginning on January 1, 2016 and ending January 2017 (CMS, 2018). A total of 2,484 people with Type 2 diabetes constitute the study population from 12,852 Medicare beneficiaries extracted from the overall weighted

survey population of 53,543,485 Medicare recipients 65 years of age and older from the United States (CMS, 2018).

Sampling and Sampling Procedures Used to Collect Data

The 2016 MCBS public use files provided data for this study (CMS, 2018). Factors considered toward using this data source were the cost-effectiveness and timeliness of access to the data, choosing a data source where data was previously collected, where the study population is diverse, and where the information is reliable and valid (CMS, 2018).

The 2016 MCBS's sample population provided administrative membership information on Medicare beneficiaries representing data from a continuous longitudinal randomly sampled segment of the general population of persons ever enrolled in Medicare Parts A and B for any time during the calendar year 2016 (CMS, 2018). The 2016 MCBS consists of three survey periods, namely, fall, winter, and spring, in which sample weighting considers recipient non-response in the calculations of standard and random errors (CMS, 2018). Community and facility interviews of Medicare noninstitutionalized recipients, family representatives, or their proxies were conducted and took place where the beneficiary lived, specifically home or residence (CMS, 2018). Medicare recipients participating in the survey received a letter and a leaflet explaining the interview process with allotted times for appointments with the interviewer (CMS, 2018).

The sample size in the 2016 MCBS was large enough to reflect significant power without calculating sample size estimates (CMS, 2018; Dunn et al., 2015). However, I used G*Power (Version 3.1.9.4), a statistical power analysis software program that expresses the association among the variables involved in determining statistical inferences and representative sample size estimates, to estimate the minimum sample size required to make reasonable inferences (Erdfelder et al., 1996). This menu-oriented program determines a priori estimated sample size based on the effect size, alpha level, and power level (Erdfelder et al.,1996). Further, the justification for the effect size, alpha, and power level chosen originated from conventional values used in the behavioral sciences (Goodwin & Goodwin, 2016). Rejecting the null hypothesis may result in a Type I error. Thus, using an alpha level of .05 with effect sizes ranging from 0.1 to .30 to .50, with a specification of .80 to calculate statistical power are recommended (Cohen, 1992; Goodwin & Goodwin, 2017). However, effect size values ascertained from relevant literature can help identify values to use in the sample size computation. A meta-analysis of 107 randomized control trials from more than 100 studies revealed a standardized effect size of .30 from evidence generated in reviewing those trials (Rothwell et al., 2018). Additionally, a review of three randomized clinical trials resulted in a standardized effect size of .316 for the clinical domain diabetes (Rothwell et al., 2018). Thus, this study used an effect size of .30, an alpha level of .05, and .80 to determine statistical power, resulting in a minimal sample size of 64. The sample size

used in this study consisted of 2,484 Type 2 diabetics 65 years of age or older and large enough to exhibit significant power.

Operationalization

Selected enabling dependent variables were identified and operationalized to create a continuous scaled score that ascertains effective or efficient healthcare access or reduced access with response rates to items rated from 1 to 5 (see Table 1). The potential scales measuring quality of care represent how compassionate or indifferent the doctor is in providing care to the respondent that includes preventive and prescriptive care, with an added consideration, the satisfaction with care provided to the elderly African American Type 2 diabetic on Medicare. Negative items reflecting indifferent doctor care were reverse coded. Consequently, the aggregation of scaled scores represented access to healthcare as the ease with which a patient can begin an interaction for any health problem with a provider or place of care. Barriers such as place of residence, operational hindrances that diabetic patients encounter, costs of care, cultural insensitivity, stigma, and provider relationships that encourage or discourage behavior change and inhibit accessing needed care are factors to be considered (Fullerton et al., 2017). Further, methods to generate an appropriate mean score for variable operationalization from the literature reveal positive physician-patient relationships through an analysis of a 36-item instrument assessing patients' patient-centered access characteristics in a primary care setting with several comorbidities including diabetes (Cramm & Niboer, 2018). The total patient-centric care means value estimation measuring compassionate care while also

emphasizing positive patient-provider relationships was 3.83, with a standard deviation of .47 (Cramm & Niboer, 2018). Results from this article may be appropriate to use in the study.

Table 1

Operationalization of Variables

Name of variable	Type of variable	Level of measurement	Number of the items on the survey
Satisfaction with Doctor scale	Dependent variable	Interval	8 (Appendix A)
Doctor Provision of Compassionate care scale	Dependent Variable	Interval	7 (Appendix A)
Doctor Provision of Indifferent Care scale	Dependent variable	Interval	4 (Appendix A)
Race with 3 groups (NHW,NHB, Hispanic)	Independent variable	Nominal	1 (Appendix A)
Age	Covariate (IV)	Ordinal	1 (Appendix A)
Gender	Covariate (IV)	Nominal-Two groups	1 (Appendix A)
Basal Metabolic Index	Covariate (IV)	Interval/Ratio	1 (Appendix A)
Number of Chronic Conditions	Covariate (IV)	Interval	1 (Appendix A)
Frequency of Adherence	Covariate (IV)	Interval	2 (Appendix A)

Data Analysis Plan

The software instrument planned used in this study was the SPSS (Version 25) that featured tools for the statistical analysis of data gathered from market research and surveys (Balkin, n.d.). A free download from the CMS containing the MCBS public-use data (PUF) files in Statistical Analysis Software (SAS) format containing de-identified data on the Medicare beneficiaries participating in the survey was acquired (CMS, 2018).

Data use agreements were not required to use the data (CMS, 2018). Researchers or persons requesting the use of the data have no restrictions on its use for statistical analysis of areas covered, such as access to care, prevention, health status, social determinants of health, housing, and Medicare costs and usage (CMS, 2018).

The 2016 MCBS provided a complete dataset scrubbed and pertinent to the study population chosen to provide usable data to answer research questions (CMS, 2018). Each panel of the MCBS ever enrolled population includes complete sample cross-sectional weightings to produce data estimates to interpret the data generated and reduce standard error. Additionally, most software packages, including SPSS, provide tactics for weight replication, and data cleaning mechanisms to improve the statistical significance of the data (CMS, 2018).

The following research questions guided this study:

RQ1: What is the association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and the level of satisfaction with the doctor?

H_o1: There is no association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and the level of satisfaction with the doctor.

H_a1: There is an association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and the level of satisfaction with the doctor.

RQ2: What is the association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and the level of compassionate doctor care?

H_o2: There is no association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and the level of compassionate doctor care.

H_a2: There is an association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and the level of compassionate doctor care.

RQ3: What is the association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and the level of indifferent doctor care?

H_o3: There is no association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and the level of indifferent doctor care.

H_a3: There is an association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and the level of indifferent doctor care.

RQ4: What is the association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and doctor satisfaction while controlling for frequency of adherence to medications and patient demographics?

H_o4: There is no association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and doctor satisfaction while controlling for frequency of adherence to medications and patient demographics.

H_a4: There is an association between race and ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and doctor satisfaction while controlling for frequency of adherence to medications and patient demographics.

RQ5: What is the association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and compassionate doctor care while controlling for frequency of adherence to medications and patient demographics?

H_o5: There is no association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and compassionate doctor care while controlling for frequency of adherence to medications and patient demographics.

H_a5: There is an association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and compassionate doctor care while controlling for frequency of adherence to medications and patient demographics.

RQ6: What is the association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and indifferent doctor care while controlling for frequency of adherence to medications and patient demographics?

H_o6: There is no association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and indifferent doctor care while controlling for frequency of adherence to medications and patient demographics.

H_a6: There is an association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and indifferent doctor care while controlling for frequency of adherence to medications and patient demographics.

Statistical Analysis and Hypothesis Testing

The process of statistical analysis and hypothesis testing began with one-way analysis of variance (ANOVA) for each of the three dependent variables by race and

ethnicity. The post hoc test involved Bonferroni correction and eta coefficients to measure the strength of the relationship. Subsequently, I conducted an analysis using multiple regression to consider the effects of covariates on the dependent variables of interest. Analyses included the following:

- A descriptive analysis was conducted to include an assessment of the independent (predisposing), dependent (enabling), and need factors, along with measures of central tendency, namely, the mean, median, mode, and standard deviation to illustrate the dispersion of the data.
- One-way ANOVA, a parametric test with Bonferroni post hoc tests, was used to identify significant group comparisons with one nominal independent variable (Race) consisting of three groups (namely, non-Hispanic White, non-Hispanic Black, and Hispanic) to determine if significant differences exist as measured against the three dependent variables measured at the continuous level namely doctor satisfaction, compassionate doctor care, and doctor indifference (Creswell & Creswell, 2018).
- Multiple regression analysis was conducted to identify how much variance in the dependent variables was explained by the independent variables (Pallant, 2018). Further, regression analysis was used to ascertain how strong a set of variables are in predicting an outcome, along with being able to identify which variable is the best predictor of an outcome with the addition of controlling variables (Creswell & Creswell, 2018). The use of this analysis

includes assumption testing, and an analysis of statistical significance through beta weights (Pallant, 2018).

