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Development and evaluation of an evidence-based educational toolkit on the knowledge, attitude, and practice of primary care clinicians' regarding social determinants of health that impact prostate health in black men: A Quality improvement Project

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Development and evaluation of an evidence-based educational toolkit on the knowledge, attitude, and practice of primary care clinicians' regarding social determinants of health that impact prostate health in black men: A Quality improvement Project

A Scholarly Project Presented to the Faculty of the

Nicole Wertheim College of Nursing and Health Sciences

Florida International University

In partial fulfillment of the requirements For the Degree of Doctor of Nursing Practice

By

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Abstract

Social determinants of health (SDoH) are factors in individuals’ environment that influence their ability to receive quality and equitable care. These conditions exist in the environments “where people are born, live, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks” (Center for Diseases Control and Prevention, 2021). They reflect the effect of health disparities in many racial or social groups, especially black men with prostate cancer. Despite new treatment protocols, innovative technology, and research trials in the management of prostate cancer, there is a high incidence of prostate cancer, and disproportionated cancer outcomes are an ongoing burden for black men.

This Quality improvement project aims to develop an evidence-based educational toolkit for clinicians to use when screening for SDoH that impacts prostate health in black men. The toolkit outlines critical elements to effective care delivery, including communication, cultural congruence, and partnership. A literature review was conducted and twelve (n=12) studies were selected. Results from this literature review showed that social conditions are linked to many prostate cancer cases in black men. In addition, they contribute to a lower prostate cancer screening rate, fewer clinical trials, advanced diseases at diagnosis, and inadequate treatments or management compliance in black men. Consequently, a quality improvement was launched to develop a guide that focuses on patient-centered care to alleviate the burden of prostate cancer in black.

An educational intervention was designed and delivered in person at the clinical site and through an online Zoom meeting using a PowerPoint presentation. Pretest and post-test intervention scores were compared, and evaluated for their statistical significance. The educational intervention targets the core factors for improvement in practice, including healthcare clinicians' knowledge, attitudes, and behaviors toward the impact of social determinants of health on prostate cancer outcomes in black men. Additionally, clinicians' communication strategies and perceptions were evaluated to assess their readiness to implement targeted approaches in care when caring for such a high-risk population.

Keywords: health disparities, black men, gender inequities, prostate health, social determinants of health (SDoH), prostate cancer, preventive care, and health equity.

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I. Introduction

Introduction/Problems Statement

Background

Colleagues (2018) stated that prostate cancer is the leading cause of male-related cancer deaths and the third leading cause of male death overall. The etiology of prostate cancer is unknown, but several risk factors are related to its high incidence in certain social groups. As men age, a diagnosis of prostate cancer is common and related to the cellular and molecular mechanism due to hormonal changes, exposure to certain chemicals, and infectious agents. Prostate cancer is a multifocal disease as primary tumors contain multiple and genetically distinct foci of disease at diagnosis displayed in the exome sequencing of prostate cancer foci provided evidence for the presence of somatically independent tumors within the same prostate (Testa, Castelli, Pelosi 2019).

Also, social inequalities among men with prostate cancer offer evidence for the influence of ethnicity, socioeconomic position, occupational exposure, and other SDH (Brown et al., 2018). Predisposing conditions are factors within the individuals and environment that increase a person's likelihood of getting the disease and its prevalence in many racial groups. Some of these factors or conditions can be changed or controlled by the individuals' lifestyle choices and environmental factors known as modifiable factors, including diet, physical activity, and access to care; however, some are unchangeable, including gender and gene, and age. In black men, the high incidence of prostate cancer is not linked to identifiable modifiable risk factors, making it challenging for clinicians to raise awareness of such factors in black communities.

The incidence of prostate cancer in black men is rather associated with non-modifiable factors that impact all aspects of care, from prevention to diagnosis, and to treatment; such factors include age, gene changes, and African ancestry. However, in this everlasting challenge to improve prostate cancer outcomes in black men, early detection and treatment remained the best approach to managing the disease progression and outcomes. Thus, an understanding of all contributing factors to the high incidence of prostate cancer in black is imperative to promote prostate health, access to care, and delivery of preventive care and treatment. A collaborative approach is important in treating prostate cancer but can be costly depending on the extent of disease and treatment approach, including active surveillance, radiation and chemotherapy, and surgery.

Cancer treatment costs vary from individuals, from stages of the disease, and the prognosis at diagnosis. According to the American Cancer Society (2022), a watchful waiting approach, close monitoring of condition without initiating any treatment unless symptoms worsen, for the early stage of prostate cancer could cost less than $10,000 over five years, while costs for advanced prostate cancer treatment could reach $50,000-$100,000 or more. The continuous rising costs of healthcare represent a major barrier to access to medical services. Many U.S adults reported that the cost of health care prevents timely access to medical care and treatments. Montero and colleagues (2022) reported that the high healthcare costs disproportionately affect uninsured adults, especially Black and Hispanic adults, and those with lower incomes.

Unemployment and low-income in many black communities impede the ability to access high cost of medical care, which represent barriers to care. The delay in care for most contributes to an increased percentage of preventable diseases and prevalence of chronic health conditions. Prostate cancer incidence and disparities in prostate cancer survival rates are associated with socioeconomic status, race, education, and census tract-level poverty (Coughlin, 2020), and many reported that they experience discrimination in health care settings (Gilbert et al., 2016). Care for black men diagnosed with prostate cancer is influenced by many factors, but socio-economic factors are largely responsible for delay and access to care as costs remained an important factor of individuals avoiding medical services.

Often, prostate cancer is detected at an advanced stage in black men and making them prone to higher incidence of cancer related death, and the cost of treatment may be higher and strain the health care system when the demand for care exceeds the available resources as most of them are from a low-economic background (Islami et al., 2016). The treatment of prostate cancer may cure the disease or slow the progression of the disease; however, their side effects significantly impact the quality of life of patients, including urological dysfunction, sexual function, anxiety, and depression (National Cancer Institute, 2021). For instance, men who underwent prostatectomy usually complained of erectile dysfunctions and urinary incontinence. Black men affected by sexual dysfunctions often suffer mental health disorders, including depression and suicidal ideation.

Colleagues (2016) reported that the changes in black men's physical bodies may affect psychological and mental health. It is often related to their innate perceptions of manhood in which masculinity influences one's identity. Sexual activities in many African settings are perceived to be an important expression of men's masculinity as sex is viewed as an activity of fun and fame and use the fulfillment of their roles to evaluate their manhood, including provider, father, and husband (Gilbert et al., 2016, p. 301). Usually, they spend most of their time fulfilling their roles and caring for their families instead of themselves. Thriving for masculinity, economic stability, and social status contribute to stress in black men, which often pressure them to engage in risky behaviors that affect their health, including alcohol abuse, substance abuse, and violence (Gilbert et al., 2016, p. 302).

Search Strategy of the Literature

Based on this study's Pico question and objectives, the use of relevant keywords and subjects' headings helps conduct a comprehensive database search of CINAHL, PubMed, health organizations, and other Universities' websites. Searched terms included health disparities, black men, gender inequities, prostate health, social determinants of health, prostate cancer, preventive care, and health equity. The search generated 319 articles, CINAHL (n= 119) on prostate cancer and health disparities in black men; PubMed (n= 195), and additional resources from health organizations' websites such as the CDC, Agency for Healthcare Research and Quality, and National Cancer Institute (n=5). This literature review includes twelve (n=12) articles that met the inclusion criteria and relevant to the project's query, and link social determinants of health and prostate cancer outcomes in black, specifically, systematic reviews (n=2), qualitative (n=4), and quantitative (n=6) studies.

Inclusion Criteria

Primary and peered- reviewed articles published between 2017-2022 that met the following criteria were included in the study. These criteria include full text in English language, black men 18 years and older, identified prostate cancer disparities, the burden of prostate cancer in black men, the impact of health disparities on prostate health, relevant to the objective of the search, and reliable with convincing evidence of the disproportionated impact of prostate cancer in black men.

Exclusion Criteria

Articles were excluded if they did not include information specific to the studied population, were published beyond five years, were not in English or full-text, had biased results editorials, and/or were irrelevant to the project's focus analysis.

Summary of the Literature

Social Determinants of prostate cancer

There is a high incidence of prostate cancer in Caribbean men, predominantly Jamaican. Brown and colleagues (2018, p. 1) conducted a systematic review to analyze the social factors that influence prostate health and the incidence of prostate cancer in Caribbean men. Several reported cases from different Caribbean islands were appraised to determine the association between social determinants of health and prostate cancer, its frequency, and outcomes. The cause of the high incidence of prostate cancer in the Caribbean was unknown. Previous studies did not include a systematic evaluation of reported cases on the impact of social determinants despite its high incidence, prevalence, and adverse outcomes in black men in different Caribbean islands.

Also, in another study the incidence of prostate cancer is higher in men with lower educational levels (OR 1.60, 95%CI 1.18–2.19). This study used the Commission of Social Determinants of Health (CSDH) by the World Health Organization WHO analytical framework to guide the research studies and data collection in 32 Caribbean territories. The eligibility criteria included at least one relationship between social determinants and prostate cancer prevalence, incidence, or outcomes (Brown et al., 2017, p. 2). They did not have specific criteria for the sample size and obtained data from the general population. This systematic review focused on health equity, including background, race, education, and socioeconomic status. The identified social determinants include education, ethnicity, marital status, occupation, and socioeconomic position. In this study, due to reluctance in health-seeking behavior or access to healthcare provision, the mortality rate was higher in men with lower socioeconomic position (Brown et al., 2017, p. 10). The limitation of the study was limited access to relevant articles, especially on prostate outcomes.

