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The Relationship Between Patient-Provider Communication and Provider Trust for Cancer-Related Information

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This is to certify that the doctoral study by

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has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

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Walden University
2024

Abstract

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Kamesha Turner Roberts

MMS, Saint Francis University, 2006

BS, Morgan State University, 2003

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Healthcare Administration

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February 2025

Abstract

Lack of trust in the healthcare system remains a psychosocial influence of reduced routine cancer screening in the United States. Using the Health Information National Trends Survey (HINTS) 6, the specific research problem that was addressed through this study was whether there was a statistically significant relationship between patient-provider communication and provider trust for cancer-related information among African Americans residing in the mid-Atlantic region of the United States. The purpose of this quantitative, retrospective study was to examine the relationship between patient-provider communication and provider trust for cancer-related information. The theory that grounded this study was Donabedian's conceptual model and its three different elements: structure, process, and outcome, all of which contribute to the quality of patient care. For this study, the structure consisted of the provider's office, the process consisted of patient-provider communication, and the outcome consisted of provider trust. A regression analysis of one research question found a statistically significant relationship between patient-provider communication and provider trust for cancer-related information ($p < .001$). Recommendations for future research include addressing successful and efficient communicative techniques for cancer screenings, improving provider trust in the African American population, and expanding this research to all minority groups. This study may impact positive social change by adding to the existing body of knowledge that examines the relationship between patient-provider communication and provider trust.

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Dedication

Words cannot express the joy and accomplishment I have felt throughout this doctoral process. I have always wanted to reach a higher educational goal, and completing my doctorate has been the ultimate end-goal that I could not have ever thought would have been possible. I will not say it has been easy. Life threw some curveballs that I had no way or even thought of seeing. This capstone is a true reflection of the unwavering support and love I received from my family and friends during this process. But through it all and my trust in God, I made it through.

I owe an immense debt of gratitude to my parents, who nurtured my curiosity and have always supported my educational endeavors from the very beginning. Thank you for choosing me as your daughter. Dad, I love and miss you but know that you have been with me every step of the journey. I know that I have made you proud. I just wish you could have been here physically to see it. Mom, my biggest supporter. Thank you for encouraging me and always asking how I am doing. Your support has meant so much to me and I hope I have made you proud too.

To my husband, Bryan, part of this degree belongs to you because of your encouragement, push, and desire for me to do greater things and be a greater person. Thank you for listening to me complain, giving me very poignant suggestions on my many, many papers and assignments, and being a strong shoulder to lean on. I am in awe of your drive, despite all that you have been through these past four years. Your strength has shown me how to persevere through challenges, and I am forever in awe of you. You are my person, and I will always love you and be there for you.

To my son, Carter, you are my joy, my everything. You have been the greatest blessing and came at the best time in our lives. You were there to show me love when I lost one of the most important people in my life. I am so proud of you and want the very best for you. You may not know this, and I definitely have not told you this, but you are why I chose to pursue this degree. I wanted to show you that all things are possible when you put your mind to it and set a goal for yourself. Always remember that your education is something that can never be taken from you.

One of the best things you have said to me during this journey was, “Mom, I want to go to school like you.” I know you have quite a few years to go, but keep pushing, and you will get there. You are a smart, talented, caring, and loving young man. Never lose these qualities! The world can be a scary place and can sometimes feel unfair. Stay as you are, and never lose your confidence, drive, and sense of self. I know I tell you all the time I love you, but this is more than you will ever know.

Acknowledgments

Words cannot express the gratitude I possess for my Committee Chairperson, Dr. Donna Clews. The time taken to offer her unwavering support has been invaluable. I am equally thankful for her meticulous attention to detail and constructive feedback, which have shaped this capstone and enhanced the quality of my work. I am forever thankful for her commitment and patience with me during this process. I also would like to acknowledge my Second Committee Member, Dr. Matt Frederiksen-England, for his suggestions and feedback during the completion of my research study. To all the professors I have had the pleasure of having during my doctoral studies, thank you for helping me succeed.

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Section 1: Foundation of the Study and Literature Review

All population groups in the United States are affected by cancer, but minority populations are disproportionally impacted by the disease (Zavala et al., 2021). African Americans, while having an overall decreased incidence of cancer compared to other racial and ethnic groups, have a substantially higher death rate and lower survival rate (Roy et al., 2020). Lower socioeconomic status, decreased rates of access to care, and limited or lack of insurance are cited as statistically negative influences. The observed disparities may be due, in part, to increased risk factors, but also to lower rates of recommended and completed preventative cancer screening (Roy et al., 2020). Effective patient-provider communication and provider trust can potentially lead to having the most appropriate cancer screening tests. Therefore, the topic of this study was patient-provider communication and patient trust in provider-supplied cancer information.

The purpose of this study was to examine if there is an association between patient-provider communication and provider trust for cancer-related information among African Americans residing in the mid-Atlantic region of the United States. For the purpose of this study, the mid-Atlantic region included the following states: Delaware, the District of Columbia, Maryland, New Jersey, New York, Pennsylvania, Virginia, and West Virginia. This study is significant and needed to be conducted because it adds to the growing body of knowledge on the relationship between patient-provider communication and provider trust for cancer-related information and has the potential for positive social change implementation in African Americans in the mid-Atlantic region of the United States.

This section includes the background of the study, followed by the problem statement. It discusses the purpose of the study and then presents the research question and hypotheses, and theoretical framework related to the study. The nature of the study is presented, followed by a discussion of the strategy used to locate the literature used. A review of the empirical literature related to this study is presented with definitions of the key concepts, assumptions, scope and delimitations, limitations, and significance. The section concludes by summarizing the major themes of the literature and how the present study fills the gap and will extend knowledge in the discipline.

Background

Existing literature suggests how patient-provider communication can be an effective means of influencing provider trust (Asan et al., 2021). Researchers have investigated the issue, but there is little existing literature on the role patient-provider communication and provider trust play in the receipt of cancer-related information. The purpose of this quantitative, quasi-experimental, retrospective study was to examine if there is a relationship between patient-provider communication and provider trust for cancer-related information among African Americans residing in the mid-Atlantic region of the United States. This study is significant in that it will add to the growing body of knowledge on the relationship between patient-provider communication and provider trust for cancer-related information in African Americans in the mid-Atlantic region of the United States, creating positive social change. It also may contribute to positive social change in that it may affect how providers communicate with patients, thus improving the patient's trust.

Problem Statement

The specific research problem that was addressed through this study is whether there is a statistically significant relationship between patient-provider communication and provider trust for cancer-related information among African Americans residing in the mid-Atlantic region of the United States. Researchers have investigated this issue, but there is little literature on the role patient-provider communication and provider trust play with cancer-related information among African Americans residing in the mid-Atlantic region of the United States. Lack of trust in the healthcare system remains a psychosocial influence of reduced uptake of cancer screening in the United States (Adams et al., 2017). Mistrust of the healthcare system and its providers, also known as medical mistrust, is associated with lower health services utilization among African American patients and is a widely cited attitudinal barrier to colorectal cancer screening and treatment seeking (Adams et al., 2017). Previous studies on the factors influencing mammography screening adherence among African American women have noted that among those that are a negative influence, medical mistrust is a factor negatively associated with mammography screening (Agrawal et al., 2021). A growing body of literature exists discussing the quality of clinician-patient communication and its effects on the overall trust in clinicians and the related health outcomes (Asan et al., 2021).

Purpose of the Study

The purpose of this quantitative, quasi-experimental, retrospective study was to examine if there is a statistically significant relationship between patient-provider communication (independent variable) and provider trust (dependent variable) for cancer-

related information among African Americans (co-variate) residing in the mid-Atlantic region of the United States (co-variate). Patient-provider communication is the shared and mutually understood exchange of information between the patient and provider (Patient-Provider Communication Network, 2023). Provider trust is the patient's belief that a care provider is working in the patient's best interests (Tegenu Lemma et al., 2023) and a collection of expectations that the patients have from their provider (Rasiah et al., 2020).

Research Question and Hypotheses

The research question (RQ) for the study was "What is the relationship between patient-provider communication and provider trust for cancer-related information among African Americans residing in the mid-Atlantic region of the United States?"

Null Hypothesis (H_0): There is no statistically significant relationship between patient-provider communication and provider trust for cancer-related information among African Americans residing in the mid-Atlantic region of the United States.

Alternative Hypothesis (H_1): There is a statistically significant relationship between patient-provider communication and provider trust for cancer-related information among African Americans residing in the mid-Atlantic region of the United States.

For the purpose of this study, the independent variable was patient-provider communication. The dependent variable was provider trust. Patient-provider communication was measured as *always* to *never* on a 4-point Likert scale (1 = *Always*, 2 = *Usually*, 3 = *Sometimes*, 4 = *Never*). Provider trust was measured as *a lot* to *not at all*

on a 4-point Likert scale (1 = *A lot*, 2 = *Some*, 3 = *A little*, 4 = *Not at all*). Patient-provider communication was measured by the following questions on a 4-point Likert scale, with 1 = *Always*, and 4 = *Never*:

- How often did doctors, nurses, or other health professionals that were seen during the past 12 months explain things in a way you could understand?
- How often did doctors, nurses, or other health professionals that were seen during the past 12 months spend enough time with you?
- How often did doctors, nurses, or other health professionals that were seen during the past 12 months involve you in decisions about your health care as much as you wanted?
- How often did doctors, nurses, or other health professionals give you the chance to ask all the health-related questions you had?
- How often did doctors, nurses, or other health professionals that were seen during the past 12 months make sure you understood the things you needed to do to take care of your health?

Provider trust is the belief that a care provider is working in the patient's best interests (Tegenu Lemma et al., 2023) and a collection of expectations that the patients have from their provider (Rasiah et al., 2020). Provider trust was measured by the following question: In general, how much would you trust information about cancer from a doctor or other healthcare professional?

Theoretical and/or Conceptual Framework

The theory that grounded this study was Donabedian's (1996) conceptual model.

The Donabedian model is a conceptual framework used to evaluate health care services and quality of care. The Donabedian framework consists of three different elements, structure, process, and outcome. Within the Donabedian (1966, 1988) model, the structure consists of evaluating care delivery and includes practical underpinnings, such as staff, equipment, financing, hospital buildings, and associated elements, necessary for providing health care services. The process consists of evaluating the relationships that occur between patients and services throughout the health care delivery process. The outcome element consists of assessing the effects of health care delivery on the quality of life and the health status of populations and patients, at any level. Using the framework's three elements, for the purpose of this study, the structure consisted of the hospitals, clinics, and/or doctors' offices within the overall healthcare system, the process consisted of patient-provider communication, and the outcome consisted of trust in the provider (provider trust).

Nature of the Study

To address the research questions, the nature of the study consisted of a quantitative quasi-experimental retrospective design. A quasi-experimental design was used because this study established a cause-and-effect relationship between an independent and dependent variable using information from a survey. This is a retrospective study because it included data that occurred during the 2022 calendar year to determine which components of patient-provider communication have the most influence on provider trust for cancer-related information among African Americans residing in the mid-Atlantic region of the United States.

The secondary data used for the study comes from the Health Information National Trends Survey (HINTS). Within the database, the existing secondary data were accessed for patient-provider communication and provider trust. HINTS provided data points for resources, both the independent variable of patient-provider communication and the dependent variable of provider trust. The data points are provided through the analysis of survey responses reported to the National Cancer Institute (NCI). They are available to the public. The data were analyzed by utilizing an ordinal regression analysis in SPSS. A multiple regression analysis is used when there are multiple independent variables and one dependent variable. This study had one independent variable, which was comprised of five questions. Each question was reviewed to determine which one had the most weight on the outcome, which was the one dependent variable of provider trust. The five independent variable questions that were used to measure patient-provider communication were measured on a 4-point bi-polar Likert scale ranging from 1 (*always*) to 4 (*never*). The dependent variable of provider trust was measured on a 4-point bipolar Likert scale from 1 (*a lot*) to 4 (*not at all*). Since this research study had one independent variable comprised of five questions and one dependent variable, an ordinal multiple regression analysis was chosen to evaluate the data for statistical significance between the selected variables.

Literature Search Strategy

For this study, I conducted a literature search strategy using peer-reviewed scholarly articles from the following databases and websites: Walden Library, EBSCO host database, Google Scholar, HINTS, Thoreau, ScienceDirect, Academic Search

Complete, MEDLINE with Full Text, APA PsycInfo, PubMed, and ProQuest. I used a Boolean search strategy for all data resources with phrases related to patient-provider communication and provider trust for cancer-related information among African Americans residing in the mid-Atlantic region of the United States. The scope of the literature review in terms of years was restricted to a range of 2017 to 2023, which aided in capturing the most current seminal and peer-reviewed literature related to patient-provider communication and provider trust. The key search terms included *patient-provider communication*, *provider trust*, *provider mistrust*, *perceptions of care*, *health disparities*, *cancer*, *breast cancer*, *early breast cancer diagnosis*, *breast cancer stage*, *early-stage breast cancer*, *prostate cancer*, *colon cancer*, *ovarian cancer*, *race*, *ethnicity*, *African Americans*, *African American women*, *African American men*, *Black Americans*, *cancer screening*, *health care disparities*, *rural*, *rural community*, *shared decision-making*, *healthcare administration*, and *patient satisfaction*.

Literature Review Related to Key Variables and Concepts

The purpose of this quantitative study using secondary data was to investigate the relationship between patient-provider communication and provider trust for cancer-related information among African Americans residing in the mid-Atlantic region of the United States. The independent variable was patient-provider communication. Effective communication is integral to quality healthcare (Sharkiya, 2023). Patient-provider communication, which is included as a healthcare quality metric (Centers for Medicaid and Medicare Services [CMS], 2020), is vital when considering increasing the likelihood of having preventative cancer screenings.