Threats to Validity

Several different types of validity affect experimental as well as non-experimental designs. The various types are internal, external, statistical conclusion, and construct validities that can affect study variables and outcomes (Bolarinwa, 2015; Goodwin & Goodwin, 2016).

Internal Validity

Internal validity is the extent to which a study is procedurally accurate and free of outside factors such as confounders (Goodwin & Goodwin, 2016). The input of confounders renders the study low in internal validity because they influence the experimental variables used (Goodwin & Goodwin, 2016). Other threats to internal validity are history (the occurrence of an event that affects the treatment variable altering the outcome), maturation (factors that enhance knowledge such as age), testing (based on one's propensity to improve initial scores upon re-test), and instrumentation (interviewer bias in completing questionnaires in a study). Statistical conclusion validity is also a factor (when individuals score very high or low on an instrument but score closer to the mean when re-tested), mortality (respondent attrition in a study altering the treatment effect), and selection bias (when there are inconsistencies in choosing comparison groups; Goodwin & Goodwin, 2016).

Further, in reviewing research studies regarding beneficiary knowledge questions from the MCBS, the results indicated that the beneficiary's overall knowledge and understanding of Medicare were evaluated for reliability via internal consistency using the Cronbach alpha coefficient (Bann et al., 2000; McCormack et al., 2010). The ideal value of Cronbach alpha should be above .70, which indicates that the items on the scale measure as accurately as possible the construct studied (Pallant, 2016). An analysis of selected variables from the 2016 MCBS public use file containing beneficiaries with identical sample sizes, and non-missing data, different characteristics were measured, such as medication non-adherence (CMS, 2018). The variables identifying nonadherence to medications were, skipping prescriptions, delaying prescription use, reducing prescribed dosages, and not filling prescriptions because of costs. Significant reliability (internal consistency) among the variables was identified upon analysis by a Cronbach alpha value of 0.74 (see Table 2), showing how closely connected the items were as a group (CMS, 2018; Pallant, 2016). Additionally, analyzing the patient-centered quality measures used in this study revealed that for items such as the provider seems to be hurried, the provider does not explain nor discuss medical problems and acts as if he/she is doing the patient a favor by talking, resulted in an internal consistency value, or Cronbach alpha, of .80.

Concerning other threats to internal validity, the MCBS is subject to various threats such as panel attrition or mortality, as noted previously, and by forms of nonresponse bias involving missing data such as unit nonresponse and item nonresponse

(CMS, 2018). Results of participant nonresponse that cause significant threats to validity are point estimate predispositions, inflated bias point estimates, and the effects of bias on traditional views that are specific (CMS, 2018). The application of survey weights reduces significant validity threats from participant nonresponse (CMS, 2018). Consequently, after base weights are created and adjusted from the initial survey round, post-stratification loads are implemented to develop consistency between the characteristics of sampled Medicare recipients and the national Medicare population non-response recipients (CMS, 2018; Schüssler-Fiorenza Rose et al., 2016). More specifically, the nonresponse procedures used reduced the bias of the non-responses to the survey by adjusting for the variance in probabilities resulting in improved reliability and validity of the study outcomes (Schüssler-Fiorenza Rose et al., 2016). Further, a descriptive analysis provides or identifies missing cases or values of do-not-know, not applicable, or refused in the case processing summary (CMS, 2018; Pallant, 2016).

External Validity

External validity relates to whether study results apply to and are sustained by other populations, different environments, and other periods (Goodwin & Goodwin, 2016). Circumstances that can threaten external validity are reactive or interactive effect testing, the interactive effects of selection biases, the experimental variable; reactive effects of experimental arrangements; and multiple treatment interference (Goodwin & Goodwin, 2016). Instances of these threats range from, for example, scores on a pre-test compared to scores on ensuing tests to multiple remedies applied to the same study

subject when it is not easy to manage the consequences of previous tests (Goodwin & Goodwin, 2016). High levels of validity are attributed to the accurate description and selection of the group studied, identifying settings in which human subjects are involved in real-life pursuits, and how results of a study or experiment changed over time (Bolarinwa, 2015).

Construct Validity

Construct validity refers to the construct selected (independent or dependent variable) to adequately measure what it is supposed to measure (Bolarinwa, 2015; Goodwin & Goodwin, 2016). For example, variables provided in the MCBS exhibit construct validity through questions relating to the beneficiary's knowledge regarding the utilization of services, physician visits, and access to care. In contrast, predictive validity, i.e., the relationship between a scaled score and the prediction of an outcome, was shown through predicting that socioeconomic status is a precursor of insurance awareness and healthcare use (Bann et al., 2000).

Statistical Conclusion Validity

Applying correct statistical approaches to reach reasonable conclusions characterizes statistical conclusion validity (Creswell & Creswell, 2018). Developed findings may be affected by the failure to acknowledge possible threats such as the reliability of the measures, the use of the appropriate sample size, accounting for missing data, incorrect statistical suppositions, as well as improperly aligning the correct statistical method with the appropriate research design (Creswell & Creswell, 2018). For

example, in a meta-analysis of selected literature sources, statistical conclusion validity was assessed using various modalities to offset missing data using multivariate imputation, assessing absent cases using a mathematical algorithm (Grigsby & McLawhorn, 2018).

Threats to the validity and reliability of the variables taken from the MCBS require an analysis of constructs based on the type of research design used. In this study, an ex post facto nonexperimental design assesses the relationship between the independent and dependent variables where there is no manipulation of the independent variable (Creswell & Creswell, 2018). Very low internal validity may occur due to the inability to manipulate the independent variable, which expresses a high propensity toward external validity. (Price et al., 2017). Choosing items that exhibit content validity and predictive validity will avert low external validity due to using constructs that measure content and predict an outcome from the relationships analyzed (Creswell & Creswell, 2018).

Ethical Procedures

In conducting this nonexperimental research study, attention to the ethical requirements in the use of the MCBS was essential to using data appropriately and following the specifications regarding data interpretation set forth by the survey vendor and the CMS (2018). The following ethical considerations, as noted by Creswell and Creswell (2018), were as follows:

- The research study was reviewed and approved by an Institutional Review Board (IRB).
- The creation of useful research problems occurred.
- Proof of compliance with ethical issues existed, and the study was devoid of conflict-of-interest concerns.
- Clear communication occurred using appropriate language that was non-biased and conscious of protected classes (target populations and professionals).
- Ownership of the data cited was to be the developer of the research and the educational institution.
- The dissemination of study data details shall occur through publications checked for plagiarism with data files kept on hand for 5 years.

Attention to ethical procedures throughout the research process is essential in creating research that is sound and adds to the body of knowledge.

Summary

Section 2 of this study presented the research design and data collection process to explain and analyze the secondary data source data. This study was a quantitative (ex post facto nonexperimental design) with a nominally independent, and ordinal dependent variable used to predict the outcome. The target population encompassed elderly African Americans 65 to 75+ on Medicare with T2DM. The 2016 MCBS public use files provided the required data for the study. Descriptive analyses, one-way ANOVA, post

hoc tests, and the use of multiple regression determined if group differences were statistically significant. Section 3 provides results and findings from the statistical analysis of the data using SPSS to test the hypotheses.

Section 3: Presentation of the Results and Findings

The purpose of this quantitative ex post facto nonexperimental research study was to examine the association between race, Type 2 diabetes, and selected measures of quality care using a conceptual framework. The following research questions guided this study:

RQ1: What is the association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and the level of satisfaction with the doctor?

H_o1: There is no association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and the level of satisfaction with the doctor.

H_a1: There is an association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and the level of satisfaction with the doctor.

RQ2: What is the association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and the level of compassionate doctor care?

H_o2: There is no association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and the level of compassionate doctor care.

H_a2: There is an association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and the level of compassionate doctor care.

RQ3: What is the association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and the level of indifferent doctor care?

H_o3: There is no association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and the level of indifferent doctor care.

H_a3: There is an association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and the level of indifferent doctor care.