Furthermore, in the United States, health disparities among racial groups remained controversial. The black population and other marginalized groups bear a disproportionate burden of health inequities indicated by the gaps in health insurance coverage, uneven access to healthcare services, and adverse health outcomes (Buchanan, Gubrium, Scott, & Douglas, 2018, p. 1). Another study examined health initiatives to promote healthy behaviors in Black men due to the prevalence of poor health outcomes in that population, including the high incidence of chronic diseases and increased morbidity and mortality rate. The purpose of this study was to identify factors that influence African-American men's health and propose more effective interventions to address them. They used the MOCHA Moving Forward design, community-based-participatory research investigation, for data collection and analysis to minimize assumptions and biases and respect community autonomy Buchanan et al., 2018, p. 3).

The sample was minimal, recruiting 40 African men aged 40-65 (20 men in good health and 20 men diagnosed with at least one chronic disease). Based on the research, the socio-economic status of African American men impacts their physical and mental health. The barriers to active participation in the workforce in middle-aged African Americans felt like a driver for psychological and physical health because it leads to other challenges, including housing, transportation, and access to care, food, and social services (Buchanan et al., 2018. pd. 9). The sample size was the standard limitation of this study.

Impacts of Social Determinants of Health

The Centers for Disease Control and Prevention (2021, p. 1) defined social determinants as the places where people live, learn, work, and play that affect a wide range of health risks and outcomes. They have a great impact on the delivery of health and are associated with health inequities in most communities. This considerable difference in health management contributes to a high prevalence of chronic disease in some social or racial groups, which sometimes seems to be a burden because the healthcare system does not have adequate resources for this population's demand and health needs. The rise of chronic diseases increases the morbidity and mortality rate in those communities, especially low-income and black communities. It is important that resources be allocated to ensure the delivery of quality care that can influence population health outcomes.

Also, any proposed interventions should focus on addressing the five targeted areas of social determinants of health that People 2030 outlined in its quality improvement framework, focusing on improving population health, including economic stability, safe environment, social and community context, access to quality education, and quality healthcare. It outlines the overall poverty rate in the United States compared to that of the black community. The poverty rate is higher in black communities than any other racial group. The United States has an overall poverty rate of 11.4%; within the Black community, the poverty rate is 19.5% (Feeding America, 2022). Poverty is one of the social determinants of health that affects predominantly minority groups and contributes to lack of access to necessary resources that promote or maintain health, such as nutritious food, access to health care services, and quality education.

Some diseases are more prominent in specific demographic backgrounds and racial groups and significantly impact the population's health outcomes. For instance, chronic diseases such as diabetes, hypertension, and stroke are common in individuals with inadequate health resources and access to care, increasing morbidity and mortality rates. As for prostate cancer, black men are highly affected; the negative impact on that population's health outcomes implies the need for a thorough evaluation of possible modifiable factors to implement new approaches to tackle the gap. Zavala and colleagues (2021) reviewed and summarized the reported disparities and associated factors for the most common cancers in racial minorities and the impact of health disparities in cancer incidence and outcomes by race and ethnicity groups to implement changes to address the disproportionated outcomes in some racial groups.

The goal was to identify cancer health disparities and minority groups and address the structural inequities in care to improve cancer outcomes for all (Zavala et al., 2021, p. 315). They incorporated different frameworks and domains, such as biology, behavior, and environmental factors that create health disparities in minority groups and contribute to cancer incidence and outcomes. In this study, they identify the health care system and socioeconomic status are the top factors that contribute to health disparities and the cause of many types of cancer in the United States, such as breast, colon, prostate, and lungs cancer (Zavala et al., 2021, p. 316). The US healthcare system funding system and health programs limit access to care due to private health stakeholders' regulation and low insurance coverage. The government offers some health benefits for low-income families and children; however, most of the population cannot afford the high cost of health insurance.

Also, those with insurance, benefits, or plans may not cover services for their specific health needs, contributing to ineffective quality care delivery and access to care that contributes to inefficient and uncoordinated care. Such an approach to care increases the incidence of chronic disease and costs due to lack of access to preventive care, increase in demand for health care services to manage chronic disease, redundant testing, and overtreatment. According to Erickson and Colleagues (2020), the fee-for-service payment system of reimbursement contributes to suboptimal outcomes since clinicians are focused on benefits or gain for each intervention rendered instead of the relevance and requisite of interventions for the individual's health outcomes (p.1).

Socioeconomic status influences the individual's access to quality care and educational resources to maintain health and wellness. Health education can shape the individuals' health behaviors, attitudes, and perceptions of health risks necessary to maintain physical, mental, emotional, and social health. It is an important intervention that clinicians can use to empower patients to make informed decisions about their care and change their lifestyles to prevent and manage chronic diseases. Thus, clinicians should assess the individuals or population's educational health needs, plan, and implement new approaches to address their needs to prevent preventable diseases, increase health equity, and reduce adverse health outcomes (Touro University Worldwide, 2020, p.1). Access to affordable health services remained an ever-lasting challenge for some racial groups, contributing to a lower rate of preventive care, delay in diagnosis and treatment, and adherence.

In addition, their socio-environment increases their risk of exposure to stressors and pollutants that increase the risk for chronic diseases and cancers. Thus, these factors prove the ineffectiveness of innovative cancer guidelines and treatment for prostate cancer in black men. Access to the recommended preventive interventions and treatment is a financial burden for the socioeconomically disadvantaged. Prostate cancer disparities are the most prevailing of all types of cancer, 78% higher incidence rate or 2-3 times higher mortality rate in black men than white men (Zavala et al., 2021, p. 317). This population may benefit from early or recommended screening guidelines by the U.S. Preventive Services Task Force, such as prostate-specific antigen and digital rectal exam. USPSTF, a volunteer group of national experts in prevention and evidence-based medicine, makes recommendations about clinical preventive services such as screening tests, counseling services, and preventive medications (Agency for Healthcare Research and Quality, 2021).

Like other diseases or cancers, early detection and treatment are necessary in the prevention of adverse outcomes and proven to reduce the morbidity and mortality rate. The high incidence of prostate cancer in black men is linked to low screening rate and clinical trials that contribute to advanced disease diagnosis and poor-quality treatment plan and follow-up care (Zavala et al., 2021, p. 318). It is also more complex; a thorough evaluation of the various factors affecting prostate health in black men is imperative, let alone early screening. Thus, finding new approaches to tackle the social determinants that create the disparities in prostate health in black men will help improve that population's health outcomes and quality of life.

Prostate cancer risk factors in black men

Nelson and colleagues (2022) reported that the absolute risk for prostate cancer includes age, race, and family history of cancer. Few data suggested links of dietary and health-related behavior factors associated with prostate risk (Nelson et al., 2022, p. 3). The high incidence of prostate cancer in black compared to other racial groups remains unclear. Most likely, it is multifactorial, as reported in a study that focused on determining race-specific modifiable factors that potentially increase the risk of prostate cancer (Layne et al., 2019, p.2). A cohort study was conducted with 567,169 respondents' individuals residing in six US states (California, Florida, Louisiana, New Jersey, North Carolina, and Pennsylvania), and two metropolitan areas (Atlanta, Georgia and Detroit, Michigan). They gathered data through a questionnaire about dietary intake and a supplementary risk factor questionnaire about screening, including prostate-specific antigen and digital rectal examination.

Prostate cancer is the second lead cause of cancer in males, with over 1.4 million diagnoses, and remains a substantial cause of mortality, with over 375,000 deaths (Saunders, Kote-Jaria, & Eeles, 2021, p. 2). A bivariate analysis was conducted using chi-square tests for categorical and t-tests for continuous variables. The study indicated that dietary and lifestyle factors increased rather than decreased the relative risk for race and ethnicity for prostate cancer; thus, the identified risk factors do not adequately explain risk in black men. Family history is a fundamental risk factor for prostate cancer. However, there is limited data about the penetrating genes accountable for hereditary prostate cancer and the availability of robust biomarkers for routine screening. Genetic testing facilitates early detection and prevention of cancer in a high-risk population, those with a primary family history of cancer.

A systematic review was conducted to identify genetic loci, genes, and variants associated with the risk of prostate cancer. Germline mutation carriers and non-carriers to the clinicopathological characteristics were compared, including age at diagnosis of first tumor, age at diagnosis of prostate cancer, and prostate-specific antigen level at the time of diagnosis. This study found a protein-truncating variant in 6 genes (BRCA2, ATM, MLH1, BRIP1, PALB2, and FGFR3). For instance, patients with BRCA2 genes mutation are at increased risk of prostate cancer. Thus, the early identification of germline mutation with prostate cancer is imperative to improve disease outcomes in black men concerning risk assessment screening, preventive measures, and targeted therapy approaches. Patients with a known family history of any cancer are at risk of a possible diagnosis, and it is one of the absolute risk factors for prostate cancer in black men.