The dependent variable was provider trust for cancer-related information among African Americans residing in the mid-Atlantic region of the United States in 2022. Cancer affects 1 in 3 people in the United States (American Cancer Society, 2023). Since some cancers can be found early, which is before they have had a chance to grow or spread (American Cancer Society, 2023), it is imperative to prevent their occurrence, particularly before there is a chance for progression or metastasis. Medical and provider mistrust has been negatively associated with cancer screenings (Agrawal et al., 2021). In this study, I sought to determine whether there is a statistically significant relationship between patient-provider communication and provider trust for cancer-related information among African Americans residing in the mid-Atlantic region of the United States.

Patient-Provider Communication

Essential to clinical function and building the necessary patient-provider relationship, effective patient-provider communication aids in the delivery of high-quality healthcare while also promoting positive patient satisfaction with care and the patient's perspectives and experiences (Jiang, 2019; Trant et al., 2019). When communication is patient-centered, it promotes a caring environment which encompasses trust, rapport building, shared decision making, patients' emotional and social well-being (Hawkins & Mitchell, 2018). Patient outcomes rely on effective communication, and to be effective, the communication must be clear for the patient to understand their condition fully.

For cancer patients, communication is especially important because of the complexity of the diagnosis and treatment (Trant et al., 2019). Preventing the

development of cancer or diagnosing cancer in its early stages is vital to promote survivorship. A study surveying 174 patients and 18 providers at the Smilow Cancer Hospital Breast Center showed a statistical significance of patient satisfaction with provider communication style similarity in some of the entire study population, noting the importance of a tailored provider communication style to the patient's communication style (Trant et al., 2019). While the study's findings may not be applicable to the general population due to its single-site setting, its implications for the overall concept of appropriate patient-provider communication are evident. In another study by Trieman et al. (2018), the effects of patient-centered communication (PCC) were examined against newly diagnosed colorectal patients' quality of life and satisfaction with care. Based on responses from 501 participants residing in North Carolina aged 21 or older, the study's statistically significant findings included overall higher scores being found in the respondents' patient-provider views on who thought about more than one healthcare provider ($p \leq .011$), the exchanging of information ($p = .008$), the fostering of healing relationships ($p \leq .030$), making decisions ($p \leq .010$), and responding to emotions ($p \leq .014$). These findings highlight the importance of higher-quality communication and a team-based approach to cancer care.

A component of patient experience and satisfaction relies on patient-provider communication. The Consumer Assessment of Healthcare Providers and Systems (CAHPS), a program of the Agency for Healthcare Research and Quality (AHRQ), was developed to support better patient care (AHRQ, 2023). The CAHPS Survey aids healthcare organizations in assessing the patient experience in different settings and for

specific conditions, which can then be compared to other departments and facilities using the same quality measure (AHRQ, 2023). There are four settings in which patient or insurance enrollee experience is measured: providers (i.e., clinician and group, hospice, home health care), condition-specific care (cancer care, mental health care), health plan and related programs (health plan, dental plan), and facility-based care (i.e., hospital, nursing home, emergency department) (AHRQ, 2020). The AHRQ's CAHPS survey uses quality measures from the clinician and group survey to assess patient experience, particularly how well providers communicate with patients. The communication measure is assessed through questions asking if the provider explained things in a way that was easy to understand, listened carefully to the patient, showed respect for what the patient had to say, and spent enough time with the patient (AHRQ, 2020).

Patient Population Demographics and Provider Communication

As with provider trust (Sutton et al. 2018), patient satisfaction with patient-provider interaction and satisfaction with communication has been reported as being experienced to a lesser extent in African Americans when compared to White Americans (Hawkins & Mitchell, 2018). While multiple factors contribute to African American patients' dissatisfaction with patient-provider interaction and communication, negative perceptions of care for both the patients and providers, as well as discrepancies in communication techniques and health literacy, have affected the influence of effective patient-provider communication in this population. In a study examining the potential increase in cancer screening tests in African American men through patient navigation interventions, a total sample of 1,666 (n = 1,666) qualified and participated (Hawkins &

Mitchell, 2018). The study participants with certain sociodemographic characteristics (over 75 years old, single, separated, widowed, or divorced, and men with depressive symptoms) were more significantly more likely to report poor patient-provider communication when compared to the other study groups. While the study was cross-sectional and lacked random sampling, it underlined the importance of communicating needs and concerns regardless of individual characteristics and attributes. It also highlighted how providers can influence active participation in care when there is successful patient-provider communication. In another study, Anderson et al. (2021) investigated the similarities and differences between African American and White breast cancer survivor's perspective of provider communication needs. Results revealed that there is a significant impact on patients' social wellness when communication practices are sensitive and personalized, offer support, and encourage a rapid response. They also found there are race differences in communication, such as Black women reporting more likely not to have their communication needs met when compared to White women and not fully understanding treatment details despite asking for clarification from their providers. Again, the researchers' findings underline the role of timely patient-centered communication during the treatment plan's last stages or phases, which helps prevent disease progression or recurrence. Their findings also stress the magnitude of race concordance strengthening the patient-provider relationship when time is taken to acknowledge the differences and adjust communication techniques to positively impact patient satisfaction and trust in their medical care.

Patient-Provider Communication and Cancer Screening

When caught early, many cancers may be prevented or successfully treated. For example, in the United States in 2020, there were 239,612 new breast cancer diagnoses reported in females, while about 42,000 died from the disease, which is lower than in 2019 (Centers for Disease Control and Prevention [CDC], 2023). The same is seen with other cancers, such as colorectal, genitourinary, and gynecological. While the statistic is promising, it demonstrates the role of preventive screenings to diagnose cancer at an earlier stage when it is treatable. According to the CMS (2023), quality metrics are "measures used to quantify healthcare processes, outcomes, patient perceptions, and organizational structures and/or systems that are associated with the ability to provide high-quality health care and/or that relate to one or more quality goals for health care" (para. 2). When striving for quality metrics, healthcare organizations aim to positively impact healthcare output. Healthcare output, if executed effectively, impacts patients' health and satisfaction with care (Sharkiya, 2023). When patient-provider communication is effectual, it can improve provider trust thus improving patient satisfaction and care quality (Sharkiya, 2023).

Healthcare quality metrics aim for providers and organizations to provide effective, safe, efficient, patient-centered, equitable, and timely care (CMS, 2020). Cancer screening is included in measures for process and utilization to provide such care. Patient-provider communication aids in advancing screening measures and plays a role in influencing the likelihood of receiving cancer screenings (Kindratt et al., 2020), thus supporting healthcare quality measures. Lack of provider trust and provider screening

recommendation can negatively affect the likelihood of receiving preventative cancer screenings and may cause barriers to receiving such care in minority communities. For example, Kindratt et al. (2020) revealed that Hispanic and non-Hispanic Blacks who reported having providers who always demonstrated PPC quality had a greater likelihood of receiving colorectal cancer screening and that health-literate (easy-to-understand) provider practices were associated with increased odds of receiving cancer screenings across all racial and ethnic groups.

Provider Trust

Provider trust has been considered an essential aspect of the patient-provider relationship, linking positive effects on health outcomes. Past research on the subject has found that patients who report more trust in their physician and other healthcare providers are more engaged with their care, more likely to follow through with recommended care and medications, and often have better control of chronic conditions (Greene & Ramos, 2020). Provider trust has also been associated with better healthcare utilization, including continuity of care, limited delays in care, and maintaining regularly scheduled appointments.

Greene and Ramos (2020) examined patient trust in their healthcare providers through identifying health providers' behaviors that influence patient trust. The quantitative portion of their study used data from a large nationally representative survey (the March 2019 Health Reform Monitoring Survey [HRMS]) to secondarily analyze responses related to the relationship between trust and the key components of trust identified in the qualitative interviews. Of the 9,811 survey respondents, 6,392 were used

for the study's analysis, and the results found that effective communication, care and compassion demonstrated towards the patient, and demonstrating competence help to build provider trust. The other portion of their research was composed of a mixed method study, which included 40 semi-structured qualitative telephone interviews that were used to identify key health care provider behaviors that patients reported as building (or losing) their trust. Participants were asked how much they trusted their usual provider and then asked an open-ended question about why they felt that way. Those that were identified as having trust were asked whether they had ever previously had a provider who they strongly trusted, and if they did, they were asked the reasons why that provider was trustworthy. Finally, they were asked for any suggestions they would give a provider to gain patient trust and how to avoid provider mistrust. Green and Ramos found that, overwhelmingly, the participants reported that trusting their usual healthcare provider was very important and that provider communication, caring, and competence build trust in their healthcare provider (35 or more of the 40 participants).

Hong and Oh (2020) conducted a study examining the effect of patient-centered communication on patients' trust in their healthcare provider and their perceptions of the quality of care they received. Using the 2012 HINTS, 3,273 respondents were surveyed on their experiences with healthcare providers for their own healthcare in the past 12 months. Most were female (59.4%) and married (52.5%), and identified as being white (63.7%). African American (14.7%), Hispanic (10.2%), Asian (3.9%), and other (2.9%) accounted for the remaining respondents' category groups. Using quantitative analysis (chi-square), the researchers found that trust was a statistically significant mediator

between patient-centered communication and patients' perceptions of the quality of healthcare, suggesting that an open and positive patient-provider communicative relationship increases the likelihood of improved provider trust and patients' satisfaction with their medical care. The providers also benefit from the trusting relationship because patients are more likely to follow treatment and care recommendations, thus reducing the economic burden of the overutilization of medical services on the healthcare system, demonstrating the positive influence of patient-provider communication on provider trust. There were some limitations to the study, though, through its reliance on secondary data and the grouping of different types of healthcare providers into one category, and no consideration account for the differences in cultural views concerning healthcare delivery factors, such as the relationship between the patient and healthcare provider.

Medical and provider mistrust is associated with an overall dissatisfaction with and avoidance of healthcare, non-adherence to recommended treatment, and underuse of healthcare services (Cuevas et al., 2019). It has, historically, been linked to the interpersonal relationship between the patient and provider. However, it also may reflect the historical and past experiences of the patient, such as lived or secondary experiences related to negative past encounters with healthcare professionals or the healthcare system and organizational policies or procedures (Adams et al., 2017). Perceived discrimination and racism, underrepresentation, and lack of participation in medical studies (Sutton et al., 2018) have also been viewed as contributing factors to medical and provider mistrust.

These experiences have particularly been historically evident and documented in the African American population, which has negatively impacted their view of the

medical system. Multiple past research studies have found that African American patients are significantly more likely to report mistrust toward medical care and the medical establishment when compared to their Caucasian counterparts (Cuevas et al., 2019; Sutton et al., 2018). Such data suggests that trust in health information, medical providers, and the healthcare system plays a key role in increasing provider trust and trust in the healthcare system (Williams et al., 2021).

Adams and Craddock (2023) chose to examine the effects of patient-provider communication on medical mistrust in young African American women, citing its association with preventative service delays, low medication adherence, and healthcare underutilization. Using a mixed-methods approach taken from a larger mixed-methods study, a sample of 174 young Black women aged 18-24 were recruited to examine sexual health communication from June 2018 to December 2018. A total of 200 respondents were asked a series of qualifying study questions, including certain demographics and sexual activity status. A resulting 174 women (87% of the total number of respondents) were eligible for their study. Medical mistrust was measured using the Group Based Medical Mistrust Scale (GBMMS), a 5-point scale measuring the perceived mistreatment of individuals based on ethnicity ranging from 1 to 5 (*strongly disagree* to *strongly agree*). Patient-provider communication was measured using four composite questions from the Doctors Who Communicate Well portion of the CAPHS health plan survey ranging from 1 to 4 (*never* to *always*) 4-point scale. ANOVA examined the mean differences in patient-provider communication, while regression analysis was used to examine associations between medical mistrust and patient-provider communication. Of

their results, the most notable was the finding of patient-provider communication being negatively associated with medical mistrust. While its relevance is seen, the results cannot be imparted to the general population due to its cross-sectional sampling methods. Also, the participants' responses were self-reported, which can give way to bias depending on the questions presented.

When interacting with patients, medical providers seek to build good interpersonal relationships, which is usually accomplished by increasing trust, facilitating information exchange, and involving the patients in medical decision-making (Hong & Oh, 2020). Improving patient-provider interactions may help to reduce the negative impacts of provider mistrust (Cuevas et al., 2019). When patients are actively involved in their care and work as partners with their healthcare providers to reach their health goals, they are more likely to find valuable information that is beneficial for their health and to follow recommended screening and treatment.

In an effort to determine the effects of patient-provider communication on medical mistrust (provider trust), during 2007-2008, Cuevas et al. (2019) randomly assigned 231 primary care patients aged 40 or older from a hospital-based, adult clinic in the Western United States to view video-recorded vignettes of cardiologists recommending two different cardiac procedures using either low or high patient-centered communication. A Likert-type 5-point scale from *strongly disagree* to *strongly agree* was used to measure a total of 10 items to measure the level of trust in the general healthcare system and physician mistrust. Of the three hypotheses tested, (H_1) African American patients will be more likely to report medical mistrust compared to White patients, and

(H_2) medical mistrust will predict greater physician mistrust (and others) were the two hypotheses deemed most appropriate for use in this literature review. H_1 and H_2 were addressed using multiple linear regression, and to assess the level of mistrust, the researchers reverse-coded corresponding question items, and the responses were averaged to qualify the level of mistrust or exposure to patient-provider communication, with higher scores indicating greater mistrust or exposure to patient-provider communication. The results found that high levels of medical mistrust were associated with greater physician mistrust (statistical significance $p < .01$), and for patients with exposure to high levels of patient-provider communication, the relationships between medical and provider mistrust were weaker than those with lower levels of patient-provider communication (statistical significance $p < .01$). Though the findings demonstrate how effective patient-provider communication can increase the impact of provider trust, the study failed to include some important features of patient-provider communication and other variables that may contribute to physician and patient behavior, and simulations were used which could limit real-world decision-making. Also, a smaller sample size was utilized, and the researchers noted they may have had an alternate outcome if a larger sample size had been used instead.