RQ4: What is the association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and doctor satisfaction while controlling for frequency of adherence to medications and patient demographics?

H_o4: There is no association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and doctor satisfaction while controlling for frequency of adherence to medications and patient demographics.

H_a4: There is an association between race and ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and doctor satisfaction while controlling for frequency of adherence to medications and patient demographics.

RQ5: What is the association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and compassionate doctor care while controlling for frequency of adherence to medications and patient demographics?

H_o5: There is no association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and compassionate doctor care while controlling for frequency of adherence to medications and patient demographics.

H_a5: There is an association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and compassionate doctor care while controlling for frequency of adherence to medications and patient demographics.

RQ6: What is the association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and indifferent doctor care while controlling for frequency of adherence to medications and patient demographics?

H_o6: There is no association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and indifferent doctor care while controlling for frequency of adherence to medications and patient demographics.

H_a6: There is an association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and indifferent doctor care while controlling for frequency of adherence to medications and patient demographics.

The results in this chapter are organized according to the following plan:

- a description of the secondary data collection process, including response rates, and a presentation of the population of interest
- a report of baseline descriptive and demographic characteristics of the sample used, including the results of necessary univariate analyses and regression analyses that justify the inclusion of covariates in the model
- an evaluation of statistical assumptions and exact statistics, including probability values, explaining the statistical tests used to answer the research questions and associated hypotheses emanating from the study

Accessing the Data Set for Secondary Analysis

Data collection commenced on October 30th, 2020, after the Walden University IRB approved the requested research with approval number 10-30-20-0720516. I

acquired the secondary dataset, the 2016 Current MCBS public use file, from the CMS and reviewed and analyzed it for relevant variables essential to conducting the research. Further, the MCBS public use file provided representative data that was easy to use. Selecting data items from the public use file allows researchers to analyze health disparities, access, and satisfaction with healthcare and community-dwelling Medicare beneficiaries' medical conditions. The survey is a multifaceted longitudinal security level face to face interviews providing information on Medicare beneficiaries less than 64 years of age and information on beneficiaries 65 years of age and older (CMS, 2018). The survey maintains a high security level protecting the Medicare beneficiaries' health information (CMS, 2018).

In using the 2016 MCBS, threats to the validity and reliability of the variables require an analysis of constructs based on the type of research design used. In this study, I used an ex post facto nonexperimental research method to assess the relationship between the independent and dependent variables where no manipulation of the independent variables occurs (Creswell & Creswell, 2018). Very low internal validity exists due to the inability to manipulate the independent variable, which expresses a high propensity toward external validity (Price et al., 2017). Choosing items that exhibit content validity and predictive validity can avert low external validity due to using constructs that measure content and predict an outcome from the relationships analyzed (Creswell & Creswell, 2018).

Data Cleaning

In this research, a representative sample of 2,484 Medicare beneficiaries with Type 2 diabetes constituted the study population from 12,852 Medicare beneficiaries extracted from the overall weighted survey population of 53,543,485 Medicare recipients 65 to 75 + from the United States (CMS, 2018). However, data cleansing and review that includes missing value analysis resulted in reducing this population of Type 2 diabetics. Initially, the archival data set had an original sample of 2,484 records through retaining only those respondents who met the criteria for the study (i.e., being at least 65 years of age, receiving Medicare, and being from one of the three racial-ethnic groups: non-Hispanic White Americans, African Americans, and Hispanic Americans). Keeping those respondents with either one or no missing answers reduced the sample to 1,753 respondents. After removing other respondents that did not meet the defined statistical assumption criteria as listed below (Laerd, 2018), the final study sample was N = 1,716.

As reported in Section 2, the one-way ANOVA with Bonferroni post hoc tests and multiple regression analyses provided criteria to investigate the research questions and hypotheses. One-way ANOVA was used to determine whether there were statistically significant differences among the means of more than two selected individual groups (Pallant, 2018). Post hoc tests such as the Bonferroni correction indicated where those differences lay by evaluating the variations in each group studied to decrease Type I error (Pallant, 2018). Multiple regression estimated the association between a single

continuous dependent variable and several independent predictor variables (Pallant, 2018).

Because I used the 2016 MCBS, threats to the validity and reliability of the variables require an analysis of constructs based on the type of research design used. In this study, an ex post facto nonexperimental method assessed the relationship between the independent and dependent variables where no manipulation of the independent variable occurred (Creswell & Creswell, 2018). Very low internal validity follows due to the inability to manipulate the independent variable, which expresses an increased propensity toward external validity (Price et al., 2017). Choosing items that exhibit content validity and predictive validity will avert low external validity due to using constructs that measure content and predict an outcome from the relationships analyzed (Creswell & Creswell, 2018).

Statistical Assumptions

One-way ANOVA Assumptions

In the one-way ANOVA analysis, the following six assumptions, as described by Laerd (2018) were met:

1. There must be one continuous dependent variable.
2. There must be one independent variable with two or more independent groups. My study had one independent variable with three groups.

3. There must be independence of operations (i.e., there are no relationships between observations in each independent variable or among the groups themselves). This assumption was met based on the study's design.
4. There should be no significant outliers in the independent variables in terms of the dependent variables.
5. The dependent variable should be approximately normally distributed for each group of the independent variable.
6. There must be homogeneity of variances.

Multiple Regression Analysis Assumptions

Laerd (2018) required eight assumptions for multiple regression analysis that were met:

1. A dependent variable that is a continuous scale
2. Two or more independent variables
3. Independent observations
4. A linear relationship between the dependent variable and each non-dichotomous independent variable both individually and collectively
5. Homoscedasticity
6. No multicollinearity
7. No significant outliers, high leverage points, or highly influential points
8. Normally distributed residual scores

- Assumption 1 met: (Have a continuous dependent variable)

- Assumption 2 met: (Two (2) or more independent variables)
- Assumption 3 met: (Independent observations) – this assumption was met based on the design of the study.
- Assumption 4 met: (Linear relationships)
- Assumption 5 met: (Homoscedasticity) met based on inspection of the scatterplot of standardized residuals against the unstandardized predicted values and the inspection of the partial regression plots.
- Assumption 6 met: (No multicollinearity) met by inspection of the Variance Inflation Factor (VIF) statistics in the regression model.
- Assumption 7 met: (No outliers or other influential points) met by dropping 37 respondents based on their case-wise diagnostics, unusual leverage points identified through Cook's distance considerations (Laerd, 2018). The final sample was N = 1,716.
- Assumption 8: (Normally distributed residuals) was met based on the inspection of the residual histogram and the P-P plot. With the multiple regression model being robust to violations of large samples' the assumptions were adequately met.

Results

The results from the 2016 MCBS public use files are displayed in table format. Table 2 displays the frequency counts for selected variables. Table 3 shows the psychometric characteristics for the scale scores. Table 4 displays the one-way ANOVA tests used to answer Research Questions 1, 2, and 3. Tables 5 through 7 display relevant multiple regression models to answer Research Questions 4, 5, and 6.

Descriptive Analysis

Table 2 displays the frequency counts for selected variables. Over half of the respondents (59.8%) were over 75 years old. Male respondents comprised 47.4% of the sample, whereas female respondents comprised 52.6%. Most of the sample (76.6%) were non-Hispanic White Americans with fewer African Americans (10.8%) and Hispanic Americans (12.6%). As for the BMI category, 0.5% were considered underweight, whereas 7.1% were deemed extreme or high, with the median category being overweight. The median number of chronic conditions was 4.5. Further, most of the sample (91.7%) reported always adhering to their doctor's medication requirements (see Table 2).

Table 2

Frequency Counts for Selected Variables

Variable	*n*	%
Age category		
65-75	689	40.2
Over 75	1,027	59.8
Gender		
Male	814	47.4
Female	902	52.6
Race/ethnicity		
Non-Hispanic White	1,314	76.6
Non-Hispanic Black	185	10.8
Hispanic	217	12.6
BMI category [a]		
Underweight < 18.5	9	0.5
Healthy, 18.5 - < 25	377	22.0
Overweight, 25 - < 30	595	34.7
Obese, 30 - 40	614	35.8
Extreme or high	121	7.1
Number of chronic conditions [b]		
Has 0-1 conditions	44	2.6
Has 2-3 conditions	519	30.2
Has 4-5 conditions	657	38.3
Has 6+ conditions	496	28.9
Frequency of adherence		
1.00 to 1.99	11	0.7
2.00 to 2.99	131	7.6
3.00	1,574	91.7

Note. *N* = 1,716.

[a] BMI = *Median* = Overweight.