Prostate cancer has a genetic link and a two-to-three-fold increased risk for first-degree relatives (Darst et al., 2020, p. 316). In recent studies, no genes or mutations justify prostate cancer's genetic link in men of African ancestry yet, which direct Darst and Colleagues (2020) to study the germline variation of prostate cancer that contributes to familial clustering. They investigated the association of the T allele with prostate cancer family history and age at diagnosis, characteristics that indicate a strong genetic influence of disease onset (Darst et al., 2020, p. 317). Darst and colleagues (2020) reviewed 9052 prostate cancer cases and categorized them into several groups, including control, no known family of cancer, family history of cancer, and disease. The study of the germline variation of prostate cancer showed that the percentage of cases carrying the T allele was significantly greater for men with a prostate cancer family history (27.4% in those with a first or second-degree relative with prostate cancer vs. 22.7% in those without, p = 0.002), and men diagnosed at age less than 60 years 28.2% vs. 21.6% for those aged more than 60 years old at diagnosis, p = 0.002 (Darst et al., 2020, p. 319). They added supplemental material that evaluates the relationship between allele risk and strength of family history.

The result suggested that rs72725854 is over-represented in men of African ancestry with a family history of prostate cancer and are diagnosed at a younger age, an absolute risk that estimated the odds ratios of each genotype and family history (p. 319). However, they recommend a prospective investigation of rs72725854 T allele carriers to determine the benefits of its incorporation as a screening measure for patients with identified high risk. This knowledge of carrier status for this genetic variant risk can help guide effective prostate cancer screening to identify aggressive disease earlier in men with African ancestry (p. 320). Health disparities in the black population have remoted to many years and seem more complex and diversified in today's society but not a newly identified challenge or burden in black communities.

Remarkably, black men are subject to the consequences of health disparities for many reasons, including historical events, the health care system, clinicians 'perception, socio-economic status, etc. Black men have the highest age-adjusted all-cause mortality rate and arguably the worst health status of any race–gender group in the U.S (Shikan, Schoenberger, Konety, & Vickers, 2018, p. s1). The current health outcomes statistics depict the gap in quality care delivery as there is strong evidence of preventable chronic diseases and high morbidity and mortality rate. Among racial and ethnic minorities, black patients have a higher rate of chronic diseases and premature death than white and black men have the lowest life expectancy of any demographic group, on average 4.5 fewer years than white men (Torres, 2018, p.2). Several factors contributed to the poor health outcomes for this population and were identified by many health organizations for decades, and the COVID 19 pandemic further depicts the prevalence and impacts of black communities.

The concern is not simply identifying the risk factors but developing a strategic plan to eliminate or reduce their impacts on population health. For instance, social determinants are existing conditions in individuals' environments "where people are born, live, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks" (Center of Diseases Control and Prevention, 2021, p. 1). These conditions are known contributors to many chronic diseases and poor health outcomes in black men. However, the challenge remained to find the right framework and required the application of effective approaches to tackle the conditions and reduce their negative impact on the health outcomes of a given population. The ever-lasting burden of detrimental prostate cancer outcomes in black men called for the development and implementation of strategic population-focused initiatives with the efforts of all stakeholders to change that paradigm of care outcomes of this population by promoting health awareness and better preventive care interventions to improve their quality of life.

Health care reforms aim to find new approaches to improve care delivery and reduce health risks by providing safe and quality care. In the past decade, the Department of Health and Human Services launched Healthy People 2020 to promote the health of all groups and quality of life through health promotion and disease prevention approaches (National Center for Health Statistics, 2020, p. 1). However, this approach did not greatly impact health care outcomes for most racial groups due to the implications of the individuals' environment on health. It led to the launching of Healthy People 2030, with new objectives to create social, physical, and economic environments that promote health and well-being (Office of Diseases Prevention and Health Promotion, 2021, p. 1).

PICO Question

The PICO question was as follows: will an online educational intervention on how social determinants of health impacts on prostate health in black men and the use of an evidence-based toolkit improve primary care primary care clinicians’ knowledge, attitude, and clinical practice?

- Population: Primary Care clinicians
- Intervention: An educational intervention on the high incidence of prostate cancer in black and the links of social determinants of health impacts on prostate cancer outcomes in black men.
- Comparison: Clinicians’ knowledge before and after the education intervention.
- Outcomes: Changes in participant's knowledge, attitudes and behaviors on the impacts of social determinants of health on prostate cancer in black men.

Project Objectives

Quality improvement (QI) projects focus on improving health outcomes, system performance, and professional development that results from a combined, multidisciplinary approach in how change is delivered (Backhouse & Ogunlayi, 2020, p. 1). Thus, the objective of QI is to develop an evidence-based approach that can transform prostate health care and cancer outcomes in black men. It includes a thorough evaluation of the gap in prostate care outcomes for black men and assessing clinicians' knowledge, attitude, and behaviors of social determinants that impact prostate health in black men.

Project Goals and Outcomes

The ultimate goals of this study are to develop an evidence-based educational toolkit to measure healthcare clinicians’ knowledge, attitudes, and practices regarding SDoH that impact prostate health in black men and implement a targeted approach to care to promote prostate care for black men. As a result, clinicians will recommend timely and better screening tools for these patients, develop patient-centered treatment options, and schedule timely follow- up care appointments to reduce the burden of prostate cancer outcomes. The long-term goal is to reduce the diagnosis of advanced prostate cancer by 50 percent in the next five years. The short-term goal is to change clinicians' knowledge, attitude, and practice after completing the educational program on the social determinants of health impact on prostate cancer health in black men.

Definition of terms

The definitions of terms for this study include:

Health disparities: differences in length of life; quality of life; rates of disease, disability, death; severity of disease; and access to treatment in different racial groups (CDC, 2021).

Racial inequities: lack of access due to racism (CDC, 2021).

Social determinant of health: pre-existing conditions that influence the individual's ability to receive quality and equitable care (CDC, 2021).

Knowledge: information of the pathogenesis, interpretations of laboratory testing, screening, and treatment options for prostate cancer (National Cancer Institute, 2021).

Behavior: healthcare providers implement different models of care in practice and design effective interventions to address the gap delivery of quality care (Engl et al., 2019).

Attitude: a mental position with regard to a fact or state (Merriam-Webster, n.d.).

Prostate cancer: the growth of cancer cells in the prostate (National Cancer Institute, 2021).

Prostate: a gland in the male reproductive system located below the bladder. It produces a fluid that helps nourish and protects the sperm during ejaculation (National Cancer Institute, 2021).

Preventive care: consists of measures taken to promote health and prevent diseases, including immunizations, screening, and lifestyle changes (Shikany et al. 2018).

Prostate health: healthy behaviors that help in maintaining a healthy prostate, like diet, physical activity, and screening (Islami et al., 2020).

Risk factors: consist of conditions that increase an individual likelihood of developing a disease (Layne, Graubard, Ma, Mayne, & Albanes, 2019).

Theoretical Model

Lewin's change model is known as Unfreeze – Change – Refreeze, which refers to the three-stage process of change that was proposed in the 1940’s by change leader Kurt Lewin, a physicist and social scientist. This theory describes the balance and the driving and restraining forces to manage organizational changes such as practice transformation, implementation and practice improvements. One of the main objectives of healthcare is to optimize patient outcomes by increasing its efficiency and productivity through innovative measures. Yet, health inequities persist in many racial groups, which are reflected by the disproportionate incidence of chronic diseases and poor health outcomes. Despite incorporating innovation in care, some individuals still experience poor health outcomes because of the system's inefficiency to identify and address the exact causes of their conditions. For instance, some clinicians do not assess for determinants of health impacts when caring for populations highly affected by SDoH.

Black men have a high incidence of poor prostate cancer outcomes despite innovative measures in screening and treatment protocols. There is a gap in research about the impact of social determinants of health on prostate health and prostate cancer outcomes in black men. This study aims to implement the ABCDE approach to care to help guide practice in preventing and managing prostate cancer in black men. Change can be seen as a threat and challenging to implement as many factors can contribute to resistance or failure, including individuals' perceptions, receptiveness, and lack of resources. An effective change model is imperative to implement and manage change as it disrupts routine patterns to care delivery. Kurt Lewin's model of change, "unfreezing, change, and refreezing," is a practical framework to guide this study. It supports its objectives and promotes change in practice to improve black men's health outcomes and quality of life.

This three-steps model depicts how individuals experience change, and that change can happen if implemented through a constructive method. Lewin's model is a foundation for many fields and considers the science of managing change and substantially promoting innovations, including business, healthcare, and academia (Cummings, Bridgman, & Brown, 2016, p. 49). It is an effective model to promote changes in care and will be used to implement an educational intervention and measure its impacts on clinicians’ knowledge, attitudes, and behavior (figure 2). In the first stage, unfreezing, clinicians will receive a pretest to evaluate their baseline knowledge then participate in an educational session to raise awareness of social inequities in black communities and how they affect health outcomes, increasing individuals developing chronic diseases and life-threatening conditions. In preventing advanced cancer-related death, primary care clinicians play an important role in promoting early screening, diagnosis, and management of prostate cancer.