In another example, Sutton et al. (2018) examined the predictors of medical mistrust and provider trust. Conducting a secondary analysis of data from the "Narrowing the Gaps in Adjuvant Therapy" study, a sample of 359 women (210 African American, 149 Caucasian) with a diagnosis of invasive, non-metastatic, breast cancer in the early stages of treatment (within six weeks post-surgery) were recruited from two medical

centers in Washington, D.C., one in Detroit, MI, and via community outreach efforts. The women participated in a telephone survey which included questions pertaining to group-based mistrust, sociodemographics, communication, and patient attitudes and beliefs about medical care and breast cancer treatments. A multiple linear regression analysis was used to determine the variables most likely to influence medical mistrust and communication and also used to measure the statistical significance of medical mistrust to the chosen variable (e.g., education, satisfaction), with $p < .01$. While there was no significant relationship between total satisfaction and medical mistrust, results from the study indicated that women with greater medical mistrust were less satisfied with their provider's ability to communicate and their perceived quality of care establishing the importance of successful patient-provider communication in enhancing provider trust, which can also improve clinical outcomes and perceptions of care.

Provider Trust and Cancer Screening

Since some cancers can be found early, which is before they have had a chance to grow or spread (American Cancer Society, 2023), it is imperative that individuals have regular cancer screenings to prevent such incidences from occurring. Of the factors that contribute to decreased cancer screening, lack of trust in medical professionals and the healthcare system, also known as medical mistrust, as a whole, remains an integral psychosocial influence of reduced uptake of cancer screening in the United States (Adams et al., 2017). In minorities, especially within the African American community, medical mistrust is associated with a decreased incidence of health services utilization in African American patients and, according to Adams et al., a widely cited attitudinal

barrier to certain screening and treatment seeking, which contribute to higher rates of cancer recurrence and mortality (Sutton et al., 2018).

Screening and early detection measures are modalities that have the potential to save countless lives by detecting cancer early, but disparities still exist when considering adherence to the recommended guidelines. Because of the higher rates of cancer recurrence and mortality in the African American population, there is a need to understand the possible contributing factors to both aspects. The most common predisposing factors and barriers to cancer screening nonadherence include low socioeconomic status, low education level, lack of insurance or underinsured, and decreased access to healthcare. Some studies have even suggested that patients are more likely to complete cancer screenings when they are recommended by race-concordant healthcare providers (Krieger et al., 2021). One other factor to consider is medical and provider mistrust, which has also been negatively associated with cancer screenings (Agrawal et al., 2021). Agrawal et al. (2021) conducted a quantitative study using the Anderson Behavioral Model of Health Services to examine the factors related to adherence to breast cancer screening recommendations by the National Comprehensive Cancer Network (NCCN) in 919 African American, church-going women from Houston, Texas aged 40 years or older. Of the 919 participants, 616 were breast cancer screening adherent. Logistic regression analysis revealed associations between breast cancer screening over the previous 12 months and participants' predisposing, needs, and enabling factors. Of the results, ideal patient-provider communication ($p = .015$) and having health insurance ($p < .0001$) were found to be significantly associated with

screening adherence. While the study builds upon existing literature concerning African American women and breast cancer screening adherence and expands on the positive association between the patient-provider relationship and cancer screening adherence, it was limited to a specific community of African American women in the South, and the results could not be generalized to the general population.

Literature Review Summary

Ideal patient-provider communication was found to be statistically significantly associated with active participation in care (Hawkins & Mitchell, 2018) and screening adherence (Agrawal et al., 2021). Cancer patients' perspectives of communication have been found to be affected by the provider's acknowledgment of differences in communication needs when recommending screening studies (Anderson et al., 2021). Treiman et al. (2018) and Kindratt et al. (2020) conducted studies that examined and found the positive effects of patient-centered communication (PCC) quality on the likelihood of receiving preventative cancer screenings. Their findings also highlight how the patient's participation in their care, satisfaction with care, and quality of life are affected when provider communication is not of quality or lacks recognition of communication differences between races.

The influence of provider trust on patients' adherence to medical recommendations has been linked to better control of chronic conditions and overall continuity of care (Greene & Ramos, 2020). Patients who trust their providers are more engaged with their care and more likely to be satisfied with the care they receive. Providers also benefit from the trusting relationship because patients are more likely to

follow treatment and care recommendations, thus reducing the economic burden of the overutilization of medical services on the healthcare system (Hung & Oh, 2020). Studies examining the importance of enhanced provider trust suggest an improvement in clinical outcomes, perceptions of care, and cancer screening adherence (Agrawal et al., 2021; Hung & Oh, 2020; Sutton et al., 2018).

African Americans have the highest mortality rate of any racial and ethnic group for all cancers combined and for most major cancers (U.S. Department of Health and Human Services Office of Minority Health, n.d.). Having the most appropriate cancer screening tests is among the best approaches to prevent and control this disease (Centers for Disease Control and Prevention, 2023). Effective patient-provider communication and provider trust are a means by which this gap in preventative care can be addressed. Past research on the African American population has found that Black or African American patients are significantly more likely to report mistrust toward medical care and the medical establishment when compared to their White or Caucasian counterparts (Cuevas et al., 2019; Sutton et al., 2018). While several studies have explored the influence of patient-provider communication and provider trust on cancer screening (Agrawal et al., 2021; Greene & Ramos, 2020; Kindratt et al., 2020; Treiman et al., 2018), there is no existing literature that explicitly examines the efficacy of this approach in African Americans in the mid-Atlantic region of the United States. This study seeks to determine whether there is a relationship between patient-provider communication and provider trust for cancer-related information among African Americans residing in the mid-Atlantic region of the United States.

Definitions

Cancer screening: Public health interventions that allow for the detection of precancerous conditions or early stages of disease in asymptomatic subjects in order to offer timely diagnosis and early treatments that can lead to better results (Lemmo et al., 2022).

Mid-Atlantic: A region in the Northeastern United States in the overlap between the Northeastern and Southeastern states of the United States. According to the U.S. Bureau of Labor Statistics, the mid-Atlantic region is comprised of Delaware, the District of Columbia, Maryland, New Jersey, Pennsylvania, Virginia, and West Virginia (U.S. Bureau of Labor Statistics, n.d.).

Patient-provider communication: The shared and mutually understood exchange of information between the patient and provider (Patient-Provider Communication Network, 2024).

Provider trust: The belief that a care provider is working in the patient's best interests (Tegenu Lemma et al., 2023), and a collection of expectations that the patients have from their provider (Rasiah et al., 2020).

Assumptions

Within this study, the researcher made two assumptions. The first was that the data publicly reported on the HINTS website and in the database was transcribed accurately and without errors. This assumption was necessary because the HINTS was the primary source of information for the study, and there was no other source for retrieving the data required for this study. Another assumption was that each patient

answered the questions honestly without any fear of retaliation from their providers.

Scope and Delimitations

Scope: The purpose of this study was to examine the relationship between patient-provider communication and provider trust for cancer-related information among African Americans residing in the mid-Atlantic region of the United States. Using the HINTS 6 dataset for 2022, the researcher tested for patient-provider communication and provider trust from March through November 2022.

Delimitations: While the purpose of this study was to further examine patient-provider communication and provider trust, the researcher chose to exclude all races, other than African Americans, to narrow the study's focus by generalizing the study to that specific race. The study is only generalizable to the mid-Atlantic States. Thus, it may not be generalizable to other parts of the United States.

Limitations

Since the data is unrestricted and freely accessible to the public, there are no limitations or challenges to accessing the data. A limitation of the study was that the providers are not separated into specific categories, so one patient may be referencing a doctor, another may be referencing a nurse, and another about an advanced practice provider, etc. Also, the data only includes African Americans, and since the study was about an African American population in the mid-Atlantic region, it is not generalizable to other areas of the United States or to other patient populations.

Significance

This study is significant in that it will add to the growing body of knowledge on

the relationship between patient-provider communication and provider trust for cancer-related information in African Americans in the mid-Atlantic region of the United States. Also, through this study, there was an intention to add to the growing body of existing knowledge that will, in turn, help to improve overall health outcomes by catching cancer earlier, which would contribute to positive social change.

Summary and Conclusions

Patient trust in physicians and communication quality have been identified as factors that influence patient adherence (Wu et al., 2022). Existing literature suggests that both patient-provider communication and provider trust are known to be effective means of influencing cancer screening and adherence in the African American community (Agrawal et al., 2021; Cuevas et al., (2019); Hawkins & Mitchell, 2018; Hung & Oh, 2020; Sutton et al., 2018). Ideal patient-provider communication was found to be significantly associated with active participation in care (Hawkins & Mitchell, 2018) and screening adherence (Agrawal et al., 2021).

However, it is unknown how patient-provider communication and provider trust for cancer-related information affects adherence among African Americans residing in the mid-Atlantic region of the United States. This study, again, sought to determine whether there is a relationship between patient-provider communication and provider trust for cancer-related information among African Americans residing in the mid-Atlantic region of the United States. Based on the presented research questions, a conceptual framework, Donabedian's conceptual model, was used to draw on existing research on patient-provider communication and provider trust. By integrating the

framework, the following research study further examined the relationship between patient-provider communication and provider trust for cancer-related information among African Americans residing in the mid-Atlantic region of the United States. It will fill the gap and extend the knowledge concerning patient-provider communication and provider trust for cancer-related information.

The research study design and data collection section in Section 2 will include four segments. The first is the Research Design and Rationale, which will state the study variables, identify the research design and its connection to the research questions, explain any time and resource constraints with the design choice, and describe how the design choice is consistent with the research designs needed to advance knowledge within the discipline. The next segment is the Methodology, which will define the target population, detail the sampling and sampling procedures used to collect data as described in secondary data materials as well as the instrumentation and operationalization of constructs. Next is the Threats to Validity segment, which describes the threats to external and internal validity and how they were addressed, if there was any construct or statistical conclusion validity, and finally, the ethical procedures used to gain access to the secondary data set, the anonymity and security of data, and any other ethical issues, as applicable. The research study design and data collection section will then conclude with the Summary, which reviews the design and methodology of the quantitative study.

Section 2: Research Design and Data Collection

This quantitative, quasi-experimental, retrospective study was conducted to examine the relationship between patient-provider communication and provider trust for cancer screening. After extensive academic research, little published data was found on the associations between patient-provider communication and provider trust for cancer-related information. There also was little to no research specifically focused on patient-provider communication and provider trust for cancer-related information among African Americans residing in the mid-Atlantic region of the United States. Patient-provider communication is the shared and mutually understood exchange of information between the patient and provider (Patient-Provider Communication Network, 2023). Provider trust is the belief that a care provider is working in the patient's best interests (Tegenu Lemma et al., 2023) and a collection of expectations that the patients have from their provider (Rasiah et al., 2020). Data came from the HINTS 6 2022. Data were collected between March 7, 2022 and November 8, 2022. Within the database, secondary data were accessed for patient-provider communication and provider trust. The following research study design and data collection section will discuss the research design and rationale, methodology, and threats to the validity of this study.

Research Design and Rationale

This quantitative, quasi-experimental, retrospective study used secondary data from the HINTS (https://hints.cancer.gov/). Within the database, the existing secondary data were accessed for patient-provider communication and provider trust. The HINTS study provided the data points for resources, both the independent variable of patient-

provider communication and the dependent variable of provider trust. The data points were provided through the analysis of survey responses reported to the National Cancer Institute (NCI), which are available to the public.

Data were analyzed using an ordinal multiple regression analysis in SPSS. An ordinal multiple regression analysis is used when there are multiple independent variables and one dependent variable. The design of the research question analyzed the correlation between patient-provider communication and provider trust from participant responses from the HINTS 6 2022 study database. I tested the correlation of each participant's response for the independent and dependent variables using regression analysis. A statistically significant result was a p value of less than 0.05 ($p < .05$), and the independent variable of patient-provider communication predicting the dependent variable of provider trust.

This study had one independent variable consisting of five questions that make up patient-provider communication and one dependent variable of provider trust. The five independent variable questions used to measure patient-provider communication were measured on a 4-point bi-polar Likert scale ranging from 1 (*always*) to 4 (*never*). The dependent variable of provider trust was measured on a 4-point bipolar Likert scale from 1 (*a lot*) to 4 (*not at all*). Likert scales are ordinal scales used to measure data, especially in social science research (Hutchinson & Chyung, 2023). Each survey respondent's overall average score was calculated by adding each response for each section using the Likert scale and then dividing that calculation by five, which is the total number of questions for patient-provider communication. The dependent variable of provider trust

was measured on a four-point Likert scale, using the same process of calculation as the independent variable. By adding each respondent's overall score and then dividing that calculation by the total number of responses, the average score for each respondent was established. Using the information from both calculations, an ordinal multiple regression analysis was performed to identify the relationship between patient-provider communication and provider trust for cancer screening using the average scores of each respondent from the five patient-provider communication domain questions and single provider trust survey question.

Donabedian's conceptual model consists of three different elements: structure, process, and outcome, all of which contribute to the quality of patient care and are essential for establishing the relationship between the study's independent and dependent variables. For the purpose of this study, the structure consisted of the provider's office, the process consisted of patient-provider communication, and the outcome consisted of provider trust.

Methodology

Population

The target population within my study was all African American adults residing within the mid-Atlantic region of the United States. The population size was 113 respondents across the mid-Atlantic region of the United States within the calendar year 2022.

Sampling and Sampling Procedures Used

The HINTS is a nationally representative survey that has been administered by the

NCI since 2003. The survey's target population is civilian, non-institutionalized adults aged 18 or older living in the United States. The most recent HINTS administration, HINTS 6, was conducted from March 7 – November 8, 2022, with a goal of obtaining 7,000 completed questionnaires (HINTS, 2024). The data became publicly available in April 2023. NCI's HINTS traditionally focused on surveying participants on health communication, the use of digital technology, and cancer risk awareness. For HINTS 6, data also focused on topics including genetic testing, issues with health information, social issues, social media and misinformation, and telehealth.