[b] Number of Chronic Conditions: *Median* = 4.5 Conditions

Table 3 displays the psychometric characteristics for the four primary scale scores. These four scale scores were satisfaction with doctor, doctor provision of compassionate care, doctor provision of indifferent care, and frequency of adherence. All four Cronbach alpha (α) reliability coefficients were above 0.70, indicating acceptable levels of internal reliability (Laerd, 2018) (see Table 3).

Table 3

Psychometric Characteristics for Primary Scale Scores

Scale	Items	*M*	*SD*	Low	High	**α**
Satisfaction with doctor	8	3.35	0.40	2.13	4.00	.86
Doctor provision for compassionate care	7	4.43	0.46	3.14	5.00	.89
Doctor provision for indifferent care	4	2.77	0.49	1.50	4.25	.80
Frequency of adherence	2	2.93	0.26	1.00	3.00	.74

Note. N = 1,716.

Statistical Analysis Findings

Research Questions 1-3

RQ1: What is the association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and the level of satisfaction with the doctor? The related null hypothesis ($H_0 1$)*was:* There is no association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and the level of satisfaction with the doctor.

To answer this question, Table 4 displays the one-way ANOVA test for each of the quality-of-care scale scores based on race and ethnicity. The satisfaction with doctor score was significantly different between the three groups (p = .02). However, the

Bonferroni post hoc tests found no significant differences between the three groups at the $p < .05$ level on the satisfaction with doctor care score.

RQ2: What is the association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and the level of compassionate doctor care? The related ($H_0 2$) *was:* There is no association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and the level of compassionate doctor care. Doctor provision of compassionate care scores was significantly different between the three groups ($p = .05$). The Bonferroni post hoc tests found non-Hispanic Black respondents to have lower scores than Hispanic respondents ($p = .04$).

RQ3: What is the association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and the level of indifferent doctor care? The related ($H_0 3$) *was:* There is no association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and the level of indifferent doctor care. The doctor provision of indifferent care score was significantly different between the three groups ($p = .008$). The Bonferroni post hoc tests found non-Hispanic white respondents to have lower scores than Hispanic respondents ($p = .02$).

This combination of findings from Research Questions 1, 2, and 3 provided support to reject the null hypothesis (see Table 4).

Table 4

One-Way ANOVA Tests for Selected Variables Based on Race/Ethnicity

					95% *CI*					
Scale	Group	*n*	*M*	*SD*	Low	High	Levene	η	*F*	*p*
Satisfaction with doctor [a]							.41	.07	3.87	.02
	White	1,314	3.36	0.39	3.34	3.39				
	Black	185	3.31	0.41	3.25	3.37				
	Hispanic	217	3.30	0.40	3.24	3.35				
Doctor Provision for Compassionate Care [b]							.39	.06	3.05	.05
	White	1,314	4.43	0.46	4.40	4.45				
	Black	185	4.36	0.48	4.29	4.43				
	Hispanic	217	4.47	0.47	4.41	4.54				
Doctor Provision for Indifferent Care [c]							.50	.08	4.88	.008
	White	1,314	2.75	0.48	2.72	2.77				
	Black	185	2.82	0.50	2.74	2.89				
	Hispanic	217	2.84	0.49	2.78	2.91				

[a] Bonferroni post hoc tests: no significant differences at the $p < .05$ level.

[b] Bonferroni post hoc tests: Black < Hispanic ($p = .04$); no other significant differences at the $p < .05$ level.

[c] Bonferroni post hoc tests: White < Hispanic ($p = .02$); no other significant differences at the $p < .05$ level.

Research Questions 4-6

RQ4: What is the association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and doctor satisfaction while controlling for frequency of adherence to medications and patient demographics? The related null hypothesis (H_o4) *was:* There is no association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and doctor satisfaction while controlling for frequency of adherence to medications and patient demographics. To answer this question, Table 5 displays the multiple regression model predicting the satisfaction with doctor score. The overall model was significant ($p = .001$) and accounted for 3.7% of the criterion variable variance. Inspection of the beta weights found the satisfaction with doctor scale to be higher for younger respondents (< 75 years of age) ($\beta = -.07$, $p = .009$), male respondents ($\beta = -.05$, $p = .04$), Hispanic respondents ($\beta = -.06$, $p = .01$), those with fewer chronic conditions ($\beta = -.06$, $p = .01$), and those respondents with a higher level of adherence ($\beta = .14$, $p = .001$). This combination of findings provided support to reject the null hypothesis (see Table 5).

Table 5

Multiple Regression Model Predicting Satisfaction with Doctor Scale Based on Selected Variables

Variable	*B*	*SE*	β	*p*	95% *CI* Low	95% *CI* High	VIF
Intercept	3.02	0.13		.001	2.77	3.28	
Age	-0.05	0.02	-.07	.009	-0.09	-0.01	1.12
Gender [a]	-0.04	0.02	-.05	.04	-0.08	0.00	1.06
Black [b]	-0.05	0.03	-.04	.09	-0.11	0.01	1.03
Hispanic [b]	-0.07	0.03	-.06	.01	-0.13	-0.01	1.03
BMI	0.00	0.01	-.01	.65	-0.03	0.02	1.10
Number of chronic Conditions	-0.03	0.01	-.06	.01	-0.05	-0.01	1.09
Frequency of adherence	0.22	0.04	.14	.001	0.15	0.29	1.02

Note. N = 1,716; $F(7, 1708) = 9.30$, $p = .001$; $R^2 = .037$; Durbin-Watson = 1.97.

[a] Gender: 1 = *Male*; 2 = *Female*.

[b] Coding: 0 = *No*; 1 = *Yes*.

Research Question 5: What is the association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and compassionate doctor care while controlling for frequency of adherence to medications and patient demographics? The related null hypothesis ($H_0 5$) *was:* There is no association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and compassionate doctor care while controlling for frequency of adherence to medications and patient demographics. Table 6 displays the multiple regression model predicting the doctor provision for compassionate care score to answer this question. The overall model was significant ($p = .003$) and accounted for 1.3% of the variance in the criterion variable. Inspection of the beta weights found the

compassionate care score higher for those respondents with a higher adherence level (β = .08, p = .001). This combination of findings provided no support to reject the null hypothesis (see Table 6).

Table 6

Multiple Regression Model Predicting Doctor Provision for Compassionate Care Based on Selected Variables

					95% *CI*		
Variable	*B*	*SE*	β	*p*	Low	High	VIF
Intercept	4.13	0.15		.001	3.83	4.43	
Age	-0.04	0.02	-.04	.10	-0.09	0.01	1.12
Gender [a]	-0.01	0.02	-.01	.71	-0.05	0.04	1.06
Black [b]	-0.07	0.04	-.05	.06	-0.14	0.00	1.03
Hispanic [b]	0.04	0.03	.03	.19	-0.02	0.11	1.03
BMI	0.01	0.01	.02	.36	-0.01	0.04	1.10
Number of chronic Conditions	-0.01	0.01	-.02	.35	-0.04	0.01	1.09
Frequency of adherence	0.14	0.04	.08	.001	0.06	0.23	1.02

Note. N = 1,716; $F(7, 1708) = 3.09$, p = .003; R^2 = .013; Durbin-Watson = 2.04.

[a] Gender: 1 = *Male*; 2 = *Female*.

[b] Coding: 0 = *No*; 1 = *Yes*.

Research Question 6: What is the association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and indifferent doctor care while controlling for frequency of adherence to medications and patient demographics? The related (H_o6) *was:* There is no association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and indifferent doctor care while controlling for frequency of adherence to medications and patient demographics. Table 7 displays the multiple regression model

predicting the doctor provision of indifferent care score to answer this question. The overall model was significant (p = .001) and accounted for 1.9% of the criterion variable variance. Inspection of the beta weights found the doctor indifference score to be higher for those respondents who were Hispanic (β = .07, p = .005), those with more chronic conditions (β = .05, p = .03), and those respondents with a lower level of adherence (β = -.09, p = .001). This combination of findings provided support to reject the null hypothesis (see Table 7).

Table 7

Multiple Regression Model Predicting Doctor Provision for Indifferent Care Based on Selected Variables

					95% *CI*		
Variable	*B*	*SE*	β	*p*	Low	High	VIF
Intercept	3.10	0.16		.001	2.79	3.42	
Age	0.03	0.03	.03	.30	-0.02	0.08	1.12
Gender [a]	0.01	0.02	.01	.59	-0.03	0.06	1.06
Black [b]	0.07	0.04	.04	.08	-0.01	0.14	1.03
Hispanic [b]	0.10	0.04	.07	.005	0.03	0.17	1.03
BMI	0.00	0.01	-.01	.74	-0.03	0.02	1.10
Number of chronic Conditions	0.03	0.01	.05	.03	0.00	0.06	1.09
Frequency of adherence	-0.18	0.05	-.09	.001	-0.27	-0.09	1.02

Note. N = 1,716; $F(7, 1708) = 4.64$, p = .001; R^2 = .019; Durbin-Watson = 2.03.