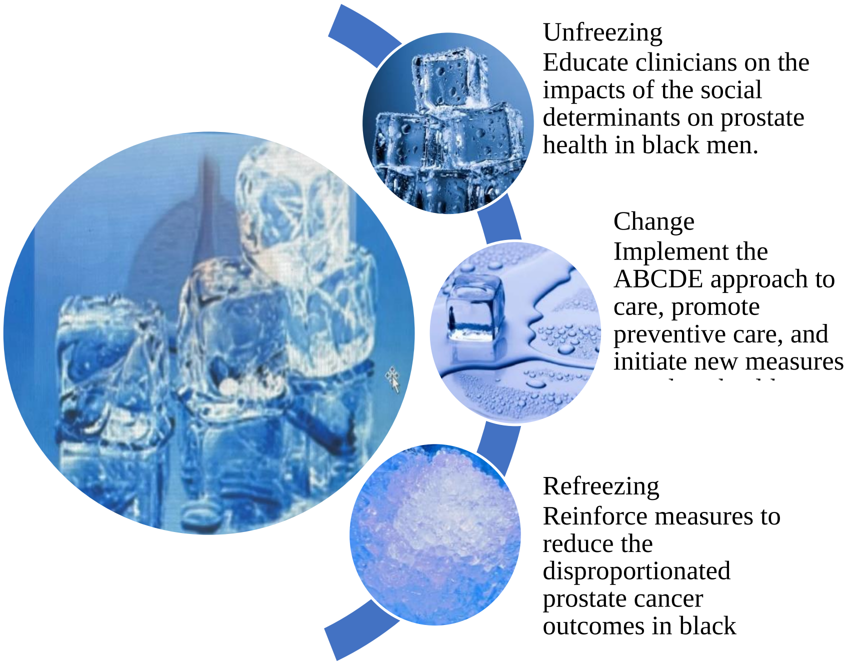
Conceptual Model

This evidence-based toolkit has been developed to optimize clinicians' expertise in evaluating social determinants of health in high-risk populations for a better management of health care outcomes. A four-step approach will be used to guide the development and implementation of this model of care (figure 1). The goal is to alleviate the burden of prostate cancer in black men though 1) determine the social determinants of health impacts on prostate health in black men and educate stakeholders through educational seminars and small group sessions, 2) depict the gap in research and causes of the disproportionate cancer result in black men, 3) conduct reviews at the clinical site to assess the effectiveness of a culturally adaptive model to care, 4) implement a racial-gender-focus, black men, communication, dual-partnerships, and education approach to care in primary care settings.

This model of care will guide clinicians to identify those at risk of developing prostate, facilitate early screening and treatment, and allow the patients to make informed decisions about their care. In the second stage, clinicians implement the ABCDE model in practice to better serve this population and implement new initiatives to reduce the disproportionate burden of prostate cancer to improve patients' quality of life. In the final stage, clinicians continuously reinforce their approach to care or implement new initiatives that can help address the social determinants of health and their impacts on prostate health in black men.

Figure 1

Project Conceptual Model "Kurt Lewin's"



Unfreezing
Educate clinicians on the impacts of the social determinants on prostate health in black men.

Change
Implement the ABCDE approach to care, promote preventive care, and initiate new measures

Refreezing
Reinforce measures to reduce the disproportionated prostate cancer outcomes in black

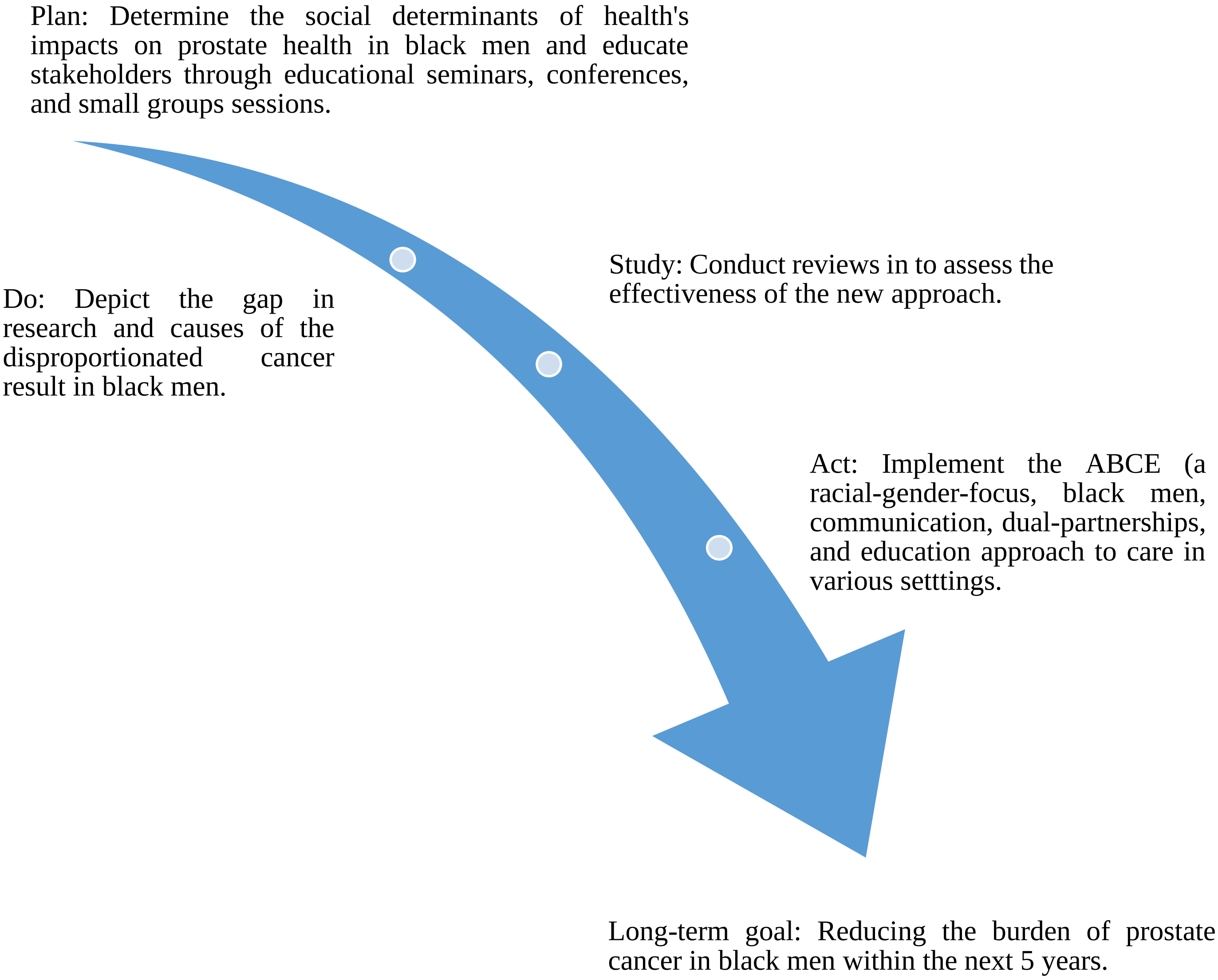
Methodology

This Quality Improvement project follows the Plan, Do, Study, Act (PDSA) methodology that was initially utilized in many industries and in healthcare in recent years to reduce medical errors and variation in patient health outcomes (Christoff, 2018). It is an iterative, four-steps model for improving a process or implementing changes **(**Prentiss & Butler, 2018). The steps include:

- Plan: the recognition of a change targeted for improvement in this stage. The plan consists of study design, setting, sample, instruments, intervention, data collection, and data analysis.
- Do: the implementation of the plan.
- Study: the analysis of the data
- Act: thorough evaluation for any modifications or termination of the study.

Figure 2

Project Methodology Model "PDSA Cycle"



Plan: Determine the social determinants of health's impacts on prostate health in black men and educate stakeholders through educational seminars, conferences, and small groups sessions.

Do: Depict the gap in research and causes of the disproportionated cancer result in black men.

Study: Conduct reviews in to assess the effectiveness of the new approach.

Act: Implement the ABCE (a racial-gender-focus, black men, communication, dual-partnerships, and education approach to care in various setttings.

Long-term goal: Reducing the burden of prostate cancer in black men within the next 5 years.

Plan Phase

There is no standardized or population-based approach to prostate care in primary care, especially in high-risk populations like black men. Clinicians only incorporated the current guidelines recommendations about screening, and most of the time, that contribute to diagnosis in the advanced stage of prostate cancer in black men. In addition to following the guidelines, clinicians need to understand additional barriers to care, including early screening, treatment, and follow-up care. Thus, this study aims to develop an approach to care that will allow clinicians to use a systematic approach to care for men with prostate cancer and improve clinicians' knowledge, attitude, and practice of social determinants that impact prostate health in black men after the educational intervention.

Study Design

It is imperative to operationalize evidence by selecting a methodology that supports practice change to make a significant or tangible impact on patient care or community health outcomes. This project's purpose and PICO question indicate that an intervention was made, and a pre-and post-assessment of the clinicians' knowledge, attitude, and practice was employed to evaluate the intervention's outcomes. The methodology did not use a control group but included an assessment of the participants' baseline and post-intervention knowledge, behavior, attitude, perception, and communication skills scores; therefore, a quantitative methodology was used to conduct this study. The participants in this study were voluntary, not randomly selected from a group of clinicians practicing at First Mobile Medical Care and other colleagues; this study followed a quasi-experimental research design.