The data collection for HINTS 6 was performed via two methods, with an option for the surveys to be completed online or by paper via mail. Respondents were randomly assigned to be offered to complete the survey concurrently online and by paper, or online or by paper first, then the other method later (sequentially). Sampling was conducted in two stages. In the first stage, a sample of on-file residential addresses was selected using a database of addresses used by Marketing Systems Group (MSG). In the second stage, one adult was selected within each sampled household. Different from previous HINTS sample designs, HINTS 6 expanded the sampling strata of high minority and low minority into four groups to separate the groups by rural and urban geographic areas with the goal of increasing the number of rural cases in the total sample. After an unexpectedly low response rate to the mailed paper version of the survey, a fourth mailing was offered to a subsample of non-respondents from September 27 through November 8, 2022. Overall, the total sample for the HINTS 6 dataset was 6,252 respondents. The overall response rate was 28.1%, and historically, most HINTS study response rates are at, or

below, 35%.

The NCI's HINTS is the only nationally representative, federally funded survey that includes items related to health and cancer communication, information technology, and the information environment, in addition to items related to health-related knowledge, attitudes, and behaviors (HINTS, n.d.). HINTS is a service of the NCI with support from the Health Communication and Informatics Research Branch or the Division of Cancer Control and Population Sciences (HINTS, n.d.). Some HINTS surveys have restricted-use datasets that have geocodes and suppressed variables or restricted-use only dataset files that require a special request for use. The HINTS 6 2022 dataset that was used for the purpose of this study is free for public use on the HINTS website. Therefore, there were no necessary permissions to gain access to the data. The HINTS 6 2022 data pertaining to patient-provider communication and provider trust was retrieved from the NCI's publicly reported HINTS website. The file utilized for this study was "hints6_public.sav" and contained all HINTS 6 questions and responses for the survey respondents. For this study, the data were filtered down to African Americans in the mid-Atlantic region of the United States and linear mean scores of patient-provider communication and provider trust.

To determine the sample size for this study, I performed a power analysis using G*Power version 3.1.9.7. I entered a medium effect size of 0.15, an alpha error of probability of 0.05, a power of 0.8, and a standard deviation of 1.0. Based on the calculations, the necessary sample size for statistical significance was 55. To increase accuracy, I used the full population of the mid-Atlantic region sample (dataset $N = 694$).

Instrumentation and Operationalization of Constructs

Operationalization of the Survey Instruments

The study information was gathered using the HINTS questionnaire. The NCI first developed HINTS in 2002-2003 to track the evolution of health information and communication through technology. The data collected is nationally representative of the public's views, knowledge of, and attitudes toward and use of health (and specifically) cancer-related information and has been administered six times over a 20-year period. Three studies (HINTS 4, 5, and 6) have included multiple annual cross-sectional data collection cycles (Finney Rutten et al., 2020). By using HINTS-related data, researchers, program planners, behavioral and social scientists, federal agencies, advocacy organizations, and others have found ways to understand how adults (aged 18 years and older) use different communication techniques to transmit and translate health information and develop better ways to recommend communication changes that will assist in reducing the cancer burden in the population. My research relied on data from all states in the mid-Atlantic region of the United States but may not be transferable to other states in regions across the United States due to demographic and healthcare system differences.

As previously mentioned, each HINTS uses a core set of items, including cancer prevention and screening, health information seeking, cancer-related knowledge and behavior, cancer risk perception, healthcare use and access, and technology utilization and access (Finney Rutten et al., 2020). HINTS 6 specifically also included issues with health information (i.e., misinformation, conflicting information, health literacy), social

issues (i.e., health care discrimination experiences, social determinants of health, social isolation), telehealth (i.e., use and satisfaction with), and genetic testing (i.e., knowledge, interpretation of sharing of results, behavior changes). Various sociodemographic characteristics were measured and analyzed to differentiate between the sample results. Estimates were weighted to correct for non-response bias and also to be representative of the US population in regard to age, sex, race, and ethnicity (Finney Rutten et al., 2020).

HINTS is a postal survey based on a stratified probability-based sample of the US adult, civilian, non-institutional population (HINTS, n.d.). The first stage randomly selects addresses from the US Postal Services. The second stage selects an adult within the household using the next birthday method (HINTS, n.d.). An analysis conducted on earlier rounds of HINTS found that one of the reasons for non-response is related to access to health care and to health status. Those who have less access to health care services and who have fewer health problems were less likely to respond to the survey. To compensate for these patterns, insurance status and cancer status are used as additional calibrations (HINTS, n.d.).

A panel of experts from Westat establishes the HINTS study's validity. Before a HINTS cycle, the HINTS Management Team deems or identifies "champions," which are persons having content expertise in each construct of interest in the study (HINTS, n.d.). Each champion submits their proposed content to Westat, the contracted organization that assists the National Cancer Institute in developing the study's questionnaires (HINTS, n.d.).

Operationalization of the Variables

Patient-Provider Communication. The independent variable, measured by five questions on the HINTS survey. Each survey respondent's overall average score was calculated by adding each response for each question using the 4-point Likert scale (1 = *Always*, 2 = *Usually*, 3 = *Sometimes*, 4 = Never), then dividing that calculation by "5" (the total number of patient-provider communication questions) to obtain the average score for each survey respondent. Questions used to measure this variable include:

- How often did doctors, nurses, or other health professionals that were seen during the past 12 months explain things in a way you could understand?
- How often did doctors, nurses, or other health professionals that were seen during the past 12 months spend enough time with you?
- How often did doctors, nurses, or other health professionals that were seen during the past 12 months involve you in decisions about your health care as much as you wanted?
- How often did doctors, nurses, or other health professionals give you the chance to ask all the health-related questions you had?
- How often did doctors, nurses, or other health professionals that were seen during the past 12 months make sure you understood the things you needed to do to take care of your health? (NCI, n.d.).

As an example of scoring, suppose a survey respondent's answers to the five patient-provider questions are as follows: "How often did doctors, nurses, or other health professionals that were seen during the past 12 months explain things in a way you could

understand?" as a score of "2 = *Usually*", "How often did doctors, nurses, or other health professionals that were seen during the past 12 months spend enough time with you?" as a score of "1 = *Always*", "How often did doctors, nurses, or other health professionals that were seen during the past 12 months involve you in decisions about your health care as much as you wanted?" as a score of "1 = *Always*", "How often did doctors, nurses, or other health professionals give you the chance to ask all the health-related questions you had?" as a score of "3 = *Sometimes*", and "How often did doctors, nurses, or other health professionals that were seen during the past 12 months make sure you understood the things you needed to do to take care of your health?" as a score of "1 = Always." The resulting total score would be "8" (2 + 1 + 1 + 3 + 1), and then dividing by "5" (the total number of patient-provider communication questions) would equal the average score of 1.6.

Provider Trust. The dependent variable, measured by one question on the HINTS survey. Each survey respondent's response for each question was tallied using the 4-point Likert scale (1 = *A lot*, 2 = *Some*, 3 = *A little*, 4 = *Not at all*). No average score for each survey respondent was necessary since there was only one question for the variable. The question used to measure the variable was "In general, how much would you trust information about cancer from a doctor or other healthcare professional?"

National Cancer Institute (NCI). Part of the National Institutes of Health (NIH); the federal government's principal agency for cancer research and training (National Cancer Institute [NCI], 2018).

Health Information National Trends Study. A survey issued by the National

Cancer Institute that collects nationally representative data on changes in health communication and health technology, and the American public's use of cancer-related information (NCI, n.d.).

Linear mean scores. The total score of patient response is based upon weighted patient responses. An answer of "Always" equals 1, "Usually" equals 2, "Sometimes" equals 3, "Never" equals 4. Each survey totals a cumulative score.

Mid-Atlantic. A region in the Northeastern United States in the overlap between the Northeastern and Southeastern states of the United States. According to the U.S. Bureau of Labor Statistics, the mid-Atlantic region is comprised of Delaware, the District of Columbia, Maryland, New Jersey, Pennsylvania, Virginia, and West Virginia (U.S. Bureau of Labor Statistics, n.d.)

Data Analysis Plan

The statistical tool used for this study was the IBM SPSS V.29.0.2.0 data analysis software, which was released in September 2022, and provided by Walden University as the recommended version in March 2024. This software was used to perform the regression analysis.

The HINTS 6 (2022) dataset was downloaded as a ZIP file containing the SPSS data and supporting documents (HINTS6_SPSS_20230501). Once downloaded, the "hints6_public.sav file" was opened in SPSS. The dataset was then transferred to the SPSS program. Only data pertaining to African Americans was used. No other races were examined. Also, only the mid-Atlantic region, including the states of Delaware, the District of Columbia, Maryland, New Jersey, New York, Pennsylvania, Virginia, and

West Virginia, were examined. All other regions of the United States were eliminated. Also, missing data entries were eliminated.

Research Question and Hypothesis. This study was guided by one research question and its corresponding hypothesis. The independent variable was the average score of the five HINTS 6 questions that are related to patient-provider communication for each survey respondent. The dependent variable was provider trust, as measured by the HINTS score of 1 - 4 on the corresponding survey question.

Research Question (RQ) 1:

What is the relationship between patient-provider communication and provider trust for cancer-related information among African Americans residing in the mid-Atlantic region of the United States?

Null Hypothesis (H_0):

There is no statistically significant relationship between patient-provider communication and provider trust for cancer-related information among African Americans residing in the mid-Atlantic region of the United States.

Alternative Hypothesis (H_1):

There is a statistically significant relationship between patient-provider communication and provider trust for cancer-related information among African Americans residing in the mid-Atlantic region of the United States.

This quantitative, quasi-experimental, retrospective study examined the relationship between patient-provider communication and provider trust for cancer-related information among African Americans residing in the mid-Atlantic region of the

United States. The independent variable within my study was related to five HINTS 6 questions for patient-provider communication, which were:

- How often did doctors, nurses, or other health professionals that were seen during the past 12 months explain things in a way you could understand?
- How often did doctors, nurses, or other health professionals that were seen during the past 12 months spend enough time with you?
- How often did doctors, nurses, or other health professionals that were seen during the past 12 months involve you in decisions about your health care as much as you wanted?
- How often did doctors, nurses, or other health professionals give you the chance to ask all the health-related questions you had?"
- How often did doctors, nurses, or other health professionals that were seen during the past 12 months make sure you understood the things you needed to do to take care of your health?"

Each survey respondent's overall average score was calculated by adding each response for each question, using a 4-point Likert scale (1 = *Always*, 2 = *Usually*, 3 = *Sometimes*, 4 = *Never*), then dividing the calculation by 5 (the total number of patient-provider communication questions).

The dependent variable within my study was provider trust, which was measured by using each survey respondent's score for the one HINTS 6 survey question pertaining to provider trust, which was "In general, how much would you trust information about cancer from a doctor or other healthcare professional?" The question did not specify or

measure the provider's credentials. The rating of each survey respondent's score for provider trust is on an ordinal scale, so regression analysis was used to identify the relationship between patient-provider communication and provider trust for cancer-related information using the average score for each survey respondent of the five patient-provider communication domain questions and the provider trust respondent-rated 1 to 4 question (RQ 1).

Threats to Validity

Internal and external validity are essential aspects to consider when conducting a research study. Internal validity determines if the study design, conduct, and analysis answer the research question without bias. External validity helps to determine if the study's findings can be generalized to the greater population (Andrade, 2018). When conducting a research study, two types of threats exist that can jeopardize the research design: internal and external threats to validity. Internal threats to validity can alter the integrity of the experimental design. Examples include history, instrumentation, selection, testing, and maturation (Dunbar-Jacob, 2018). External threats to validity can affect how the results can be applied to the population, and examples include selection or sampling bias, history, Hawthorne effect (changing a behavior because knowing of being studied), or multiple treatments (Matthay & Glymour, 2020).

The data used in my study came from one region of the United States and may not be generalizable to other regions of the United States or the general population due to practice differences, demographics, and variations in healthcare throughout the United States, thus posing a threat to the external validity of this study. Another threat

considered was the respondents' knowledge of being studied, thus there being a possibility of answering the study questions in a manner not intended because of fear of retaliation or mistreatment by their provider.

Ethical Procedures

Publicly available secondary data were used to explore the relationship between patient-provider communication and provider trust for cancer-related information among African Americans residing in the mid-Atlantic region of the United States. The data set was a secondary data set from the 2022 HINTS 6 study, which is publicly available online. To maintain the validity of the statistics, I only will ever use the data that HINTS officially released through the National Cancer Institute data collection tool.

Before the study began, I contacted Walden University's Institutional Review Board to acquire IRB permission to confirm that its methodology was in accordance with Walden University's ethical standards. The IRB approval number for this study is 07-03-24-1107107.

Summary

This quantitative, quasi-experimental, retrospective study examined the relationship between patient-provider communication and provider trust. I examined how patient-provider communication affects provider trust. The HINTS 6 survey's global metric of 1 - 4 was used to define provider trust, with 4 being the lowest score and 1 being the highest. Regression analysis can be used to examine the relationship between one dependent variable and one or more independent variables (Frankfort-Nachmias et al., 2020). Regression analysis was used in this study to examine the significance of the

relationship between patient-provider communication and provider trust for cancer-related information among African Americans residing in the mid-Atlantic region of the United States.

The presentation of the results and findings section in Section 3 will include three segments. First is the Data Collection of the Secondary Data Set, which will describe the time frame for data collection and response rates of the secondary data set, present any discrepancies in the use of the secondary data set, report baseline descriptive and demographic characteristics of the sample, and provide results of the basic univariate analyses. The next section, the Results section, will report the descriptive statistics that characterize the sample, evaluate statistical assumptions as appropriate to the study, report the statistical analysis findings, report post-hoc analyses and any additional statistical tests of hypotheses, and include tables and figures to illustrate the results. Then, finally, a summary will be given, which explains the answers to the research question.