[a] Gender: 1 = *Male*; 2 = *Female*.

[b] Coding: 0 = *No*; 1 = *Yes*.

Summary

In summary, this quantitative ex post facto nonexperimental research study used archival data from 1,716 respondents to examine the relationship between race and dependent variables that may predict the outcome through a conceptual framework. An assessment of the quality measures that influence access to healthcare services, conducted on a population of elderly African American Type 2 diabetics on Medicare. Research Questions 1 (association of race and ethnicity with satisfaction with doctor care) was supported (see Table 4). Research Question 2 (association of race and ethnicity with compassionate doctor care) was supported (see Table 4). Research Question 3 (association of race and ethnicity with indifferent doctor care) was supported (see Table 4). Research Question 4 (association of race and ethnicity with satisfaction with doctor care controlling for variables) was supported (see Table 5). Research Question 5 (association of race and-ethnicity with compassionate doctor care controlling for variables) was not supported (see Table 6). Research Question 6 (association of race and ethnicity with doctor indifference controlling for variables) was supported (see Table 7). Summarized findings will be compared to the literature in Section 4. Conclusions and implications will be developed, along with a series of recommendations in Section 4.

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

This quantitative ex post facto nonexperimental research study sought to examine the association between race, Type 2 diabetes, and selected quality care measures using a conceptual framework. The theoretical framework employed assessed the behavioral health characteristics of predisposing, enabling, and need factors that influenced access to healthcare services for elderly African American Type 2 diabetics on Medicare. Prior research has indicated that lack of access to care occurs due to racial differences and inequities in healthcare, especially toward African Americans (Butkas et al., 2020). Race and ethnicity, gender, age, socioeconomic status, culture, stigma, religious practices, and low levels of health literacy have been noted as barriers to access. The improvement in care outcomes affecting elderly people with Type 2 diabetes on Medicare with chronic conditions depend on healthcare access (Butkas et al., 2020). Patient-centered care may be beneficial to improving access for disparate groups. The PCMH, an innovative primary care model, could help Latinos and non-Hispanic African American patients improve health and life expectancies (Tarraff et al., 2017). Being satisfied with the delivery of doctor care, receiving compassionate doctor care that includes joint decision-making, free of bias and indifference, reduces the extensive health care needs of elderly Type 2 diabetics enabling them to access and utilize healthcare services (Chan et al., 2019).

The primary hypotheses used to determine associations between race and ethnicity and the three quality of care measures with selected covariates are as follows:

- H_o1: There is no association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and the level of satisfaction with the doctor.
- H_o2: There is no association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and the level of compassionate doctor care.
- H_o3: There is no association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and the level of indifferent doctor care.
- H_o4: There is no association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and doctor satisfaction while controlling for frequency of adherence to medications and patient demographics.
- H_o5: There is no association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and compassionate doctor care while controlling for frequency of adherence to medications and patient demographics.
- H_o6:There is no association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and indifferent doctor care while controlling for frequency of adherence to medications and patient demographics.

The associated research questions were the following:

- RQ1: What is the association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and the level of satisfaction with the doctor?
- RQ2: What is the association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and the level of compassionate doctor care?

- RQ3: What is the association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and the level of indifferent doctor care?
- RQ4: What is the association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and doctor satisfaction while controlling for frequency of adherence to medications and patient demographics?
- RQ5: What is the association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and compassionate doctor care while controlling for frequency of adherence to medications and patient demographics?
- RQ6: What is the association between race/ethnicity of Medicare Type 2 diabetes patients 65 to 75+ and indifferent doctor care while controlling for frequency of adherence to medications and patient demographics?

Key Findings of the Study

Definitions of the quality-of-care measures used in this study enumerate key findings. Quality of care is the delivery of impartial, effective, safe, and patient-centered healthcare geared toward improving an individual's health status, including diverse populations (AHRQ, 2019). Satisfaction with doctor care as a measure of quality care includes medical care appropriately delivered and provided with positive behavior by physicians who prescribe the requisite treatment and encourage patient adherence (Chan et al., 2019). These characteristics involve patients being satisfied with doctors' care that exhibits compassion and competence without negative contexts (Rocque & Leanza, 2015). Patient satisfaction is promoted through compassionate doctor care that is

relational and fostered through forming relationships and communication (Rocque & Leanza, 2015). Indifferent doctor care is the inverse of compassionate care; that is, it is non-compassionate, embodying negative patient-centered attributes that engender a lack of trust and patient dissatisfaction (Rocque & Leanza, 2015).

Key findings revealed that race and ethnicity were associated with the three quality-of-care measures analyzed by one-way ANOVA. The initial analysis found that mean scores for satisfaction with doctor care differed significantly between the three racial-ethnic groups, with mean scores being 3.36 for non-Hispanic Whites, 3.31 for non-Hispanic Blacks, and 3.30 for Hispanics (see Appendix A). Score assessment denoted dissatisfaction with doctor care by respondents on the 5-point Likert scale with responses of 3 being dissatisfied and 4 being very dissatisfied. Those surveyed indicated that elderly Type 2 diabetics were not satisfied with the level of care received in previous years, including inference of a lack of access to care, whether on nights and weekends, and a lack of comprehensive care provided by specialists as well. Additionally, dissatisfaction with doctor care was also evident whether the location of care was easily accessible to the respondent's residence. Displeasure was evident through the doctor's lack of concern with the respondent's overall health initially and at follow-up. Bonferroni correction used in the analysis confirmed that all three racial and ethnic groups exhibited dissatisfaction with the provision of doctor care.

Secondly, doctor compassionate care mean scores showed that non-Hispanic African American respondents scored lower than Hispanic American respondents with

scores ranging from $M = 4.36$ to 4.47, respectively. However, both scores were relatively high compared to the 5-point Likert scale (see Appendix A). The Bonferroni post hoc test confirmed that differences existed between the racial groups on compassionate doctor care. Non-Hispanic Black respondents and Hispanic respondents indicated that they disagreed a little with the level of care provided, as shown with a response of 4. Responses of 5, *disagree a lot* (i.e., failing to agree), is the best answer sought. However, the replies given conveyed that disagreeing a little means to agree with reservations that care provision is culturally sensitive and empathetic. Despite this, the level of agreement shown in responses portrays some confidence in the doctor-patient relationship, that is, that the doctor completely understands problems and is genuinely concerned about the respondent's state of health.

On the doctor indifference scale, scores showed mixed results. Non-Hispanic White respondents' mean scores were lower than those of Hispanic respondents and non-Hispanic African American respondents, with mean scores ranging from 2.75 for non-Hispanic White respondents, to 2.82 for non-Hispanic African American respondents, and 2.84 for Hispanic respondents using the 5-point Likert scale (see Appendix A). Responses rounded up to 3 denoted *neither agree nor disagree*. Comparatively, responses of 2 equaled *agree a little*, and reactions of 1 equaled *agree a lot*. The use of rounded-up responses presented findings that showed that all groups were neutral in the answers given. Responses indicated that respondents could not decide if their indifference level implied that the doctor was unconcerned or provided care lacking empathy or was in a

hurried state during the patient visit to discuss or explain medical problems. These findings accentuated ambivalent responses to the idea that the doctor acted as if they were doing a favor by talking to the patient, thus reducing the respondent's confidence that the care provided would enable them to feel better. Bonferroni correction confirmed that non-Hispanic White respondents scored much lower than Hispanic respondents, with reasoning suggesting that their disagreements toward indifference may be more sensitive than the indifference experienced by non-Hispanic Black respondents and Hispanic respondents based on their survey responses. However, neutral, or extreme answers give accurate implications of how respondents feel toward being asked their feelings about certain situations (Chyung et al., 2017). Surveys that utilize a 5-point Likert scale with an established midpoint are more reliable in assessing respondents' views due to reduced cognition because of age, disease state, or educational level regarding their ability to express their true feelings about questions asked (Chyung et al., 2017). In situations where indifferent or not compassionate care predominates, a reduction in the use of and accessing primary and preventive care services by older African Americans and older non-Hispanic White Americans with chronic illnesses occurs (Arnett et al., 2016).