Settings

The project was conducted in a primary care clinic that offers a broad range of health services, primary and preventive care services, including diagnosis and treatment of health conditions, and support medical management of chronic diseases, such as diabetes and hypertension. The practice serves patients of different backgrounds and provides comprehensive adult, gerontology, and long-term care**.**

Participants

The participants in this study include healthcare clinicians who are providing direct patient care, including physicians (2), nurse practitioners (n=6), nurses (6), and clinical support (n= 5). During recruitment, seven (7) clinicians were at the practice, and only five (5) consented to participate in the study; thus, the co-investigator recruited other colleagues who supported the objectives of the QI project. Thirty-five (n=35) participants were recruited to conduct the study and 86 % (30) agreed to participate in the study, including physicians (n=9), NP (n=7), nurses (n=9), and clinical support (n=5). It was anticipated that 100 percent (n=30) would participate in the study; however, for some unknown reasons, 63 % (n=19) completed the pretest, and out of the nineteen, fourteen (n= 14) completed the posttest.

The co-investigator recruited participants at the clinical site for over two weeks and other healthcare providers and handed out printed fliers and emailed all potential participants with some background information regarding the QI project, including its purpose and objectives (Appendix A). Willing participants signed the agreement form to participate in the study after reviewing the study's objectives and were allowed to ask questions. Participants voluntarily signed up and provided their email to receive information about all upcoming activities related to the study. They received links for the consent form, pretest and posttest questionnaire, and invitation to in-person or zoom meeting for the educational intervention.

Participants received an email with detailed instructions on how the study will be conducted (Appendix C). The project conducted in 3 stages to measure clinicians' knowledge, attitudes, and practices, 1) sign the consent form and complete the pre-test questionnaire, 2) complete the educational program, 3) complete the post-test questionnaire two to three weeks to determine any changes in clinicians' attitudes, and practices. The questionnaires had questions to test the clinician's knowledge of the topic and current approach to caring for black men, especially those with a known family history of prostate cancer.

The educational program contains evidence-based information that will benefit clinicians in improving their practices when caring for black men. Data collected as directed by the University protocol and stored in a passworded computer. Data results conveyed by percentages to score pre and post-tests, and a mean score calculated for both tests. The mean score percentage for both tests were assessed and compared for improvement. The co-investigator was responsible to obtain consent, collect the surveys, analyze the data, and ensure the reliability and validity of the study’s result.

Instruments

Data Collection

Procedures

Primarily, the leading provider at the practice authorized the investigators to conduct the study at the practice site and warranted them access to give written consent, deliver pretest and posttest questionnaires, and provide the educational program to clinicians working at the site. The clinical site approval letters can be found in the Appendices. Once the site approval was obtained, Institutional Review Board (IRB) approval was sought from Florida International University (FIU) to use human subjects to complete the study. Appendix F includes the IRB approval letter from

FIU that was granted on July 28, 2022. All project activities were suspended until IRB approval confirmed that the project followed the ethical standards protecting human subjects. After the approval, the co-investigator began recruiting participants at the site and other colleagues during in-person meetings and provided them with the study flyers to sign up with their email addresses.

Within two weeks of obtaining approval, the participants received an email with clear instructions on the study's process and links for the consent form, pretest questionnaire, and zoom invitation for the educational training (Appendix C). In addition to the zoom presentation, the co-investigator conducted one-to-one sessions at the clinical site for three days due to the practice's workflow and participant's availability and sent out an email with the pretest questionnaire link to remind participants to complete the survey. Also, the participants had access to the project' PowerPoint presentation. They were able to contact the co-investigator for any concerns with the links or any pertinent questions related to the project via email or phone. Two weeks after the educational intervention, participants received an email with the posttest questionnaire and a follow-up email a week later to remind them to complete the survey (Appendix C).

A pre-post-test was explicitly created for this project (Appendix) that entailed a demographic survey and questions that were developed based on five (5) themes that support the project's objectives and assessment of clinicians' knowledge, attitude, and practice. The demographic survey was used to obtain a descriptive understanding of the participants that included general information, such as gender, age, race, role, educational level, and years of practice (table 1). Also, clinicians' perceptions of the social determinants of health, implications, and communication skills were measured. The data allow the investigators to identify how the educational intervention improved the participant's knowledge, attitude, and practice. The study result did not show a significant change, as many participants did not participate after signing up.

Moreover, the data were not evenly distrusted because fourteen (n= 14) of the nineteen (n=19) participants completed the posttest questionnaire. Overall, the participants gained knowledge of the SDoH impacts on black men, reflecting their knowledge scores in table 2.

Data Analysis

Data were obtained and analyzed from the pretest and posttest survey results with the use of Microsoft Excel. The data analysis began with a descriptive evaluation of the participant's demographic collected for the project. Demographic data were tabulated and compared, including frequency, mean, and standard deviation. Descriptive data analysis, including mean and standard deviation, were used to assess the pretest and posttest scores. It provides information about the directionality of the scores, for instance, if they increased or decreased. The small sample size (n=19 in the pretest and n= 14 in the posttest) created uneven data distribution. The Mann-Whitney U test was used to analyze the data. It is a nonparametric equivalent to the two-sample independent t-test that can be used to compare the differences between two independent samples when the sample distributions are not normally distributed, and the sample sizes are small (n <30) (Statology, 2018).

Data Management

The data will be kept confidential, and only the investigators and project team members will have access to the results. Data and results were saved to a password-protected document only accessible to the author. According to Qualtrics, all data are secured with enterprise-grade security features, including encryption, redundancy, and continuous network monitoring. All data collected for the project will be destroyed within five years, including the hard drive for the laptop professionally removed and wiped to ensure that no data from the project is accessible from this device.

Ethical Considerations and Protection of Human Subjects

All investigators in this QI project completed the Collaborative Institutional Training Initiative (CITI) program training in the protection of human research subjects. Institutional Review Board (IRB) approval was sought before the implementation of the QI project. These participants were informed that this QI project was voluntary, and that they have the right to withdraw from this project at any time without any consequences. The participants were encouraged to participate in the classroom-style lecture and pre- and post-intervention survey that contains the demographic and survey questions. The participants were informed that the educational seminar and completion of both surveys would take approximately 50 to 60 minutes.

The educational seminar was approximately 30 to 45 minutes, including time for questions, comments, and suggestions and each survey could be completed within 15 minutes. By using unique code identifiers, the participants remained confidential. The data collected from this QI project were kept private and protected by a laptop password and spyware which was kept in a locked file cabinet in the DNP candidate’s locked office. Only the members of the research team had access to the data and all data will be destroyed within 5 years of study completion. No identifying information data will be presented in publications and presentations. The DNP candidate was the only individual with password access to the survey site, Qualtrics. According to Qualtrics, survey data is encrypted using TLS (Transport Layer Security) cryptographic protocols.

Risks

There were no expected risks or harms to participants for participating in this quality improvement project. Risks are not greater than those faced in normal life while participating in a similar activity. The participants were notified on the consent form and surveyed that while this study is voluntary and there are no known alternatives other than not taking part in this study. There were also no costs associated with participation.

Benefits

There are various foreseeable benefits for participation, including improvement of SDoH knowledge and improvement in the skills in assessing SDoH in a high-risk population and promoting prostate health in black men due to the high incidence of prostate cancer and disproportionated cancer outcomes in that population. The presented information in this study could potentially improve PCC awareness and improve treatment outcomes in prostate health in Black men.

Results

This quality improvement project aimed to evaluate the impact or effectiveness of an educational intervention about the effects of SDoH on prostate health in black men in clinical practice. Specifically, analyzing whether an educational session will improve healthcare clinicians' knowledge, attitudes, and practice of SDoHs impacts on prostate health in black men. As a result, it will help improve healthcare clinicians' knowledge, attitudes, and practices. Additionally, this quality improvement project was to develop an evidence-based toolkit that supports a targeted or patient-centered care approach to care promoting prostate health in black men. Thirty (n=30) potential participants were invited and agreed to participate in the study, nineteen (n=19) completed the pre-intervention survey, and fourteen (n=14) of the nineteen attended the educational session and completed the post-intervention survey. The sample size (n<30) was smaller than expected, and the data were not evenly distributed since the pretest and posttest samples differed. The Mann-Whitney U test was used to interpret the results. It is a non-parametric counterpart to the T-test for independent variables commonly used to interpret data from two (2) independent random samples that do not have a fulfilled distribution curve (Statology, 2018).

Demographics

Pre-intervention Sample

Table 1 illustrates the participants' demographic data from the pretest survey (n=19). Of the nineteen participants, 6 (31.58%) participants were male, and 14 (70.00 %) were female; 9 (45.00 %) were between 18-30 years old, 5 (26.32%) were 30-45 years old, and 6 (31.58%) were over 45 years old. Of the nineteen participants, 2 (10.53%) identified as Hispanic/Latino, 17 (85.00 %) as Black or African American, and 1 (5.26%) did not mention his or her ethnicity. Participants had a different level of educational background and years of practice. The sample consisted of 2 physicians (10.83%), 6 (31.58%) nurse practitioners, 6 (31.58%) nurses, and 5 (26.32%) clinical support; and the clinical practice experience ranged from less than one year to over ten years.

Remarkably, 7 (35.00%) had less than one year of experience, 2 (10.00 %) had 1-2 years' experience, 6 (35.00%) had 2-5 years' experience, 4 (20.00%) had 5-10 years' experience, and 1 (5.00%) had greater than ten years' experience. All participants received the links to the surveys and a link to the educational interventions. Individuals who agreed to be part of the project during recruitment and provided their email addresses to the co-investigator. 19 out of 30 (66.7%) participants pretested the questionnaire and educational intervention, and 14 (46.7%) completed the post-test questionnaire.