Section 3: Presentation of the Results and Findings

This quantitative, quasi-experimental, retrospective study aimed to examine if there is a statistically significant relationship between the independent variable, patient-provider communication, and provider trust, the dependent variable, for cancer-related information. Particularly, this study was conducted to determine how patient-provider communication and provider trust for cancer-related information affects adherence among African Americans residing in the mid-Atlantic region of the United States. While researchers have investigated this issue, there is little literature related to the role of patient-provider communication and provider trust in cancer-related information among African Americans residing in the mid-Atlantic region of the United States. Furthermore, it is unknown how patient-provider communication and provider trust for cancer-related information affects adherence among African Americans residing in the mid-Atlantic region of the United States. This study was guided by one research question and its corresponding hypothesis: What is the relationship between patient-provider communication and provider trust for cancer-related information among African Americans residing in the mid-Atlantic region of the United States?

This section will describe the study's findings. The secondary dataset and its sources, how the data in the dataset was collected, the frequency of the variables that were used, and how the secondary dataset was compiled, as well as the statistical analyses that were conducted to answer the research question, will also be presented. To illustrate and explain the findings, tables and figures will be provided. Finally, a summary of the results from the regression analysis will be given.

Data Collection of the Secondary Data Set

Secondary data were retrieved and analyzed after obtaining permission from Walden University's IRB to conduct the study. Secondary data were obtained from the publicly reported NCI HINTS website. Since the data are publicly available, no permission was required to access the data needed for this research. The study included data specific to health and cancer communication, information technology, and the information environment, in addition to items related to health-related knowledge, attitudes, and behaviors. For the purpose of this study, the HINTS 6 dataset was used to assess the deidentified respondent data pertaining to health and cancer information for the 2022 calendar year, from the months of March through November 2022. Specifically, the data used from the HINTS survey assessed communication with doctors, nurses, or other healthcare professionals and trust in information about cancer from a doctor or other healthcare professional. Data were filtered only to include African American respondents residing in the mid-Atlantic region of the United States.

The independent variable within my study was related to five HINTS 6 questions for patient-provider communication, which were:

- How often did doctors, nurses, or other health professionals that were seen during the past 12 months explain things in a way you could understand?
- How often did doctors, nurses, or other health professionals that were seen during the past 12 months spend enough time with you?
- How often did doctors, nurses, or other health professionals that were seen during the past 12 months involve you in decisions about your health care as

much as you wanted?

- How often did doctors, nurses, or other health professionals give you the chance to ask all the health-related questions you had?
- How often did doctors, nurses, or other health professionals that were seen during the past 12 months make sure you understood the things you needed to do to take care of your health?

Each survey respondent's overall average score was calculated by adding each response for each question, using a 4-point Likert scale (1 = *Always*, 2 = *Usually*, 3 = *Sometimes*, 4 = *Never*), then dividing the calculation by 5 (the total number of patient-provider communication questions).

The dependent variable within my study was provider trust, which was measured by using each survey respondent's score for the one HINTS 6 survey question pertaining to provider trust, which was "In general, how much would you trust information about cancer from a doctor or other healthcare professional?" The question did not specify or measure the provider's credentials. The rating of each survey respondent's score for provider trust is on an ordinal scale, so regression analysis was used to identify the relationship between patient-provider communication and provider trust for cancer-related information using the average score for each survey respondent of the five patient-provider communication domain questions and the provider trust respondent-rated 1 to 4 question (RQ 1).

Baseline Demographic Characteristics of the Sample Population

All participants were males or females 18 years and older (to a maximum age of

over 75), were classified as non-Hispanic Black or African American, and residing in the Middle Atlantic (mid-Atlantic) region of the United States. Table 1 includes the descriptive demographics of the returned survey population of African American respondents regarding patient race, gender, age, and residency.

Table 1

Descriptive Demographics of the Survey Population of African American Respondents

Patient Race	**Black or African American**	**N**	**Percent**
Valid	Selected	113	100.0
Patient Gender		N	Percent
Valid	Male	36	31.9
	Female	77	68.1
	Total	113	100.0
Patient Age Group		N	Percent
Valid	18-34	12	10.6
	35-49	18	15.9
	50-64	33	29.2
	65-74	37	32.7
	75+	13	11.5
	Total	113	100.0
Patient Census Division		N	Percent
Valid	Middle Atlantic	113	100.0

After scrubbing the data in the HINTS 6 dataset for impertinent variables, negative values, missing values, and outliers, a total of 113 African American respondents residing in the mid-Atlantic region of the United States were identified who returned their HINTS 6 survey to the National Cancer Institute for the calendar year 2022. The largest age group of survey respondents were 65 to 74 years old, totaling 37 (32.7%) survey respondents. The smallest age group of survey respondents were 18 to 34 years old, totaling 12 (10.6%) survey respondents.

External Validity

This research study relied on data that came from one region of the United States and may not be generalizable to other regions of the United States or the general population due to practice differences, demographics, and variations in healthcare throughout the United States, posing a threat to the external validity of this study. Another threat considered was the respondents' knowledge of being studied, as there is a possibility of answering the study questions in a manner not intended because of fear of retaliation or mistreatment by their provider.

Results

This study was guided by one research question and its corresponding hypothesis. The independent variable is the average score of five HINTS 6 questions for patient-provider communication. The dependent variable is provider trust, which was measured using each survey respondent's score for the one HINTS 6 survey question about provider trust.

RQ 1

An ordinal logistic regression analysis was conducted to identify the relationship between patient-provider communication and provider trust for cancer-related information (see Tables 6 - 8). The independent variable for RQ 1 is the average score for each survey respondent of the five patient-provider communication domain questions:

- How often did doctors, nurses, or other health professionals that were seen during the past 12 months explain things in a way you could understand?
- How often did doctors, nurses, or other health professionals that were seen

during the past 12 months spend enough time with you?

- How often did doctors, nurses, or other health professionals that were seen during the past 12 months involve you in decisions about your health care as much as you wanted?
- How often did doctors, nurses, or other health professionals give you the chance to ask all the health-related questions you had?
- How often did doctors, nurses, or other health professionals that were seen during the past 12 months make sure you understood the things you needed to do to take care of your health?

Each of the five independent variable questions is measured using a 4-point Likert scale with 1 = *Always*, 2 = *Usually*, 3 = *Sometimes*, and 4 = *Never*. The dependent variable for RQ 1 is provider trust, measured using the one question pertaining to provider trust: "In general, how much would you trust information about cancer from a doctor or other healthcare professional?" Since the rating of each survey respondent's score for provider trust is on an ordinal scale, regression analysis was used to identify the relationship between patient-provider communication and provider trust for cancer-related information.

RQ 1 Statistical Assumptions

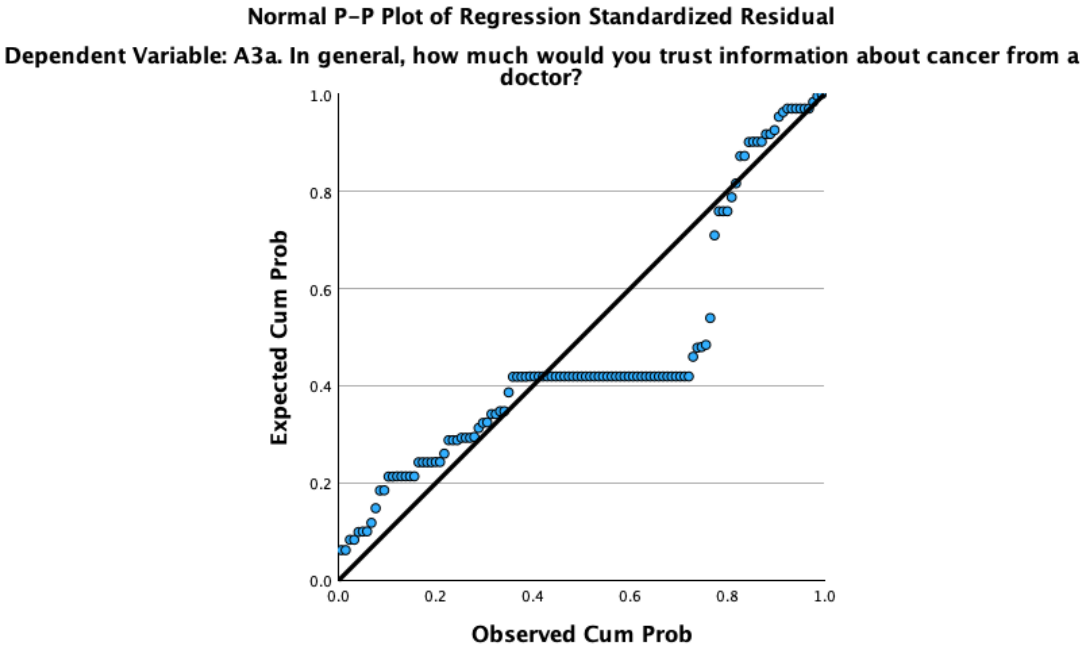
Linear regression analysis relies on various assumptions to create an accurate and reliable model for predicting and drawing insight from data. The assumptions are described in the following sections.

Linearity. The purpose of linearity in a linear regression analysis is to show if

there is a linear relationship between the independent and dependent variables. Usually visualized using a scatterplot, such as a P-P plot, there should be a straight-line relationship between the variables. As seen in Figure 1, the P-P plot of the expected versus observed cumulative probability was used to show if there is a relatively straight-line relationship between the independent and dependent variables. Since the relationship is present, this assumption is met.

Figure 1

P-P Plot of Linearity

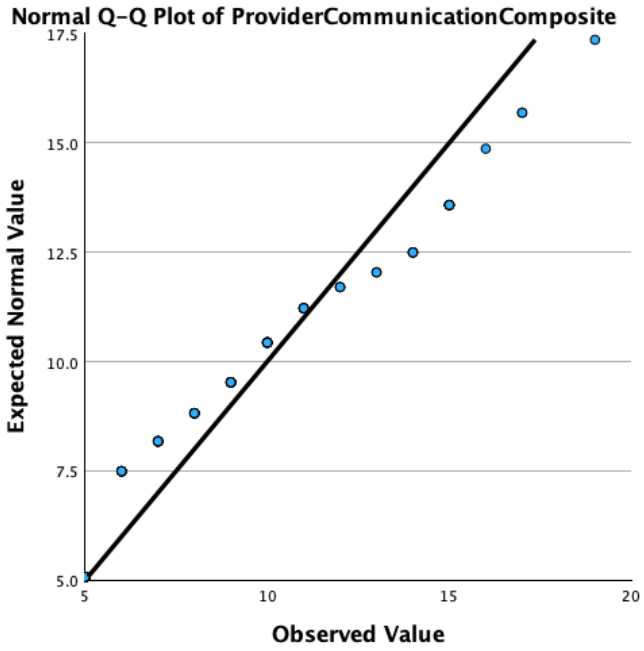


Normality of Residuals. The normality of residuals (the differences between observed and predicted values) means that they are normally distributed symmetrically around zero, with no skewness or kurtosis. This assumption implies that the model captures the data's main patterns and sources of variation and that the errors are random

and independent. This can be determined by a Q-Q plot, which should roughly be in a straight line, by examining a histogram, or through statistical tests such as the Kolmogorov-Smirnov test. As seen in Figure 2, a Q-Q plot was used to show the normality of residuals. The Q-Q plot of the composite independent variable for provider communication (*ProviderCommunicationComposite*), shows a relatively straight line. Since the variable is close to the diagonal line, this assumption was met.

Figure 2

Q-Q Plot of Normality of Residuals

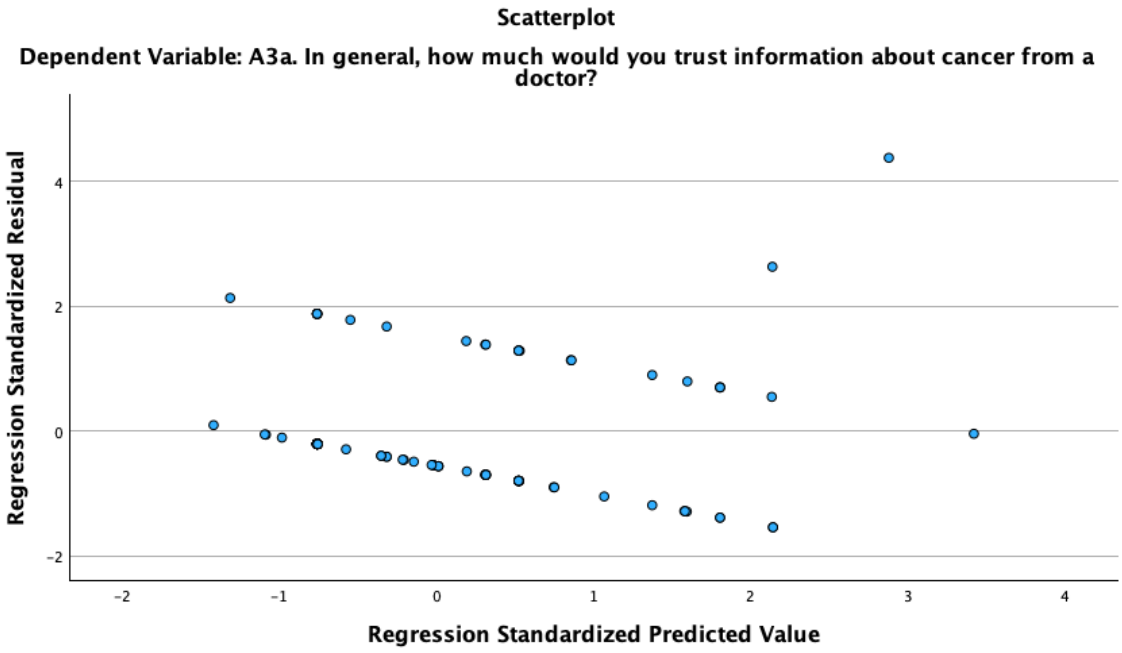


Homoscedasticity. In homoscedasticity, the variance of the residuals should be equal or consistent across all levels of the independent variables. Examining a scatterplot of the residuals (independent variable) against the unstandardized predicted values (dependent variable), if there are a roughly equal number of points above and below the

zero y-axis and to the left and right of mean on the x-axis, the assumption is met. Figure 3 shows the homoscedasticity of this study's independent variables. The assumption was met because there are a roughly equal number of points above and below the zero y-axis and to the left and right of the mean on the x-axis.