The effects of race and ethnicity, adjusting for covariates analyzed through multiple regression, as shown in Table 4, conveyed racial group differences. Satisfaction with doctor care was higher for Hispanic respondents compared to that of non-Hispanic White and non-Hispanic Black respondents. More specifically, satisfaction with doctor care was higher for people with Type 2 diabetes younger than 75 years of age.

Satisfaction with doctor care was also higher for Type 2 diabetic males, Type 2 diabetics with fewer chronic conditions (less than the median of 4.5), and Type 2 diabetics with higher adherence levels. The presumption is that covariates played a significant role in determining the level of satisfaction with doctor care received by Hispanic respondents. However, the strength of the differences in satisfaction was not substantial and did not remove their general exclamation of dissatisfaction with doctor care provision, $F(7, 1708) = 9.30$, $p = .001$, $R^2 = .037$.

Correspondingly, the analysis of compassionate doctor care, as shown in Table 5, illustrated that although non-Hispanic Black respondents scored lower than their Hispanic counterparts, increased frequency of adherence was significant and could apply to all racial and ethnic groups studied. No other associations were noted between race-ethnicity, $F(7, 1708) = 3.09$, $p = .003$, $R^2 = .013$.

Indifferent doctor care was discovered to be higher for Hispanic patients compared to non-Hispanic Black patients. However, non-Hispanic White respondent mean scores were lower than both minority groups even though survey respondents gave neutral responses. Further, as shown in Table 6, indifferent doctor care was found to be higher for those with more chronic conditions, and those with lower levels of frequency of adherence, $F(7, 1708) = 4.64$, $p = .001$, $R^2 = .019$.

Interpretation of the Findings

Findings from this study revealed that the race-ethnicity of elderly people with Type 2 diabetes was associated with the quality-of-care measures studied, namely

satisfaction with the provision of doctor care and indifferent doctor care accounting for the effect of covariates. Alternatively, compassionate doctor care provided no association with the race and ethnicity of elderly people with Type 2 diabetes even though higher adherence levels were found.

Disparities in healthcare affect the access and utilization of primary, preventive, and acute care services, and ultimately life expectancies among older African American and Hispanic individuals (Adini, 2019). Yet, there are numerous causes of patient dissatisfaction with care delivered by providers. Patient experiences of trust and distrust affect satisfaction with doctor care, including the need to adhere to the doctor's medication requirements (Adini, 2019; Rocque & Leanza, 2015). Type 2 diabetics of all races and ethnicities examined in this study showed dissatisfaction with doctor care. Researchers have reported that the doctor can provide exceptional service by meeting patient needs (Prakash, 2018). The doctor's attitude toward the patient matters, and doctors should project optimal customer service by being respectful and attentive toward patient inquiries regarding problems and associated risks while being cognizant of racial and cultural differences (Prakash, 2018). Despite satisfaction with doctor care being higher for Hispanic respondents than for non-Hispanic Black respondents, receiving enhanced care can increase satisfaction with doctor care in both racial and ethnic groups by removing constraining barriers. Enhanced care entails obtaining timely appointments, not having to wait too long at those appointments, and receiving continuous and coordinated care upon referrals to specialists (Butkas et al., 2020; Prakash, 2018; Tarraff

et al., 2017). These elements reflect the effect of a lack of patient-centered care, making the doctor-patient relationship's very valuable in improving patient satisfaction (Butkas, 2020). Satisfaction with doctor care increases when providers see the whole person and understands how the illness affects adherence and outcomes (Cook et al., 2015; Prakash, 2018). Further, the providers' lack of concern (indifference) for patient needs and overall health is the overriding cause of dissatisfaction with doctor care by Latino and Black patients regardless of the nature of the chronic condition or adherence to medications (Butkas et al., 2020).

Although race and ethnicity was associated with the three quality of care measures studied using the one-way ANOVA, the regression model's covariates determined that differences in satisfaction with doctor care were higher for Hispanic respondents than for non-Hispanic Black respondents. Butkas et al. (2020) reported that race and ethnicity and age, cultural stigma, and disease state inhibit access to care and improved outcomes. Although dissatisfaction with care was prevalent in both minority groups in this study, the covariates used revealed that satisfaction with doctor care was higher for those younger than 75 years of age, higher for those with fewer chronic conditions, and respondents exhibiting higher levels of frequency of adherence. These differences by race and ethnicity brought forth opposing degrees of dissatisfaction among the groups studied. Even though satisfaction was higher for Hispanic respondents, degrees of dissatisfaction arise because elderly diabetics with chronic conditions are affected by low cognitive abilities, cardiovascular illnesses, and increased adherence

levels, rendering them unsatisfied with the quality of care delivered (Bigelow & Freeman, 2017). As shown in Table 1, the respondents with Type 2 diabetes had approximately 4.5 chronic conditions, and 92% complied with medication regimens.

The effect of doctor indifference by race and ethnicity from this study adjusting for covariates in the model indicated that more indifferent care was shown to non-Hispanic White respondents than Hispanic respondents, and non-Hispanic Black respondents despite the number of chronic conditions found and higher frequency of adherence. This inference of indifference occurred because the non-Hispanic White respondents perceived the provider as not doing an excellent job giving care through displaying an antagonistic attitude in providing feedback on medical care delivered (Prakash, 2018). White, Hispanic, and African American respondents were unable to determine if the perceived level of indifference was predicated on the doctor being unconcerned or provided care absent empathy or due to the doctor conducting a hurried patient encounter prompting neutral responses. Characteristics of indifferent doctor care relating to Hispanic, African American, and non-Hispanic White respondents infer that neither group may be different concerning negative attributes ascribed to the provider. Indifferent care renders either group feeling powerless or without value in their relationships with providers, reducing access to care for all groups affected (Rocque & Leanza, 2015). Neutral responses (neither agree nor disagree) found in this study were based on ambivalent factors of positive or negative patient insecurities and the uncertainty of receiving compassionate or indifferent care from providers.

Findings from multiple regression analysis disclosed that African American respondents mean scores were less for compassionate care by the doctor than mean scores of Hispanic respondents. However, the extent of the differences found was minimal as both received lower levels of care that were deemed compassionate with some degree of reluctance. These findings are congruent with Tarraff et al. (2017), who reported that Blacks and Latinos in their study of racial differences in receiving patient-centered care obtained lower compassionate care than Whites. More so, compassionate doctor care was higher for those with high adherence levels, possibly due to the provider's affirmative relational skills. According to Rocque & Leanza (2015), the lack of compassionate care occurs due to the doctor's absence of relational and communicative skills. These skills may be limited by preferences for same-race providers by minority groups, by the inability of the provider to show rapport with the patient, and by the provider refraining from exhibiting a caring attitude through respectfully listening and making self-serving judgments about the patient negating the prospect of providing compassionate care (Rocque & Leanza, 2015). Tarraff et al. (2017) stated that when physicians' relational skills are positive, the provision of care is perceived as compassionate, (i.e., considerate, and empathetic).

Differences other than race explain the increased level of frequency of adherence (92%) found among the respondents surveyed in this study concerning the provision of compassionate care. Most of the respondents stated that they never skipped prescription doses to make prescriptions last and never took smaller quantities of medications given to

them by their doctor. Score responses to questions asked on the Likert scale with 1 = *often*, 2 = *sometimes*, and 3 = *never* revealed a mean score (M= 2.93) as shown in Table 2. In their meta-analysis of previous research, Adams et al. (2015) indicated that cognition relative to older Blacks and Latinos' health literacy in using medications might cause them to ignore or alter medication dosages prescribed notwithstanding costs. Given that providers equate medication compliance with improvements in health, this study's findings are different from research findings from the literature, indicating that non-Hispanic Blacks and Latinos experienced lower medication adherence levels than did Whites (Adams et al., 2015). While race alone does not lower adherence, it also is not a determinative cause of commitment to comply with medical regimens (Adams et al., 2015). Cultural differences and health literacy account for reduced compliance (Adams et al., 2015). Thus, higher adherence levels from compassionate doctor care delivered by doctors in this study supposes that this phenomenon may be a consequence of the provider showing compassion in reducing over-medication or polypharmacy in elderly Type 2 diabetics of all races and ethnicities (Brigelow & Freeman, 2017).