Post-intervention Sample

The data in both pre-test and post-test were different as participants changed their demographics; some did not complete the post-test questionnaire, and some did not receive a response to some of the demographic questions. Table 1. Illustrates the posttest demographic responses (n=14) out of the 19 participants who completed the pre-test and educational intervention completed the post-test questionnaire for unknown reasons. Of the fourteen participants, 3 (21.4%) were male, 9 (64.23%), and 2 (14.23%) did not identify their gender; 2 (14%) were between 18-30 years old, 10 (71%) were between 30-45 years old, and 2 (14%) were over 45 years old. 2 (14.28%) identified as Hispanic/Latino, 11 (75.5%) identified as black/African American, and 1 (7.14%) identified as other but did not mention his or her ethnic background.

Only thirteen identified their role in clinical practice, 1 (8%) physician, 4 (31%) NP, 4 (31%) nurses, and 4 (31%) clinical support. Their year of clinical differ and range from less than 1 to 10 years; 2 (15%) had less than one year experience, 2 (15%) had 1-2 years of experience, 5 (38%) had 2-5 years of experience, 2 (15%) had 5-10 years of experience, and 2 (15%) had greater than ten years of experience. The educational level is roughly the same, but the sample size is significantly reduced. For instance, 1 (8%) had some college degree, 2 (15%) had an associate degree, 5(38%) had a baccalaureate degree, 4 (31%) had a master's degree, and 1 (8%) had a professional degree, specifically an MD or DO.

Table 1 Demographic Data

Table 1

Pre-intervention and Post-intervention Participants Demographic Data

	Pre-intervention Count (n=19)		Post-intervention Count (n=14)	
Gender				
Male	6	31.58%	3	21.4%
Female	13	68.42%	9	64.23%%
Non-binary/third party	0	0%	0	0%
Prefer not to say	0	0%	2	14.23%

Age				
18-30 years old	8	42.11%	2	14 %
30-45 years old	5	26.32%	10	71%
>45 years old	6	31.58%	2	14%
Prefer not to say	0	0%	0	0%
Ethnicity				
Hispanic	2	10.53%	1	7.14%
Caucasian	0	0%	0	0%
Black/African American	16	84.21%	11	78.5%
Asian	0	0%	0	0%
Others	1	5.26%	1	7.14%
Prefer not to say	0	0%	1	7.14%
Role at the Facility				
Physician	2	10.53%	1	8%
Nurse Practitioner	6	31.58%	4	31%
Physician assistant	0	0%	0	0%
Nurses	6	31.58%	4	31%
Clinical support	5	26.32%	4	31%
Years of practice				
0.-11 months	6	31.58%	2	15%
1-2 years	2	10.53%	2	15%
2-5 years	6	31.58%	5	38%
5-10 years	4	21.05%	2	15%
>10 years	1	5.26%	2	15%
Educational Level				
Some college	2	11.11%	1	8%
Associate degree (2 years)	2	11.11%	2	15%
BA/BS (4 years)	5	27.78%	5	38%
Master’s degree	5	27.78%	4	31%
Doctoral degree	2	11.11%	0	0%
Professional degree (MD, DO)	2	11.11%	1	8%

Pretest and Posttest Intervention Knowledge Results

Knowledge

The percentage of participants' responses to the questions about their knowledge of social determinants of health and prostate cancer prevalence and outcomes in black men is illustrated in table 2.1. Understanding the social determinants of health and health behaviors in certain racial or social groups will allow clinicians to earn their trust and develop educational and health plans that support patients' health needs.

Table 2.1 Knowledge Scores

Table 2.1

Pretest and Posttest Knowledge Scores

Knowledge Questions	**Pre-test (n/N) ***	**Post-test (n/N) ***	**% Of change**
The racial group with the highest incidence of prostate cancer. a) Black men * b) White men c) Hispanic d) Other	17/19 (89.47%)	11/13 (84.61%)	4.49%↓
The incidence rate of prostate cancer in black men. a) 1 out of 8* b) 3 out of 10 c) 4 out of 8 d) 7 out of	7/19 (36.84%)	7/13 (53.84%)	45.95%↑
Factors that contribute to the high incidence of prostate cancer in black men (select all that apply):			

a) Fewer clinical trial* b) Delay in disease detection* c) Access to care* d) Socio-economic factors*	a) 7/17 (41.18%) b) 13/17 (76.47%) c) 10/17(58.82%) d) 9/17 (52.94%)	a) 5/14 (36%) b) 11/14 (79%) c) 9/14 (64%) d) 10/14 (71%)	12.20%↓ 3.94%↑ 8.47%↑ 33.96%↑
Definition of social determinants of health: a) Conditions in individuals' environment that affect health outcomes* b) Conditions that promote health and wellness c) Medical factors that affect health d) Policies that affect health care deliver	16/19 (84.21%)	13/14 (92.9%)	10.71%↑
Impacts of health disparities on prostate cancer in black men (select all that apply): a) Disproportionate health outcomes* b) High incidence of prostate cancer* c) Quality care delivery d) Health promotion and disease prevention	a) 10/19 (52.63%) b) 12/19 (63.16%) c) 11/19 (57.89%) d) 12/19 (63.16%)	a) 10/13 (77%) b) 6/13 (62%) c) 8/13 (31%) d) 4/13(46%)	48.08%↑ 26.98%↓ 6.90%↑ 50.59↓

Absolute risk factors for prostate cancer in black men: select all that apply a) African ancestry* b) Age* c) Gender* d) Environmental factors	a) 17/19 (89.47%) b) 17/19 (89.47%) c) 14/19 (73.68%) d) 5/19 (26.32%)	a) 10/12 (83%) b) 9/12 (75%) c) 9/12 (75%) d) 5/12 (42%)	6.74↓ 15.73%↓ 1.35%↑ 61.52%↑
The standard screening tools for prostate cancer: a) Digital rectal examination (DRE)* b) Ultrasound c) Prostate specific antigen (PSA)* d) Prostate biopsy	a) 15/19 (78.94%) b) 6/19 (31.57%) c) 18/19 (94.74%) d) 7/19 (38.84%)	a) 5/13 (38%) b) 1/13 (8%) c) 7/13 (54%) d) 0/13 (0%)	51.90%↓ 75%↓ 43.16%↓ 100%↓

Note: *correct answer, % of change= percent of change, n/N= cell-size/Sample size, ↑= Increase in percent change, ↓= Decrease in percent change

Knowledge Result Interpretation

As illustrated in table 2.1, nineteen (n=19) participants responded to the pre-intervention and roughly fourteen (n=14) to the post-intervention knowledge questionnaires. Overall, the result did not show a significant change in the knowledge score, as many participants did not complete the post-test and did not answer all the questions as directed. However, some scores were changed in areas that were emphasized during the presentation. For instance, a 45.95% increase in clinicians' knowledge about the incidence of prostate cancer in black men and a 10.71% increase in the knowledge of social determinants of health. Also, there is an increase in the knowledge score about the impact of health disparities on prostate cancer in black men. A 48.08% increased change noted in the knowledge of disproportionated health outcomes in prostate cancer in black men.

Inferential Data

Although there were some increases in the percent change in the pre-post-intervention scores, the mean pre- and post-intervention knowledge scores did not show a significant improvement (as anticipated). Thus, the data analysis provided regarding these scores does not indicate if the change that occurred was statistically significant.

Mann-Whitney U test Knowledge Result Interpretation

Mann-Whitney U test was conducted to evaluate whether there is a significant difference between healthcare clinicians' mean knowledge of social determinants of health and poor prostate cancer outcomes in black men in the pre-and post-intervention scores. The result of the two-tailed hypothesis is based on a significant level of 0.05 and a mean rank score for each current question. The test statistic or U is 84.5, P-value 0.55, and the critical value is 55 based on the Mann-Whitney U table. Thus, there is no statistically significant evidence of a difference in the knowledge mean score at = 0.05 to indicate that the educational intervention improves the clinician's knowledge score, as the test statistic was significantly greater than the critical value. Table 2.2 illustrates the result or mean rank score of appropriate answers in the pre-and post-test intervention, and the bar graph is presented in figure 3.