Figure 3

Scatterplot of Homoscedasticity



Multicollinearity. Multicollinearity is when two or more of the independent variables are highly correlated with each other. This can either be checked by using correlation matrices, where the correlation matrices should be less than 0.80, or by using the variance inflation factor (VIF), with values above 10 indicating problematic multicollinearity. As depicted in Table 2, the independent variables are not multicollinear. This assumption was met because the VIF score for all the independent

variables was equal to or < 5, showing that each of the independent variables was independent of the other. A VIF equal to or < 5 indicates that multicollinearity does not exist. If the VIF and tolerance are greater than 5 to 10 and lower than 0.1 to 0.2, respectively (R^2 = 0.8 to 0.9), multicollinearity exists (Kim, 2019).

Table 2

Respondents' Assessment of Multicollinearity Assumption Coefficients

Model		95.0% Confidence Interval for B		Collinearity Statistics	
		Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	.585	1.045		
	Chance Ask Questions	-.269	.123	.393	2.542
	Involved Decisions	.021	.450	.286	3.494
	Understood Next Steps	-.294	.194	.200	5.011
	Explained Clearly	-.090	.429	.224	4.474
	Spent Enough Time	-.153	.155	.349	2.864

RQ 1 Descriptive Statistics of Sample

The HINTS 6 (2022) dataset was used to run the multiple regression analysis, which is being run against a 95% confidence level (the gold standard), leaving a 5% (.05) chance of error (Frankfort-Nachmias et al., 2020). This study had one independent variable, which was comprised of five questions. Each question was reviewed to determine which one had the most weight on the outcome, which was the one dependent variable of provider trust. The five independent variable questions that were used to measure patient-provider communication were measured on a 4-point bi-polar Likert scale ranging from 1 (always) to 4 (never). The five independent variables were: *ChanceAskQuestions*, *InvolvedDecisions*, *UnderstoodNextSteps*, *ExplainedClearly*, and

SpentEnoughTime. The dependent variable of provider trust was measured on a 4-point bipolar Likert scale from 1 (a lot) to 4 (not at all). The dependent variable was *CancerTrustDoctor*. Table 3 displays the frequency tables for the responses to the DV survey question related to provider trust and each IV survey question related to patient-provider communication analyzed in this study. There were 113 participants (n = 113), with all valid responses and no missing responses.

Table 3

Frequency of Responses of Respondents

Dependent Variable (DV): In general, how much would you trust information about cancer from a doctor or other healthcare professional?			
Cancer Trust Doctor		Frequency	Percent
Valid	1 - A lot	86	76.1
	2 - Some	25	22.1
	3 - A little	1	.9
	4 - Not at all	1	.9
	Total	113	100.0
Independent Variable (IV) 1: In the past 12 months, how often did your doctors, nurses, or other health professionals give you the chance to ask all the health-related questions you had?			
Chance Ask Questions		Frequency	Percent
Valid	1 - Always	65	57.5
	2 - Usually	32	28.3
	3 - Sometimes	16	14.2
	4 - Never	0	0.0
	Total	113	100.0
Independent Variable (IV) 2: In the past 12 months, how often did your doctors, nurses, or other health professionals involve you in decisions about your health care as much as you wanted?			
Involved Decisions		Frequency	Percent
Valid	1 - Always	62	54.9
	2 - Usually	34	30.1
	3 - Sometimes	15	13.3
	4 - Never	2	1.8
	Total	113	100.0
Independent Variable (IV) 3: In the past 12 months, how often did your doctors, nurses, or other health professionals make sure you understood the things you needed to do to take care of your health?			
Understood Next Steps		Frequency	Percent
Valid	1 - Always	72	63.7
	2 - Usually	23	20.4
	3 - Sometimes	15	13.3
	4 - Never	3	2.7
	Total	113	100.0
Independent Variable (IV) 4: In the past 12 months, how often did your doctors, nurses, or other health professionals explain things in a way you could understand?			
Explained Clearly		Frequency	Percent

Valid	1 – Always	68	60.2
	2 – Usually	31	27.4
	3 – Sometimes	13	11.5
	4 – Never	1	.9
	Total	113	100.0

Independent Variable (IV) 5: In the past 12 months, how often did your doctors, nurses, or other health professionals spend enough time with you?

Spent Enough Time		Frequency	Percent
Valid	1 – Always	50	44.2
	2 – Usually	33	29.2
	3 – Sometimes	20	17.7
	4 – Never	10	8.8
	Total	113	100.0

The descriptive statistics are in Table 4 and the respondents' descriptive statistics: case processing summary is in Table 5. A total sample size of 113 respondents (n = 113) answered the study's question concerning the trust of information from a doctor. The mean response is that, on average, the respondents perceived trust as 1.27 (M = 1.27) trust, with a standard deviation of .518 (SD = .518). A total sample size of 113 respondents (n = 113) answered the study's question concerning a chance to ask providers questions, involvement in health decisions, ensuring an understanding, explaining things understandably, and spending enough time. The respondents perceived the chance to ask questions as 1.57 (M = 1.57), with a standard deviation of .730 (SD = .730), involvement in health decisions as 1.62 (M = 1.62), with a standard deviation of .783 (SD = .783), ensuring an understanding as 1.55 (M = 1.55), with a standard deviation of .824 (SD = .824), explaining things understandably as 1.53 (M = 1.53), with a standard deviation of .733 (SD = .733), and spending enough time as 1.91 (M = 1.91), with a standard deviation of .987 (SD = .987).

Table 4

Descriptive Statistics

	Mean	Std. Deviation	N
Cancer Trust Doctor	1.27	.518	113
Chance Ask Questions	1.57	.730	113
Involved Decisions	1.62	.783	113
Understood Next Steps	1.55	.824	113
Explained Clearly	1.53	.733	113
Spent Enough Time	1.91	.987	113

Table 5

Respondents' Descriptive Statistics: Case Processing Summary

		Cancer Trust Doctor	ProviderCommunicationComposite
Series or Sequence Length		113	113
Number of Missing Values in the Plot	User-Missing	0	0
	System-Missing	0	0

The cases are unweighted.

RQ 1 Statistical Analysis Findings

The independent variable within my study was related to five HINTS 6 questions for patient-provider communication, which were:

- How often did doctors, nurses, or other health professionals that were seen during the past 12 months explain things in a way you could understand?
- How often did doctors, nurses, or other health professionals that were seen during the past 12 months spend enough time with you?
- How often did doctors, nurses, or other health professionals that were seen during the past 12 months involve you in decisions about your health care as

much as you wanted?

- How often did doctors, nurses, or other health professionals give you the chance to ask all the health-related questions you had?
- How often did doctors, nurses, or other health professionals that were seen during the past 12 months make sure you understood the things you needed to do to take care of your health?

Each survey respondent's overall average score was calculated by adding each response for each question, using a 4-point Likert scale (1 = *Always*, 2 = *Usually*, 3 = *Sometimes*, 4 = *Never*), then dividing the calculation by 5 (the total number of patient-provider communication questions).

The dependent variable within my study was provider trust, which was measured by using each survey respondent's score for the one HINTS 6 survey question pertaining to provider trust, which was "In general, how much would you trust information about cancer from a doctor or other healthcare professional?" The question did not specify or measure the provider's credentials. The rating of each survey respondent's score for provider trust is on an ordinal scale, so regression analysis was used to identify the relationship between patient-provider communication and provider trust for cancer-related information using the average score for each survey respondent of the five patient-provider communication domain questions and the provider trust respondent-rated 1 to 4 question (RQ 1).

The ANOVA table (Table 6) notates the multiple regression results and answers the research question based on the resulting significance level. The significance level is *p*

< .001. The results are statistically significant, and the overall combination of the five independent variables (*ChanceAskQuestions*, *InvolvedDecisions*, *UnderstoodNextSteps*, *ExplainedClearly*, and *SpentEnoughTime*) significantly predicts the dependent variable (*CancerTrustDoctor*). The research question is answered, the null hypothesis is rejected, and the alternative hypothesis is retained. Thus, there was a statistically significant effect of *ChanceAskQuestions, InvolvedDecisions, UnderstoodNextSteps, ExplainedClearly,* and *SpentEnoughTime* on provider trust at the $p < .05$ level, $F(5, 107) = 4.737$, $p < .001$.

Table 6

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.443	5	1.089	4.737	<.001[b]
	Residual	24.592	107	.230		
	Total	30.035	112			

a. Dependent Variable: Cancer Trust Doctor
b. Predictors: (Constant), Chance Ask Questions, Involved Decisions, Understood Next Steps, Explained Clearly, and Spent Enough Time

Table 7 shows the multiple regression model summary table. Since the sample's $p < .05$ ($p < .001$), the effect size has interpretive value and can be reported (Walden University Academic Skills Center, 2021). For this analysis, the adjusted $R^2 = .143$, making the effect size weak based on the guidelines for moderate effects ranging from .10 (weak) to .25 (strong) (Walden University Academic Skills Center, 2021). Multiplying this value by 100 gives a percentage value of adjusted $R^2 = 14.3\%$. So, 14.3% of the variance of *CancerTrustDoctor* is predicted by *ChanceAskQuestions,*

InvolvedDecisions, UnderstoodNextSteps, ExplainedClearly, and SpentEnoughTime (Walden University Academic Skills Center, 2021).

Table 7

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.426[a]	.181	.143	.479

a. Predictors: (Constant), Chance Ask Questions, Involved Decisions, Understood Next Steps, Explained Clearly, and Spent Enough Time
b. Dependent Variable: Cancer Trust Doctor

An ordinal regression analysis was conducted to evaluate the prediction of provider trust for cancer-related information from patient-provider communication. Overall, the result of the ordinal regression analysis revealed a statistically significant association between patient-provider communication and provider trust for cancer-related information ($p < .001$). The confidence interval associated with the ordinal regression analysis does not contain 0, which means the null hypothesis, "There is no statistically significant relationship between patient-provider communication and provider trust for cancer-related information among African Americans residing in the mid-Atlantic region of the United States," can be rejected.

As seen in Table 8, the significance of *ChanceAskQuestions* is $p = .460$, which is not statistically significant ($p > .05$). The regression coefficient: $B = -.073$, 95% C.I. [-.269, .123] associated with *ChanceAskQuestions* (a chance to ask questions) suggests that with each additional chance to ask questions response, provider trust decreases by

approximately 7.3%. The R^2 value of -.104 associated with this regression model suggests that the number of chances to ask questions accounts for 10.4% of the variation in provider trust, which means that 90.6% of provider trust cannot be explained by a chance to ask questions alone.

Table 8 shows the significance of *InvolvedDecisions* is $p = .031$ which is statistically significant ($p < .05$). The regression coefficient: $B = .236$, 95% C.I. [.021, .450] associated with *InvolvedDecisions* (involvement in decisions) suggests that with each additional involvement in decisions response, provider trust increases by approximately 23.6%. The R^2 value of .357 associated with this regression model suggests that the number of involvement in decisions accounts for 35.7% of the variation in provider trust, which means that 64.3% of the variation in provider trust cannot be explained by involvement in decisions alone.

Table 8 shows the significance of *UnderstoodNextSteps* is $p = .685$, which is not statistically significant ($p > .05$). The regression coefficient: $B = -.050$, 95% C.I. [-.294, .194] associated with *UnderstoodNextSteps* (understanding the next steps) suggests that with each additional understand next steps response, provider trust decreases by approximately 5.0%. The R^2 value of -.080 associated with this regression model suggests that the number of understanding the next steps accounts for 8.0% of the variation in provider trust, which means that 92.0% of provider trust cannot be explained by understanding the next steps alone.

Table 8 shows that the significance of *ExplainedClearly* is $p = .198$, which is not statistically significant ($p > .05$). The regression coefficient: $B = .169$, 95% C.I. [-.090,

.429] associated with *ExplainedClearly* (explained clearly) suggests that with each additional chance to explain clearly response, provider trust decreases by approximately 9.0%. The R^2 value of .240 associated with this regression model suggests that the number of chances explain clearly accounts for 24% of the variation in provider trust, which means that 76% of the variation in provider trust cannot be explained by a chance to explain clearly alone.

Lastly, Table 8 shows the significance of *SpentEnoughTime* is $p = .992$, which is not statistically significant ($p > .05$). The regression coefficient: $B = .001$, 95% C.I. [-.153, .155] associated with *SpentEnoughTime* (spent enough time) suggests that with each additional spending enough time response, provider trust increases by approximately .01%. The R^2 value of .002 associated with this regression model suggests that the number of spending enough time accounts for .02% of the variation in provider trust, which means that 99.98% of the variation in income cannot be explained by spending enough time.

Table 8

Coefficients Table

	Unstand. Coeffs.		Standard. Coeffs.	t	Sig.	Collinearity Statistics	
Model	B	Std. Error	Beta			Tol.	VIF
(Const)	.815	.116		7.036	<.001		
Chance Ask Questions	-.073	.099	-.104	-.742	.460	.393	2.542
Involved Decisions	.236	.108	.357	2.181	.031	.286	3.494
Understand Next Steps	-.050	.123	-.080	-.407	.685	.200	5.011
Explain Clearly	.169	.131	.240	1.295	.198	.224	4.474
Spent Enough Time	.001	.078	.002	.011	.992	.349	2.864

a. Dependent Variable: Cancer Trust Doctor

Summary

This study examined whether there is a statistically significant relationship between the independent variable, patient-provider communication, and provider trust, the dependent variable, for cancer-related information. Particularly, this study was conducted to determine how patient-provider communication and provider trust for cancer-related information affects adherence among African Americans residing in the mid-Atlantic region of the United States. There is little literature related to the role of patient-provider communication and provider trust in cancer-related information among African Americans residing in the mid-Atlantic region of the United States, and furthermore, it is unknown how patient-provider communication and provider trust for cancer-related information affects adherence among African Americans residing in the mid-Atlantic region of the United States.