On the other hand, high levels of medication adherence in older adults with chronic diseases could be attributable to behavioral and educational initiatives through pharmacist-directed programs (Marcum et al., 2017). Alternatively, the provider's propensity to be caring and compassionate, mindful in keeping accurate medication logs, reviewing, and changing medications, and explaining potential side effects that exacerbate the disease process may improve adherence for Medicare recipients with

T2DM (Bigelow & Freeman, 2017). Corroboration of this finding occurred in a study of patients enrolled in a PCMH where nearly 50% of the enrollees were African American with hypertension and diabetes (Aysola et al., 2015). Patients who experienced care that was patient-focused, patient-centric, and strengthened by constructive relationships with providers, received compassionately delivered care that improved adherence through the assurance of same-day appointments and team-based care (Adams et al., 2015). Inference of this study's high adherence could originate from enhanced care offered. Further investigation may be needed.

Limitations of the Study

This quantitative ex post facto nonexperimental research study examined the association between race, Type 2 diabetes, and selected quality care measures through a conceptual framework thought to influence access to healthcare services for elderly African American Type 2 diabetics on Medicare compared to non-Hispanic Whites and Hispanics. Additionally, the prevalence of more than one chronic condition and Type 2 diabetes resulted in increased rates of hospitalizations and much longer lengths of stay for this population (Kiefer et al., 2015; Nataraj et al., 2017). However, this study did not show that racial differences were specific to African Americans regarding quality care measures contended to be predictors of access to healthcare. Although race and ethnicity were associated with the three quality of care measures studied adjusting for covariates, the effect of these outcomes inferred providing more patient-centered care to non-Hispanic White Americans and Hispanics than to non-Hispanic Black Americans.

Therefore, the supposition revealed that significant differences in access to healthcare for African Americans compared to the other racial and ethnic groups in the study did not materialize and require further investigation.

This study's limitations are those affected by the data source chosen. The Health and Nutrition Examination Survey (NHANES) or the Healthcare Effectiveness and Information Set (HEIDIS) may provide more specific variables to assess the quality-of-care measures. Additionally, operational definitions and the use of demographic variables that include income and education, and other statistical approaches may produce results that could be generalized to other races and ethnicities (Almaki et al., 2018). Furthermore, the probability of researching uninsured age groups 65 years of age and older may elicit different findings based on the quality-of-care measures used in this study. A qualitative analysis may be used with specific focus groups to determine the factors that affect satisfaction with doctor care and compassionate doctor care, giving more concrete reasons why indifferent doctor care reduces access.

Recommendations

Research conducted in this study stemmed from outcomes derived from an ex post facto research design. With this design, non-manipulated racial groups were assessed against a set of dependent variables to develop inferences regarding results found. Future research should employ a more stringent experimental research design that enumerates the exact causes or predictions that identify the reasons that lead to outcomes based on the provision of compassionate and indifferent doctor care. The primary goal is the

achievement of patient satisfaction with access to doctor provided care. Actual experiments are designed based on needed answers to specific ideas that produce an outcome (Creswell & Creswell, 2018). An investigation based on determining the effects of the patient-physician relationship through relational communication characteristics should balance trust and mistrust against the psychometric variables of compassion and indifference. This experimental research should include a homogenous sample of elderly people with Type 2 diabetes 65 years of age and older (experimental and control groups) with Medicare as their insurance base. Primary care physicians should be surveyed from either small primary care practices or large group settings to assess causation based on provider care level (Adams et al., 2015).

The second recommendation would be to develop a qualitative study using a narrative approach to gain information regarding delivering patient-centered care that is satisfactory and compassionate using a small group of Type 2 diabetics on Medicare. Santana et al. (2017) created a framework that entailed concepts relating to aspects of the patient-provider relationship. Solidifying the relationship between the patient and provider occurs by positive communication and compassion and determining the patients' level of involvement in coordinating their care from their physician referral to medical record transferability and discharge planning from acute care admissions. Using this recommendation may enhance patient-centered access by patient self-reported health care outcomes that corroborate the necessity of providing compassionate, respectful, and less indifferent care (Santana et al., 2017).

The third recommendation would be to use psychometric instruments to determine the effects of race and ethnicity on the quality-of-care measures used in this study. Patient-centered care delivery could be determined using validated tools such as the Patient-Centered Primary Care (PCPC) instrument. This instrument contains 36 items that ascertain access to care, satisfaction with care, and other associated psychometric attributes aligned with the delivery of primary care services (Cram & Niober, 2016). A defined sample of people with Type 2 diabetes and multiple comorbidities may provide evidence to corroborate or disprove associations between race and ethnicity and quality care measures discovered in this study.

Implications for Professional Practice and Social Change

The prevalence of diabetes will be significantly greater for those 75 years of age or older by 2030 (Bigelow & Freeland, 2016). As such, management of the disease through testing and screening will be ongoing, as will be the need for self-management education, lifestyle interventions, control of obesity, frailty, polypharmacy, and adverse mental health conditions (Bigelow & Freeland, 2016). Thus, findings from the study I conducted provided implications for professional practice and social change due to significant associations found between the race and ethnicity of elderly people with Type 2 diabetes on Medicare and quality-of-care measures. Based on the theory of health behavior used in this research, the predisposing elements of age and gender resulted in interesting insights with significant differences between satisfaction with doctor care by gender and age. Still, no differences were found on gender or age for compassionate

doctor care or indifferent doctor care. Gender and age differences in satisfaction with doctor care were found in those respondents who were male and under 75 years of age. The effect of race (being Hispanic American) was significant on two of three quality measures analyzed: satisfaction with doctor care and indifferent doctor care. Being African American showed a nonsignificant effect. The enabling factor, insurance (Medicare), did not affect access. It provided coverage for all individuals over 65 years of age and served as an available resource to all respondents allowing them to seek care as needed. Additionally, the need factors based upon respondents' reported health status and provider determinations of clinical status indicated that no significant relationships or racial differences existed between the BMI of diabetic respondents on any quality-of-care measure analyzed. Conversely, the number of chronic conditions showed a direct association with doctor care satisfaction and indifferent doctor care measures but not compassionate doctor care. This occurrence is seemingly due to the positive correlation between offering team-based care that improved patient satisfaction and negative attributes of segregation and physicians' predilection to provide indifferent care (Tarraff et al., 2017). In comparison, frequency of adherence as a factor of need was significant across all three quality measures.

Further, the lack of association between race and ethnicity and the provision of compassionate doctor care implies a need to create interventions to determine why this absence occurred even though identified high levels of frequency of adherence to medication regimens was found. These findings were the direct opposite of previous

research findings, where rates of nonadherence were more predominant in African American patients and Latino patients (Adams et al., 2017). The increased level of medication adherence found in study respondents could be a significant finding. Interventions that address the positive attributes of the patient-provider relationship may shed light on why respondents agreed with reservations regarding the delivery of compassionate care, as well as provide an explanation for increased frequency of medication adherence. The doctor's use of intercultural communication and relational skills is essential in promoting compassionate care and communicating the importance of taking medications as prescribed (Rocque & Leanza, 2015). Provider negativity geared toward culturally sensitive populations affects the perception of compassionate care delivery (Rocque & Leanza, 2015). However, in this study, the inference is that adherence was not affected by the provider's negativity.

As such, implications for professional practice and social change also call for measures to increase equitable healthcare access and availability to meet the needs of disparate populations such as older African American and Hispanic American diabetics. For older racial populations, prevention and preventive practices require the delivery of compassionate care, along with care that is not indifferent. The imperative of social change warrants the provision of patient-centered care for the good of the patient and families affected. Older Type 2 diabetics require care that meets these requirements. Thus, the PCMH is an appropriate primary care model that stakeholders can implement to meet those needs (Burton et al., 2018). Studies have shown that reductions have occurred

in the use of the emergency room for sick care and decreased hospitalizations due to primary care preventive and referral practices provided by the PCMH (Cuellar et al., 2016; David et al., 2014). This social change objective has the potential to eliminate impediments to access to healthcare. Increased life expectancies and quality of life for older African American Type 2 diabetics and Latino Americans are improved even though the specter of receiving primary care lacking patient-centered care that is satisfactory and compassionate exists (Chan et al., 2019).