Table 2.2 Mann-Whitney U test knowledge Result

Table 2.2

Mann-Whitney U Test for the Difference Between Pre-Intervention and Post-Intervention Knowledge

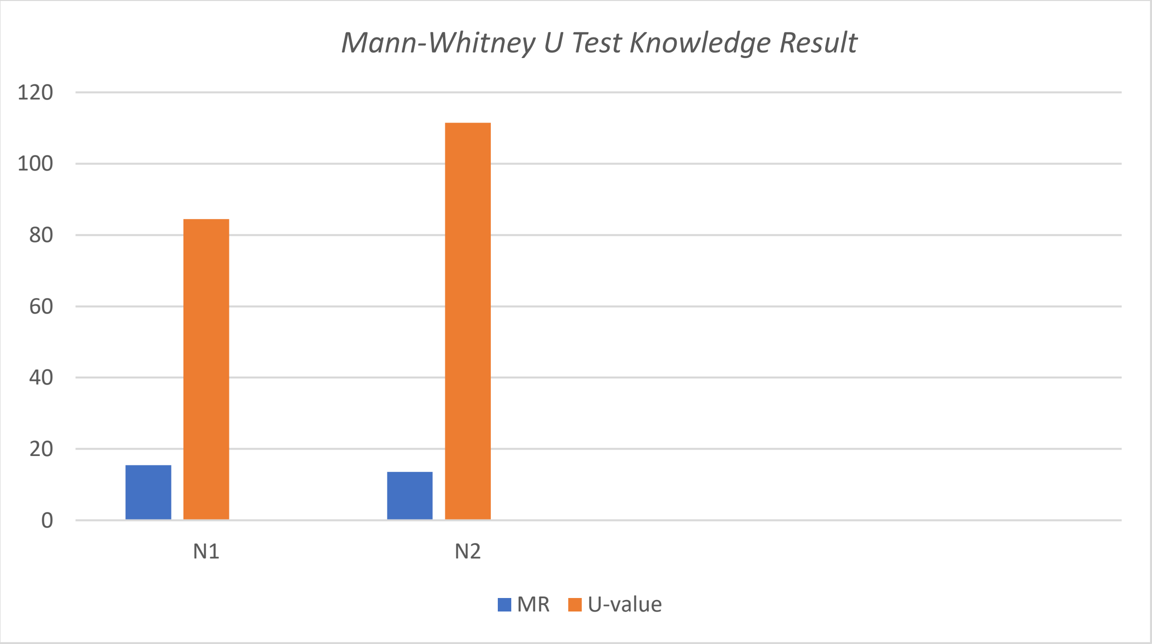
Pretest	**Posttest**					
Mean Rank	Mean Rank	U-value	CV	SD	Z-score	P-value
15.46	13.54	84.5	55	21.76	0.60	0.55

Note: CV= critical value, U-value=test statistic, SD= standard deviation

Table 2.2 illustrates the Mann-Whitney U test findings for the difference in the knowledge scores in the pretest and posttest. It enables the contrast of the disparity between the two random samples. The variables were independent, continuous, or ordinal and roughly the same. Thus, the data were not evenly distributed since this test is non-parametric (Statology, 2018). The pretest and posttest had the same number of questions; however, not all participants completed both questionnaires and answered all the questions as directed. The table contains the mean rank score for both surveys, median, and standard deviation. As indicated in table 2.2, the mean rank score was 15.46 and 13.54 in the posttest, indicating that the pretest values were further from the average posttest values. However, the standard for the posttest survey was more significant than the pretest average, which indicates the group with the higher knowledge of SDoH impacts on prostate health in black men.

Figure 3 Mann-Whitney U test Knowledge Result in a Bar Graph

Mann-Whitney U Test Bar Graph for the Pre- and Post-Intervention Knowledge Result



Note: N1= sample 1, N2= sample 2, MR= Mean of Ranks, U-value= test statistic

Pretest and Posttest Intervention Behavior Results

Behavior

The percentage of participants' responses to each question about healthcare clinicians' behavior regarding the social determinants of health and prostate cancer outcomes are presented in table 3.1. The findings indicated that understanding the social determinants of health and health disparities could influence healthcare clinicians' behavior in promoting patient-centered care. For instance, integrating a targeted approach to care for black men will allow clinicians to identify the barriers to care and understand black health behaviors necessary for delivering quality and holistic care.

Table 3.1 Behavior Scores

Table 3.1

Pretest and Posttest Behavior Scores

Behavior Questions	Pre-test (n/N) *	Post-test (n/N) *	% Change
Please indicate whether you agree or disagree with the following statements: For the following statements: a. I am up to date with the latest screening guidelines for prostate cancer.	SA 5/19 (26.32%) SoA 5/19 (26.32%) Ne 5/19 (26.32%) SoD 2/19 (10.52%) SD 2/19 (10.53%)	SA 3/13 (23%) SoA 6/13 (46%) Ne 1/13 (8%) SoD 2/13 (15%) SD 1/13 (8%)	11.54%↓ 76.92%↑ 69.23%↑ 36.36%↑ 27.27%↓
b. Black men have the highest incidence of prostate cancer and poor prostate cancer outcomes.	SA 9/19 (47.37&) SoA 9/19 (47.37%) Ne 1/19 (5.26%) SoD 0 (0%) SD 0 (0%)	SA 7/13 (54%) SoA 4/13 (31%) Ne 0 (0%) SoD 1/13 (8%) SD 1/13 (8%)	12.77%↑ 34.04%↓ 100%↓ 8%↑ 8%↑ 12.66%↓

c. Black population are highly affected by social determinants of health.	SA 15/19 (78.95%) SoA 2/19 (10.53) Ne 2/19 (10.53%) SoD 0 (0%) SD 0 (0%)	SA 9/13 (69%) SoA 2/13 (15%) Ne 0 (0%) SoD 1/13 (8%) SD 1/13 (8%)	36.36%↑ 10.53%↓ 8%↓ 8%↑
d. Social determinants of health impacts prostate cancer outcomes in black men.	SA 12/19 (63.16%) SoA 5/19 (26.32%) Ne (10.53%) SoD 0 (0%) SD 0 (0%)	SA 8/13 (62%) SoA 3/13 (23%) Ne 0 (0%) SoD 1/13 (8%) SD 1/13 (8%)	1.59%↓ 11.54%↓ 10.53%↓ 8%↑ 8%↑
e. I should provide care specific to the individuals rather than follow only current guidelines	SA 7/19 (36.84%) SoA 8/19 (42.11%) Ne 3/19 (15.79%) SoD 1/19 (5.26%) SD 0 (0%)	SA 2/13 (15%) SoA 7/13 (54%) Ne 2/13 (15%) SoD 2/13 (15%) SD 0 (0%)	59.46%↓ 28.57%↑ 6.25%↓ 200%↑ 0%
Your approach to prostate cancer screening in black men: a) Intuition b) Shared decision making * c) Analytical decision making d) Vote decision making	10/17 (58.82%)	11/13 (85%)	42.37%↑
How confident are you in your ability to perform the following? a) Include individualized care in practice.	C 12/18 (66.67%) SoC 6/18 (33.34%) NeC 0 (0%) NC 0 (0%)	C 5/13 (38%) SoC 4/13 (31%) NeC 0 (0%) NC 4 (31%)	43.28%↓ 6.06%↓ 0% 31%↓
e) Incorporate a racial-gendered specific approach to care	C 8/18 (44.4%) SoC 10/18 (55.6%) NeC 0 NC 0 (0%)	C 5/13 (38%) SoC 4/13 (31%) NeC 1/13 (8%) NC 3/13 (23%)	13.63%↓ 44.64%↓ 8%↑ 23%↓

. b) Work in partnership with patient	C 14/18 (77.78%) SoC 4/18 (22.23%) NeC 0 nC 0 (0%)	C 6/13 (46%) SoC 4/13 (31%) NeC 0 (0%) NC 3 (23%)	41.03%↓ 0% 0% 23%↑
c) Perform digital rectal exam	C 9/18 (50%) SoC 9/18 (50%) NeC 0 NC 0 (0%)	C 3/13 (23%) SoC 2/13 (15%) NeC 5 (38%) NC 3/13 (23%)	54%↓ 70%↓ 38%↑ 23%↑
d) Counsel patients about prostate health	C 10/18 (55.56%) SoC 8/18 (44.45%) NeC 0 (0%) NC 0 (0%)	C 3/13 (23%) SoC 7/13 (54%) NeC 1/13 (8%) NC 2/13 (15%)	58.93%↑ 22.73%↑ 8%↑ 15%↓

Note: *correct answer, % of change= percent of change, n/N= cell-size/Sample size, ↑= Increase in percent change, ↓= Decrease in percent change, SA= strongly agree, SoA=somewhat agree, Ne=neither agree nor disagree, SoD= somewhat disagree, SD =strongly disagree, C= confident, SoC = somewhat confident, Neither confident nor not confident, NC= not confident.

Behavior Result Interpretation

The questions in the behavior section were formatted to allow investigators to measure how clinicians' approach to caring for a population greatly affected by health disparities and their confidence in implementing new approaches to care. As illustrated in table 3.1, roughly nineteen (n=19) responded to the pre-intervention and thirteen (n=13) to the post-intervention behavior questionnaire. Overall, the result did not show a significant change in the behavior score, as many participants did not complete the post-test and did not answer all the questions as directed. However, there is a 42.37% increased change in promoting shared decision-making in caring for black men as many participants became more aware of the high incidence of prostate cancer and the impacts of the social determinants in black men. For instance, 28.57% increased change in promoting care specific to the individual's health as opposed to providing generalized care.

Inferential Data

Although there were some increases in the percent change in the pre-post-intervention scores, the mean pre- and post-intervention behavior scores did not show a significant improvement (as anticipated). Thus, the data analysis provided regarding these scores does not indicate if the change that occurred was statistically significant.

Mann-Whitney U Test Behavior Result Interpretation

A Mann-Whitney U test was conducted to evaluate whether there is a significant difference between healthcare clinicians' behavior toward social determinants of health and poor prostate cancer outcomes in black men pre-and post-intervention. The result of a two-tailed hypothesis is based on a significant level of 0.05 and the mean rank score for each current question. The test statistic or U is 164, P-value 0.16, and the critical value is 134 based on the Mann-Whitney U table. This finding suggests that there is no significant difference in healthcare clinicians' mean of behavior in pre- and post-interventions as the test statistic was significantly greater than the critical value. Table (3.2) illustrates the result or mean rank score of appropriate answers in the pre-and post-test intervention, and the bar graph is presented in figure 4.