This study used one research question to examine the relationship between the independent and dependent variables. An ordinal regression analysis was utilized to demonstrate the relationship between patient-provider communication and provider trust for cancer-related information. Through the analysis of the research question, I concluded that there was a positive and statistically significant relationship between patient-provider communication and provider trust for cancer-related information. The null hypothesis, "There is no statistically significant relationship between patient-provider communication and provider trust for cancer-related information among African Americans residing in the mid-Atlantic region of the United States.", was rejected, and the alternative hypothesis, " There is a statistically significant relationship between patient-provider

communication and provider trust for cancer-related information among African Americans residing in the mid-Atlantic region of the United States.", was accepted.

Section 4 includes the application to professional practice and the implications for social change. First is the introduction, which will re-examine the purpose and nature of the study as well as summarize its key findings. Next, the study's findings will be interpreted with an explanation of how the findings confirm and extend knowledge in the discipline by comparing them with what has been found in the previously discussed peer-reviewed literature, as described in Section 1. The findings will also be analyzed and interpreted in the context of the theoretical framework. Next, the limitations of the study will be further discussed by describing the limitations to generalizability and trustworthiness, validity, and reliability within the secondary dataset. Finally, a description of the recommendations for further research will be presented, with the implications for professional practice and social change.

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

The purpose of this quantitative, quasi-experimental, retrospective study was to examine if there is a statistically significant relationship between the independent variable, patient-provider communication, and provider trust, the dependent variable, for cancer-related information. Particularly, this study was conducted to determine how patient-provider communication and provider trust for cancer-related information affects adherence among African Americans residing in the mid-Atlantic region of the United States. While researchers have investigated this issue, there is little literature related to the role of patient-provider communication and provider trust in cancer-related information among African Americans residing in the mid-Atlantic region of the United States. Furthermore, it is unknown how patient-provider communication and provider trust for cancer-related information affects adherence among African Americans residing in the mid-Atlantic region of the United States.

RQ 1 was designed to examine the relationship between patient-provider communication and provider trust for cancer-related information. An ordinal logistic regression analysis was conducted because this research study had one independent variable comprised of five questions and one dependent variable. The results of the analysis revealed that there is a statistically significant relationship between patient-provider communication and provider trust for cancer-related information. Since the ordinal regression analysis showed a relationship, the null hypothesis was rejected.

Interpretation of the Findings

The NCI first developed HINTS in 2002-2003 to track the evolution of health

information and communication through technology. The data collected are nationally representative of the public's views, knowledge of, and attitudes toward and use of health, specifically cancer-related information, and has been administered six times over a 20-year period. While each HINTS uses a core set of items, HINTS 6 specifically also included issues with health information (i.e., misinformation, conflicting information, health literacy), social issues (i.e., health care discrimination experiences, social determinants of health, social isolation), telehealth (i.e., use and satisfaction with), and genetic testing (i.e., knowledge, interpretation of sharing of results, behavior changes) (Finney Rutten et al., 2020). The results confirmed a statistically significant relationship between patient-provider communication and provider trust for cancer-related information for African Americans residing in the mid-Atlantic region of the United States, leading to a rejection of the null hypothesis for the research question: What is the relationship between patient-provider communication and provider trust for cancer-related information among African Americans residing in the mid-Atlantic region of the United States?

Relationship to Peer-Reviewed Literature

There has been a limited number of peer-reviewed studies on the relationship between patient-provider communication and provider trust for cancer-related information, particularly for African Americans residing in the mid-Atlantic region of the United States. This study, however, corroborated with various peer-reviewed articles discussing patient-provider communication and provider trust. Because of its importance to quality healthcare, effective communication between the patient and provider is

included as a healthcare quality metric (CMS, 2020) since it aids in promoting positive patient satisfaction and care experience, and patients' perception of their care (Jiang, 2019; Trant et al., 2019). According to Trant et al. (2019), cancer patients are particularly positively or negatively affected by provider communication because of the complexity of the diagnosis and treatment of the disease. The researchers surveyed participants and assessed their responses to a communication assessment, health survey, hospital satisfaction questionnaire, and demographic form. They found that patient satisfaction with their provider depended primarily on the provider's communication style. Similarly, Triemen et al.'s (2018) study of newly diagnosed colorectal cancer patients' quality of life in relation to satisfaction with care highlighted the value of quality communication and a team-based approach between the patient and provider to cancer care.

This is even more important when assessing patient-provider interaction and communication in the African American community, which historically has had negative perceptions of and dissatisfaction with healthcare. In their secondary analysis of a previous study, Hawkins and Mitchell (2018) found that depending on certain sociodemographic characteristics, African American men were more likely to report poor patient-provider communication when compared to other study groups. The same was true in Anderson et al.'s (2021) study, which showed differences in communication needs between Black and White female breast cancer survivors, as well as in Kindratt et al.'s (2020) study, which indicated positive associations between adults' perceptions of patient-provider communication quality and likelihood of timely cancer screenings when provider practices were health-literate and conscientiously communitive with their

patients. This study isolated all African American participants residing in the mid-Atlantic region of the United States and their responses to the HINTS study's questions pertaining to patient-provider communication.

Along with patient-provider communication, provider trust is considered an essential aspect of the patient-provider relationship and is also associated with better healthcare utilization (Green & Ramos, 2020; Trant et al., 2019). Medical and provider mistrust has been linked to the underuse of health services, an overall dissatisfaction with and avoidance of healthcare, and non-adherence to recommended treatment (Cuevas et al., 2019), which can negatively affect the patient-provider relationship. These negative experiences have negatively impacted patient care but to a greater extent in the African American community. Though limited to its cross-sectional sampling methods and participant's self-reported responses, Adams and Craddock (2020) examined the effects of patient-provider communication on young African American women's medical mistrust. They found that poor patient-provider communication negatively impacted medical and provider trust. Cuevas et al. (2019) also sought to determine the effects of patient-provider communication on medical mistrust (provider trust) through a multiple linear regression analysis of the level of trust and patient-provider communication in the general healthcare system in primary care patients. The study demonstrated how effective patient-provider communication can increase the impact of provider trust, but the study did not include some important features of patient-provider communication or other contributing factors such as age or socioeconomic status, and it did not utilize a larger sample size, which the researchers acknowledged in the literature.

Provider trust can also impact cancer screening, which, along with other early detection modalities, can reduce the likelihood of later-stage disease and reduce mortality rates and recurrence. Medical and provider mistrust negatively contributes to rates of cancer screenings. According to Agrawal et al. (2021), who researched adherence to NCCN breast cancer screening recommendations in church-going African American women, ideal patient-provider communication, as well as having health insurance, was found to be significantly associated with screening adherence. While the study was limited to a specific community of African American women and could not be generalized to the general population, it did expand on the positive impact of patient-provider communication and provider trust on cancer screening adherence. The current research study supports this finding as well.

Relationship to Theoretical/Conceptual Framework

The theory grounding this study was Donabedian's conceptual model, which assesses and evaluates healthcare services and quality of care. The framework has three elements: structure, process, and outcome. Within this study, the structure referred to the evaluation of the healthcare delivery of hospitals, clinics, and/or doctors' offices within the overall healthcare system. The process referred to patient-provider communication, which was evaluated through the analysis of five questions:

- How often did doctors, nurses, or other health professionals that were seen during the past 12 months explain things in a way you could understand?"
- How often did doctors, nurses, or other health professionals that were seen during the past 12 months spend enough time with you?

- How often did doctors, nurses, or other health professionals that were seen during the past 12 months involve you in decisions about your health care as much as you wanted?
- How often did doctors, nurses, or other health professionals give you the chance to ask all the health-related questions you had?
- How often did doctors, nurses, or other health professionals that were seen during the past 12 months make sure you understood the things you needed to do to take care of your health?"

Each question was measured on a Likert scale, where 1 = *Always*, 2 = *Usually*, 3 = *Sometimes*, 4 = Never. The outcome involved provider trust, which was evaluated by the analysis of one question: "In general, how much would you trust information about cancer from a doctor or other healthcare professional?". The one question was measured on a Likert scale, where 1 = *A lot*, 2 = *Some*, 3 = *A little*, 4 = *Not at all*. Each component of Donabedian's conceptual model was significant to this research study by further demonstrating the effect of structure measures on process measures, which, in turn, affect outcome measures. This study found that delivering healthcare information through effective patient-provider communication improves provider trust.

Limitations of the Study

This study's focus was generalized to African Americans residing in the mid-Atlantic United States. By choosing to examine patient-provider communication and provider trust in this specific race while excluding all other races and only examining those in the mid-Atlantic States, the study's scope was limited and only generalizable to

this group and not to other regions of the United States or to other patient populations. The secondary data used within this study was unrestricted and freely accessible to the public, so there were no limitations or challenges to accessing the data. While the aspect of access was non-limiting, how the responses were classified according to provider type was not specified. For example, one patient's response could reference a doctor, while another could reference an advanced practice provider, nurse, etc.

Since the data were unrestricted and freely accessible to the public, there were no limitations or challenges to accessing the data. A limitation of the study was that the providers are not separated into specific categories, so one patient may be referencing a doctor, another may be referencing a nurse, and another about an advanced practice provider, etc. Also, the data only included African Americans, and since the study was about an African American population in the mid-Atlantic region, it was not generalizable to other areas of the United States or to other patient populations.

The data used in my study came from one region of the United States and may not be generalizable to other regions of the United States or the general population due to practice differences, demographics, and variations in healthcare throughout the United States, thus posing a threat to the external validity of this study. Another threat considered was the respondents' knowledge of being studied, thus there being a possibility of answering the study questions in a manner not intended because of fear of retaliation or mistreatment by their provider.

The power analysis for this study found that the sample size required for statistical significance was 55. Using the full HINTS sample population, the total number

of survey respondents was 113, which is higher than the power analysis sample size, making this study's statistical significance appropriate for the analysis.

Recommendations for Future Research

The quality of healthcare continues to be an integral aspect of promoting the improvement of health outcomes. Effective communication between the patient and the provider is essential to clinical function and building the necessary patient-provider relationship. Trust in the provider that results from effective communication advances healthcare organizations' goals of high-quality and affordable healthcare. Past research has shown that patients who trust in their physician and other healthcare providers are more engaged with their care, more likely to follow through with recommended care and medications, and often have better control of chronic conditions (Greene & Ramos, 2020).

According to the World Health Organization (WHO), 30-50 percent of all cancers are preventable. Cancer prevention is the most cost-effective, long-term cancer control strategy (World Health Organization [WHO], 2024), and healthcare organizations strive to encourage regular cancer screenings. When there is a lack of provider trust, poor patient-provider communication, and an absence of provider screening recommendations, there is a decreased likelihood of receiving preventative cancer screenings.

When working to improve the healthcare of minority populations, once barriers such as poor patient-provider communication and lack of provider trust in receiving cancer screening and cancer care exist, there is a negative effect on overall survival rates. Specifically in the African American community, provider mistrust and overall mistrust

of the healthcare system is a barrier to cancer screening. Based on the results of this study, there is a statistically significant relationship between patient-provider communication and provider trust for cancer-related information. There currently are limited studies that address the effect of patient-provider communication and provider trust for cancer-related information, particularly in African Americans residing in the mid-Atlantic region of the United States. Recommendations for future research include addressing successful and efficient communicative techniques for cancer screenings, improving provider trust in the African American population, and expanding this research to all minority groups.

Implications for Professional Practice and Social Change

Trust is built through communication; trust in healthcare providers is crucial for healthcare outcomes. Effective communication and trust lead to improved patient satisfaction, increased understanding, and more personalized care. When there is a lack of communication between the patient and provider, trust is negatively impacted, thus decreasing patient satisfaction, understanding, and perceptions of care, ultimately negatively influencing healthcare outcomes. The implications for professional practice and positive impacts on social change in the field of oncology and cancer prevention involve addressing the relationship between patient-provider communication and its effect on provider trust for cancer-related information.

Professional Practice

Past studies have shown that patients with a strong and positive relationship with their provider are more likely to adhere to their treatment plans, follow recommended

health and treatment guidelines, and have better health outcomes. Effective communication between the patient and provider has similar results. To achieve improved health outcomes, healthcare administrators within healthcare organizations must strive to influence their providers to have a common goal of efficient communication with their patients. This, in turn, will lead to the provider trust that will guide patient adherence to screening recommendations and treatment.

The findings of this study confirmed the statistically significant relationship between patient-provider communication and provider trust for cancer-related information. The outcome of this study should be considered when developing strategies and techniques for effective patient-provider communication, especially when considering cancer-related information for cancer screening and preventative measures. Healthcare administrators can institute programming within their organizations emphasizing patient-provider communication, such as continuous training and professional development programs that will keep staff up-to-date with evidence-based practices and patient-centered approaches.

Social Change

Trust between the patient and provider influences many aspects of healthcare, including management outcomes, particularly in treating long-term illnesses such as cancer. Trust also can facilitate influential outcomes in relation to health promotion and prevention (Rasiah et al., 2020). Cancer screening's purpose is to find cancer early before it progresses. Delaying cancer screening can put patients at an increased risk of late-stage cancer diagnosis, potentially increasing their chance of mortality. Effective patient-

provider communication is essential for trust-building between the patient and provider, especially when discussing cancer screening and cancer-related information. Providers that have built a relationship of trust with their patients allow for open, honest, and valuable conversations about health and preventative measures for reducing the risk of developing cancer.

This study found a statistically significant relationship between patient-provider communication and provider trust for cancer-related information. The results further highlight the impact of positive patient-provider interactions and a positive patient-provider relationship on trust. Without trust, there is no relationship.

Social change begins with the interactions of others. For the addressed research problem in this study, social change starts with the healthcare administrator and those in leadership roles. Healthcare administrators should focus on the interpersonal relationship between the provider and patient by observing current communication techniques between the patient and provider.