Conclusions

This study's findings revealed an association between the racial and ethnic backgrounds of the racial groups studied with quality-of-care measures identified as critical factors in this research to evaluate healthcare access for elderly African Americans with Type 2 diabetes on Medicare. The inclusion of covariates in the study indicated a direct association between race and satisfaction with doctor care and indifferent doctor care, but not with the provision of compassionate doctor care. Despite the robust determinants of health services use by the predisposing and enabling factors analyzed, the significance of this result was the unexpected finding of increased levels of frequency of adherence in conjunction with the reluctant response by respondents that the doctor delivered compassionate care. Rates of nonadherence, as reported by Adams et al. (2017), are more prevalent in African American and Latinx populations. Previous reviews of the literature indicated that research is limited on whether older African Americans with chronic diseases such as Type 2 diabetes have less access to healthcare

than Whites (Fullerton et al., 2017; Tarraf et al., 2017). However, findings from this study inferred that no significant differences prevailed for African American respondents as hypothesized. Non-Hispanic Black Americans, Latinx, and non-Hispanic White American respondents experienced increased levels of frequency of adherence notwithstanding the levels of dissatisfaction with doctor care or the perception of compassionate or indifferent care provided that affected access to care notwithstanding the effects of age, gender, BMI, or the number of chronic conditions.

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Appendix A: Variables Used in the Study

NAME OF CONSTRUCT	DESCRIPTION	VARIABLE NAME
Demographic and other Independent variables		
RACE (nominal)	Race/ethnicity	DEM_RACE 1 = Non-Hispanic White 2 = Non-Hispanic Black 3 = Hispanic
AGE (nominal)	Age of Respondent	DEM_AGE 2 = 65,75 3 = >= 75
		GENDER
GENDER (nominal)	Identity of respondent	1= male 2 = female
BMI (ratio)	Basal Metabolic Index	1 = underweight, < 18.5 2 = healthy, 18.5- < 25 3 = overweight, 25- < 30 4 = obese, 30-40 5 =Extreme or high
INSURANCE (nominal)	Medicare Part A & B	ADM_H_ENT 1 = Part A or Part B
CHRONIC CONDITIONS (ordinal)		
NCHRON	Number of Chronic Conditions	HLT_NCHRNCND 1= Has 0-1 conditions 2= Has 2-3 conditions 3= Has 4-5 conditions 4= Has 6+ conditions

NAME OF CONSTRUCT	DESCRIPTION	VARIABLE NAME
TYPE OF DIABETES (nominal)	Type of diabetes diagnosed	
HLT_OCDTYPE		
Sample population	2,484	2 =Type 2: noninsulin dependent, adult-onset

Measures of Doctor Quality of Care include:

Satisfaction with Doctor Scale-Aggregation of the eight satisfaction ratings-continuous level of measurement.

Best answer indicated by *

QUALITY	Satisfaction: quality of medical care received last year?	
ACC_MCQUALTY		
		1= Very Satisfied*
		2 = Satisfied
		3 = Dissatisfied
		4 = Very Dissatisfied
		5 = No experience
AVAILABILITY	Satisfaction with medical care on nights and weekends?	
ACC_MCAVAIL		
		1= Very Satisfied*
		2 = Satisfied
		3 = Dissatisfied
		4 = Very Dissatisfied
		5 = No experience

NAME OF CONSTRUCT	DESCRIPTION	VARIABLE NAME
EASE	Satisfaction with ease of getting to Doctor's Office from home?	ACC_MCEASE 1= Very Satisfied* 2 = Satisfied 3 = Dissatisfied 4 = Very Dissatisfied 5 = No experience
INFORMATION ABOUT HEALTH ACC_MCINFO	Satisfaction with information about what was wrong?	1= Very Satisfied* 2 = Satisfied 3 = Dissatisfied 4 = Very Dissatisfied 5 = No experience
TREATMENT FOLLOWUP ACC_MCFOLUP	Satisfaction with follow-up after initial treatment?	1= Very Satisfied* 2 = Satisfied 3 = Dissatisfied 4 = Very Dissatisfied 5 = No experience

NAME OF CONSTRUCT	DESCRIPTION	VARIABLE NAME
CONCERNED ABOUT HEALTH	Satisfaction that the Doctor is concerned with overall health?	ACC_MCCONCRN
	1= Very Satisfied*	
	2 = Satisfied	
	3 = Dissatisfied	
	4 = Very Dissatisfied	
	5 = No experience	
LOCATION OF CARE	Satisfaction with medical care at the same location?	ACC_MCSAMLOC
	1= Very Satisfied*	
	2 = Satisfied	
	3 = Dissatisfied	
	4 = Very Dissatisfied	
	5 = No experience	
SPECIALTY CARE	Satisfaction with available care by specialists?	ACC_MDSPEC
	1= Very Satisfied*	
	2 = Satisfied	
	3 = Dissatisfied	
	4 = Very Dissatisfied	
	5 = No experience	

NAME OF CONSTRUCT	DESCRIPTION	VARIABLE NAME
DOCTOR PERFORMS COMPREHENSIVE CHECKS		
	Doctor checks everything when examining diabetic patients?	ACC_USKEVRY 1= agree a lot 2 = agree a little 3 = neither agree nor disagree 4 = disagree a lit 5 = disagree a lot*
DOCTOR IS COMPETENT	Doctor is competent and well trained?	ACC_USCOMPET 1= agree a lot 2 = agree a little 3 = neither agree nor disagree 4 = disagree a little 5 = disagree a lot*
UNDERSTANDING	Doctor completely understands what was wrong?	ACC_USUNWRNG 1= agree a lot 2 = agree a little 3 = neither agree nor disagree 4 = disagree a little 5 = disagree a lot*

NAME OF CONSTRUCT	DESCRIPTION	VARIABLE NAME
COMMUNICATIVE	Doc. tells all about med. condition	ACC_USTELALL 1= agree a lot 2 = agree a little 3 = neither agree nor disagree 4 = disagree a little 5 = disagree a lot*
COMMUNICATIVE	Doctor answers all questions	ACC_USANSQUX 1= agree a lot 2 = agree a little 3 = neither agree nor disagree 4 = disagree a little 5 = disagree a lot*
CONFIDENCE	Have great confidence in Doc.	ACC_USCONFID 1= agree a lot 2 = agree a little 3 = neither agree nor disagree 4 = disagree a little 5 = disagree a lot*

NAME OF CONSTRUCT	DESCRIPTION	VARIABLE NAME
DEPENDENT	Depend on Doc. to feel better	ACC_USDEPEND 1= agree a lot 2 = agree a little 3 = neither agree nor disagree 4 = disagree a little 5 = disagree a lot*

Doctor Provision of Compassionate Care Scale: Aggregation of 7 items that are of the same scale

Best answer indicated by *

NAME OF CONSTRUCT	DESCRIPTION	VARIABLE NAME
LACK OF DOC.-PT. RELAT.	Doctor seems to be in a hurry	ACC_USHURRY 5= disagree a lot* 4 = disagree a little 3 = neither agree nor disagree 2 = agree a little 1 = agree a lot
LACK OF DOC.-PT. RELAT.	Doctor does not explain medical problems	ACC_USEXPPRB 5= disagree a lot* 4 = disagree a little 3 = neither agree nor disagree 2 = agree a little 1 = agree a lot
LACK OF DOC.-PT. RELAT.	Health problems should be discussed but are not	ACC_USDICUSS 5= disagree a lot* 4 = disagree a little 3 = neither agree nor disagree 2 = agree a little 1 = agree a lot

NAME OF CONSTRUCT	DESCRIPTION	VARIABLE NAME
LACK OF DOC.-PT.RELAT.	Doctor acts if he is doing a favor by talking.	ACC_USFAVOR 5= disagree a lot* 4 = disagree a little 3 = neither agree nor disagree 2 = agree a little 1 = agree a lot

NEGATIVE VARIABLES TO BE REVERSE CODED

Best answer indicated by *

Doctor Indifference Care scale – Aggregation of 4 items of the same scale

NAME OF CONSTRUCT	DESCRIPTION	VARIABLE NAME
TOOK SMALL DOSE OF MEDS.	How often took smaller dose of prescription?	ACC_DOSESRX 1 = Often 2 = Sometimes 3 = Never
SKIPPED DOSE	How often skipped dose to make prescription last?	ACC_SKIPRX 1 = Often 2 = Sometimes 3 = Never

*Frequency of Adherence Scale =Two (2) variables (Covariate)

Appendix B: Links to Documents

2016 MCBS Codebook

https://www.cms.gov/files/document/2016-mcbs-puf-codebook.txt

2016 MCBS Data User's Guide: General Information Link

http://download.cms.gov/Research-Statistics-Data-and-Systems/Downloadable-Public-Use-Files/MCBS-Public-Use-File/downloads/2016MCBSpufuserguide.pdf

2016 MCBS Methodology Report: Report Link

https://www.cms.gov/Research-Statistics-Data-and-Systems/Research/MCBS/Downloads/MCBS2016MethodReport508.pdf

2017 Patient-Centered Medica Homes Standards

https://store.ncqa.org/pcmh-standards-and-guidelines.html