The research discussed in this study, along with the in-depth emphasis on the interaction between the patient and provider, will expand upon the available knowledge on patient-provider communication and its relationship to provider trust for cancer-related information. When applied to African Americans residing in the mid-Atlantic United States and expanding this research's findings to other minority groups throughout the United States, this study can affect positive social change by influencing how providers communicate with patients, thus enhancing the patient's trust and potentially improving overall health outcomes by catching cancer earlier when there are more

treatment options and before there is a chance of progression for an incurable state of disease.

Conclusion

The purpose of this quantitative, quasi-experimental, retrospective study was to determine if there is a statistically significant relationship between the independent variable, patient-provider communication, and provider trust, the dependent variable, for cancer-related information. Particularly, this study was conducted to determine how patient-provider communication and provider trust for cancer-related information affects adherence among African Americans residing in the mid-Atlantic region of the United States. Donabedian's conceptual model grounded this study using its three core elements: structure (healthcare delivery of hospitals, clinics, etc., within the overall healthcare system), process (patient-provider communication), and outcome (provider trust). Within this study, the structure evaluated the healthcare delivery of hospitals, clinics, and/or doctors' offices within the overall healthcare system. The process referred to patient-provider communication. The outcome involved provider trust.

RQ1 was guided by one research question and its corresponding hypothesis, which examined the relationship between patient-provider communication and provider trust for cancer-related information. An ordinal logistic regression analysis was conducted to determine whether there is or is not a relationship. The results of the analysis revealed that there is a statistically significant relationship between patient-provider communication and provider trust for cancer-related information.

This study is significant in that it has offered insight into the rationale for

improved patient-provider communication and ways in which healthcare organizations can implement programming that emphasizes effective patient-provider communication, which can improve provider trust. It has added to the growing body of knowledge on the relationship between patient-provider communication and provider trust for cancer-related information in African Americans in the mid-Atlantic region of the United States, creating positive social change. It also has the potential to contribute to positive social change by affecting how providers communicate with patients, thus improving the patient's trust in their providers.

References

Adams, V., & Craddock, J. (2023). Patient-provider communication quality as a predictor of medical mistrust among young Black women. *Social Work in Public Health*, *38*(4), 334–343. https://doi.org/10.1080/19371918.2023.2177225

Adams, L., Richmond, J., Corbie-Smith, G., & Powell, W. (2017). Medical mistrust and colorectal cancer screening among African Americans. *Journal of Community Health*, *42*(5), 1044–1061. https://doi.org/10.1007/s10900-017-0339-2

Agency for Healthcare Research and Quality. (2020). *CAHPS Clinician and Group Survey 3.0 Measures*. https://www.ahrq.gov/cahps/surveys-guidance/cg/about/survey-measures.html

Agrawal, P., Chen, T. A., McNeill, L. H., Acquati, C., Connors, S. K., Nitturi, V., Robinson, A. S., Martinez Leal, I., & Reitzel, L. R. (2021). Factors associated with breast cancer screening adherence among church-going African American women. *International Journal of Environmental Research and Public Health*, *18*(16). https://doi.org/10.3390/ijerph18168494

Anderson, J. N., Graff, J. C., Krukowski, R. A., Schwartzberg, L., Vidal, G. A., Waters, T. M., Paladino, A. J., Jones, T. N., Blue, R., Kocak, M., & Graetz, I. (2021). "Nobody will tell you. you've got to ask!": An examination of patient-provider communication needs and preferences among Black and White women with early-stage breast cancer. *Health Communication*, *36*(11), 1331–1342. https://doi.org/10.1080/10410236.2020.1751383

Andrade, C. (2018). Internal, external, and ecological validity in research design,

conduct, and evaluation. *Indian Journal of Psychological Medicine*, *40*(5), 498.

Asan, O., Yu, Z., & Crotty, B. H. (2021). How clinician-patient communication affects trust in health information sources: Temporal trends from a national cross-sectional survey. *PLoS One*, *16*(2), 1–15. https://doi.org/10.1371/journal.pone.0247583

Centers for Disease Control and Prevention. (2023a). *African American People and Cancer*. U.S. Department of Health and Human Services. https://www.cdc.gov/cancer/health-equity/groups/african-american.htm

Centers for Disease Control and Prevention. (2023b). *U.S. Cancer Statistics Female Breast Cancer Stat Bite*. U.S. Department of Health and Human Services. https://www.cdc.gov/cancer/uscs/about/stat-bites/stat-bite-breast.htm

Centers for Medicaid & Medicaid Services. (2023, September 6). *Quality Measures*. https://www.cms.gov/medicare/quality/measures

Cuevas, A. G., O'Brien, K., & Saha, S. (2019). Can patient-centered communication reduce the effects of medical mistrust on patients' decision making? *Health Psychology*, *38*(4), 325–333. https://doi.org/10.1037/hea0000721

Donabedian, A. (1966). Evaluating the quality of medical care. *The Milbank Memorial Fund Quarterly*, *44*(3), 166–206.

Donabedian A. (1988). The quality of care. How can it be assessed? *JAMA*, *260*(12), 1743–1748. https://doi.org/10.1001/jama.260.12.1743

Dunbar-Jacob, J. (2018). Minimizing threats to internal validity. In *Intervention research and evidence-based quality improvement: Designing, conducting, analyzing, and*

funding (pp. 129–143).

Finney Rutten, L. J., Blake, K. D., Skolnick, V. G., Davis, T., Moser, R. P., & Hesse, B. W. (2020). Data resource profile: The National Cancer Institute's Health Information National Trends Survey (HINTS). *International Journal of Epidemiology*, *49*(1), 17. https://doi.org/10.1093/ije/dyz083

Frankfort-Nachmias, C., Leon-Guerrero, A., & Davis, G. (2020). *Social statistics for a diverse society* (9th ed.). Sage Publications.

Greene, J., & Ramos, C. (2021). A mixed methods examination of health care provider behaviors that build patients' trust. *Patient Education and Counseling*, *104*(5), 1222–1228. https://doi.org/10.1016/j.pec.2020.09.003

Hawkins, J. M., & Mitchell, J. (2018). The doctor never listens: Older African American men's perceptions of patient--provider communication. *Social Work Research*, *42*(1), 57–63. https://doi.org/10.1093/swr/svx028

Hong, H., & Oh, H. J. (2020). The effects of patient-centered communication: Exploring the mediating role of trust in healthcare providers. *Health Communication*, *35*(4), 502–511. https://doi.org/10.1080/10410236.2019.1570427

Hutchinson, D., & Chyung, S. Y. (2023). Evidence-based survey design: Adding "Moderately" or "somewhat" to Likert scale options agree and disagree to get interval-like data. *Performance Improvement*, *62*(1), 17–24. https://doi.org/10.56811/PFI-22-0012

Jiang, S. (2020). The relationship between face-to-face and online patient-provider communication: Examining the moderating roles of patient trust and patient

satisfaction. *Health Communication*, *35*(3), 341–349. https://doi.org/10.1080/10410236.2018.1563030

Kim J. H. (2019). Multicollinearity and misleading statistical results. *Korean Journal of Anesthesiology*, *72*(6), 558–569. https://doi.org/10.4097/kja.19087

Kindratt, T. B., Atem, F., Dallo, F. J., Allicock, M., & Balasubramanian, B. A. (2020). The influence of patient-provider communication on cancer screening. *Journal of Patient Experience*, *7*(6), 1648–1657. https://doi.org/10.1177/2374373520924993

Kindratt, T. B., Dallo, F. J., Allicock, M., Atem, F., & Balasubramanian, B. A. (2020). The influence of patient-provider communication on cancer screenings differs among racial and ethnic groups. *Preventive Medicine Reports*, *18*. https://doi.org/10.1016/j.pmedr.2020.101086

Krieger, J. L., Neil, J. M., Duke, K. A., Zalake, M. S., Tavassoli, F., Vilaro, M. J., Wilson-Howard, D. S., Chavez, S. Y., Laber, E. B., Davidian, M., George, T. J., Modave, F. P., Odedina, F. T., & Lok, B. C. (2021). A pilot study examining the efficacy of delivering colorectal cancer screening messages via virtual health assistants. *American Journal of Preventive Medicine*, *61*(2), 251–255. https://doi.org/10.1016/j.amepre.2021.01.014

Lemmo, D., Martino, M. L., Donizzetti, A. R., Freda, M. F., & Caso, D. (2022). The Relationship between healthcare providers and preventive practices: Narratives on access to cancer screening. *International Journal of Environmental Research and Public Health*, *19*(17). https://doi.org/10.3390/ijerph191710942

Matthay, E. C., & Glymour, M. M. (2020). A graphical catalog of threats to validity:

linking social science with epidemiology. *Epidemiology (Cambridge, Mass.)*, *31*(3), 376–384. https://doi.org/10.1097/EDE.0000000000001161

National Cancer Institute (NCI). (n.d.). *About HINTS*. https://hints.cancer.gov/about-hints/learn-more-about-hints.aspx

National Cancer Institute (NCI). (n.d.). *All HINTS questions*. https://hints.cancer.gov/view-questions/all-hints-questions.aspx

National Cancer Institute (NCI). (n.d.). *HINTS instrument development and validation procedures*. https://hints.cancer.gov/about-hints/instrument-development.aspx

National Cancer Institute (NCI). (n.d.). *What makes HINTS unique*. https://hints.cancer.gov/about-hints/hints-unique.aspx

National Cancer Institute (NCI). (2018). *National Cancer Institute overview and mission*. https://www.cancer.gov/about-nci/overview

Patient-Provider Communication Network. (2024, March 23). *About PPC*. https://www.patientprovidercommunication.org/about-ppc/

Rasiah, S., Jaafar, S., Yusof, S., Ponnudurai, G., Chung, K. P. Y., & Amirthalingam, S. D. (2020). A study of the nature and level of trust between patients and healthcare providers, its dimensions and determinants: A scoping review protocol. *BMJ Open*, *10*(1), e028061. https://doi.org/10.1136/bmjopen-2018-028061

Roy, S., Dickey, S., Wang, H.-L., Washington, A., Polo, R., Gwede, C. K., & Luque, J. S. (2021). Systematic review of interventions to increase stool blood colorectal cancer screening in African Americans. *Journal of Community Health*, *46*(1), 232–244. https://doi.org/10.1007/s10900-020-00867-z

Sharkiya, S. H. (2023). Quality communication can improve patient-centred health outcomes among older patients: A rapid review. *BMC Health Services Research*, *23*(1), 886. https://doi.org/10.1186/s12913-023-09869-8

Sutton, A. L., He, J., Edmonds, M. C., & Sheppard, V. B. (2019). Medical mistrust in black breast cancer patients: Acknowledging the roles of the trustor and the trustee. *Journal of Cancer Education : The Official Journal of the American Association for Cancer Education*, *34*(3), 600–607. https://doi.org/10.1007/s13187-018-1347-3

Tegenu Lemma, K., Tilahun Beyene, D., Mekoya Jemaneh, T., Melkamu Andualem, E., & Atomsa Hunde, G. (2023). Patients' trust in health care providers among hospitalized patients, Jimma, South West Ethiopia. *SAGE Open Nursing*, 1–7. https://doi.org/10.1177/23779608231167810

Trant, A. A., Szekely, B., Mougalian, S. S., DiGiovanna, M. P., Sanft, T., Hofstatter, E., Silber, A., Adelson, K. B., Chagpar, A., Killelea, B., Horowitz, N., Lannin, D., Park, T., Corso, M., Abraham, G., Pollard-Murphy, K., Sturrock, T., Knill-Selby, E., Western, A., … Pusztai, L. (2019). The impact of communication style on patient satisfaction. *Breast Cancer Research and Treatment*, *176*(2), 349–356. https://doi.org/10.1007/s10549-019-05232-w

Treiman, K., McCormack, L., Wagner, L., Roach, N., Moultrie, R., Sanoff, H., Bann, C., Street, R. L., Jr., Ashok, M., & Reeve, B. B. (2018). Factors affecting the communication experiences of newly diagnosed colorectal cancer patients. *Patient Education and Counseling*, *101*(9), 1585–1593.

https://doi.org/10.1016/j.pec.2018.04.016

U.S. Bureau of Labor Statistics. (n.d.) *Mid-Atlantic information office*. https://www.bls.gov/regions/mid-atlantic/home.htm

U.S. Department of Health and Human Services Office of Minority Health. (n.d.). Cancer and African Americans. https://minorityhealth.hhs.gov/cancer-and-african-americans

Williams, J. S., Fong-Gurzinsky, J., Nagavally, S., Walker, R. J., Asan, O., Ozieh, M. N., & Egede, L. E. (2021). Preferences in trust regarding the provision of cancer information among adults. *Journal of the National Medical Association*, *113*(4), 457–464. https://doi.org/10.1016/j.jnma.2021.03.003

World Health Organization (WHO). (2024). *Preventing Cancer*. https://www.who.int/activities/preventing-cancer

Wu, D., Lowry, P. B., Zhang, D., & Tao, Y. (2022). Patient trust in physicians matters-understanding the role of a mobile patient education system and patient-physician communication in improving patient adherence behavior: Field study. *Journal of Medical Internet Research*, *24*(12), e42941. https://doi.org/10.2196/42941

Zavala, V. A., Bracci, P. M., Carethers, J. M., Carvajal-Carmona, L., Coggins, N. B., Cruz-Correa, M. R., Davis, M., de Smith, A. J., Dutil, J., Figueiredo, J. C., Fox, R., Graves, K. D., Gomez, S. L., Llera, A., Neuhausen, S. L., Newman, L., Nguyen, T., Palmer, J. R., Palmer, N. R., Pérez-Stable, E. J., … Fejerman, L. (2021). Cancer health disparities in racial/ethnic minorities in the United States. *British Journal of Cancer*, *124*(2), 315–332.

https://doi.org/10.1038/s41416-020-01038-6