Table 3.2 Mann-Whitney U test Behavior Result

Table 3.2

Mann-Whitney U Test for the Difference Between Pre-Intervention and Post-Intervention Behavior

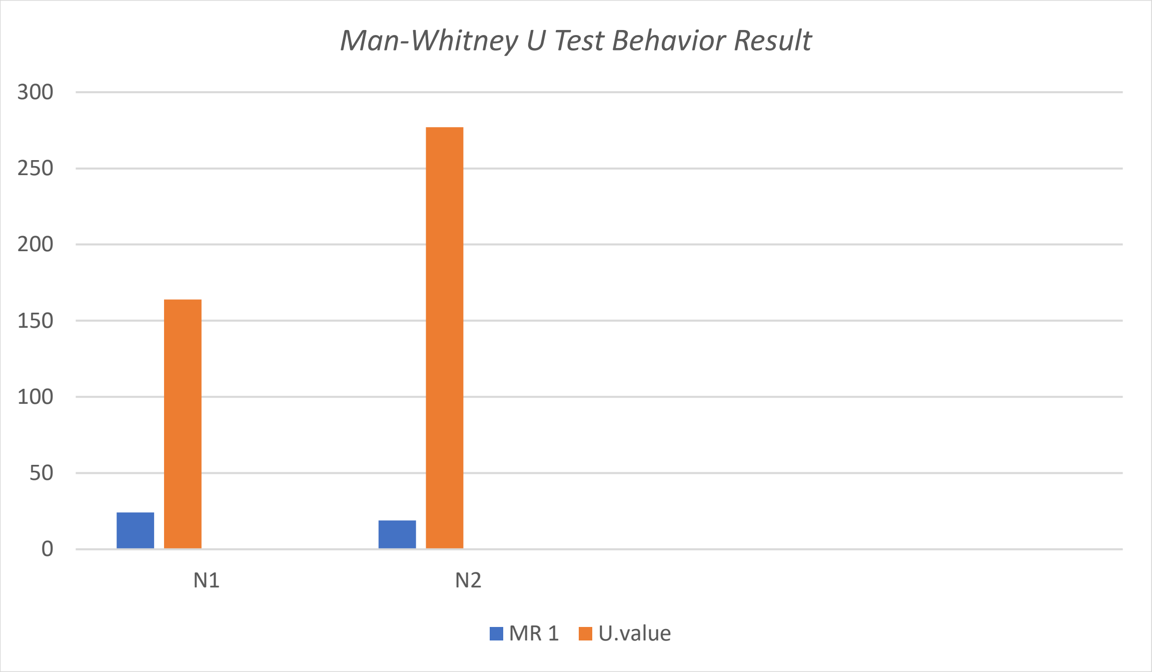
Pretest	**Posttest**					
Mean Rank	Mean Rank	U-value	CV	SD	Z-score	P-value
24.19	18.81	164	134	39.75	1.41	0.16

Note: CV= critical value, U-value=test statistic, SD= standard deviation

Table 3.2 illustrates the Mann-Whitney U test findings for the difference in the behavior scores in the pretest and posttest. It enables the contrast of the disparity between the two random samples. The variables were independent, continuous, or ordinal and roughly the same. Thus, the data were not evenly distributed since this test is non-parametric (Statology, 2018). The pretest and posttest had the same number of questions; however, not all participants completed both questionnaires and answered all the questions as directed. The table contains the mean rank score for both surveys, median, and standard deviation. As indicated in table 3.2, the mean rank score was 24.19 and 18.81 in the posttest, indicating that the pretest values were further from the average posttest values. However, the standard deviation for the posttest survey was more significant than the pretest average, indicating the group with a change in behavior toward promoting patient-centered care and shared decisions in care.

Figure 4 Mann-Whiney U test Behavior Result in a Bar Graph

Mann-Whitney U Test Bar Graph for the Pre- and Post-Intervention Behavior Result



Note: N1= sample 1, N2= sample 2, MR= Mean of Ranks, U-value= test statistic

Pretest and Posttest Intervention Attitude Results

Attitude

The percentage of participants' responses to each question about healthcare clinicians' attitude toward the social determinants of health and prostate cancer outcomes are presented in table 4.1. The findings indicated that understanding the social determinants of health and health disparities could influence healthcare clinicians' attitude in working with stakeholders to promote community health and health outcomes of social or racial groups severely affected by health disparities.

Table 4.1 Attitude scores

Table 4.1

Pretest and Posttest Attitude Scores

Attitude Questions	**Pretest (n/N) ***	**Posttest (n/N) ***	**% Change**
Will you be open to incorporating a new approach in care to reduce the incidence of prostate cancer and poor outcomes in black men?			
a) Yes*	Yes 15/19 (78.95)	Yes 11/13 (85%)	2.41↑
b) No	No 0 (0%)	No 1/13 (8%)	8%↑
c) Maybe	Maybe 4/19 (21.5%)	Maybe 1/13 (8%)	61.90%↓
As a clinician, is it your responsibility to find ways to reduce the impact of social determinants of health in specific racial or social groups?			
a) Yes*	Yes 19/19 (100%)	Yes 13/13 (100%)	0%
b) No	No 0 (0%)	No 0 (0%)	
c) Maybe	Maybe 0 0%)	Maybe 0 0%)	
For those uninsured, how do you help them in getting preventive care?			
a) Allocate public health resources	a) 2/19 (10.53%)	a) 1/13 (7.69%)	27.27%↓
b) Help apply for low-cost healthcare program	b) 2/19 (10/53%)	b) 1/13 (7.69%)	27.27%↓
c) Self-pay	c) 3/19 (15.79%)	c) 0 (0%)	15.79%↓
d) Refer to social services	d) 2/19 (10.53%)	d) 2/13 (15.38%)	6.25%↓
e) Patient education	e) 3/19 (15.19%)	e) 3/13 (23.07%)	43.75%↑
f) Refer to free clinic	f) 1/19 (5.26%)	f) 3/13 (23.07%)	3.39%↑

Which population (s) will you screen earlier for prostate cancer? Select all that apply:			
a) Black men	a) 17/18 (89.47%)	a) 11/12 (85%)	2.13%↓
b) Black men with first degree relative prostate cancer.	b) 13/18 (68.42%)	b) 7/12 (54%)	19.44%↓
c) Hispanic men	c) 4/18 (21.05%)	c) 2/12 (15%)	22.72↓
d) White Men	d) 1/18 (5.26%)	d) 3/12 (23%)	3.37%↑
e) Other, specify: ____	e) 0 (0%)	e) 0 (0%)	0%
How often do you refer your patients to a urologist?			
a) Never	a) 3/18 (16.67%)	a) 1/13 (8%)	52.94%↓
b) Sometimes	b) 7/18 (38.89%)	b) 6/13 (46%)	17.94%↑
c) About half of the time	c) 3/18 (16.67%)	c) 1/13 (8%)	52.94%↓
d) Most of the time	d) 2/18 (11.11%)	d) 3/13 (23%)	>100%↑
e) Always	e) 3/18 (16.67%)	e) 2/13 (15%)	11.76%↓
How often do you discuss prostate health with your patients?			
a) Never	a) 2/17 (11.76%)	a) 0 (0%)	11.76%↓
b) Sometimes	b) 8/17 (47.06%)	b) 3/13 (23%)	51.06%↓
c) About half of the time	c) 2/17 (11.76%)	c) 1/13 (8%)	33.33%↓
d) Most of the time	d) 2/17 (11.76%)	d) 6/13 (46%)	>100↑
e) Always	e) 3/17 (17.65%)	e) 3/13 (23%)	27.78%↑

Attitude Result Interpretation

The questions in the attitude section were formatted to allow investigators to measure clinicians' willingness to implement a new model in care and to allow them to identify one approach in care that should be changed to improve practice. As illustrated in table 4.1, roughly nineteen (n=19) responded to the pre-intervention and thirteen (n=13) to the post-intervention behavior questionnaire. Overall, the result did not show a significant change in the attitude score, as many participants did not complete the post-test and did not answer all the questions as directed. However, there was a 2.41% increase in change in identifying the need to implement a new approach to care and 43.75 % in promoting patient-centered education in practice to promote health outcomes in that population. For instance, there is a 27.78% increased change in attitude toward clinicians' willingness to discuss prostate health and about 100% toward referral to a specialist if needed.

Inferential Data

Although there were some increases in the percent change in the pre-post-intervention scores, the mean pre- and post-intervention attitude scores did not show a significant improvement (as anticipated). Thus, the data analysis provided regarding these scores does not indicate if the change that occurred was statistically significant.

Mann-Whitney U Test Attitude Result Interpretation

A Mann-Whitney U test was conducted to evaluate whether there is a significant difference between healthcare clinicians' mean attitude toward social determinants of health and poor prostate cancer outcomes in black men in the pre-and post-intervention scores. The result of the two-tailed hypothesis is based on a significant level of 0.05 and the mean rank score for each current question. The test statistic or U is 82.5, P-value 0.49, and the critical value is 55 based on the Mann-Whitney U table. Table 4.2 illustrates the result or mean rank score of appropriate answers in the pre-and post-test intervention, and a bar graph is presented in figure 5. This finding suggests no significant difference in healthcare clinicians' mean attitude pre- and post-interventions as the test statistic was significantly greater than the critical value.

Table 4.2 Mann-Whitney U Test Attitude Result

Table 4.2

Mann-Whitney U Test for the Difference Between Pre-Intervention and Post-Intervention Attitude

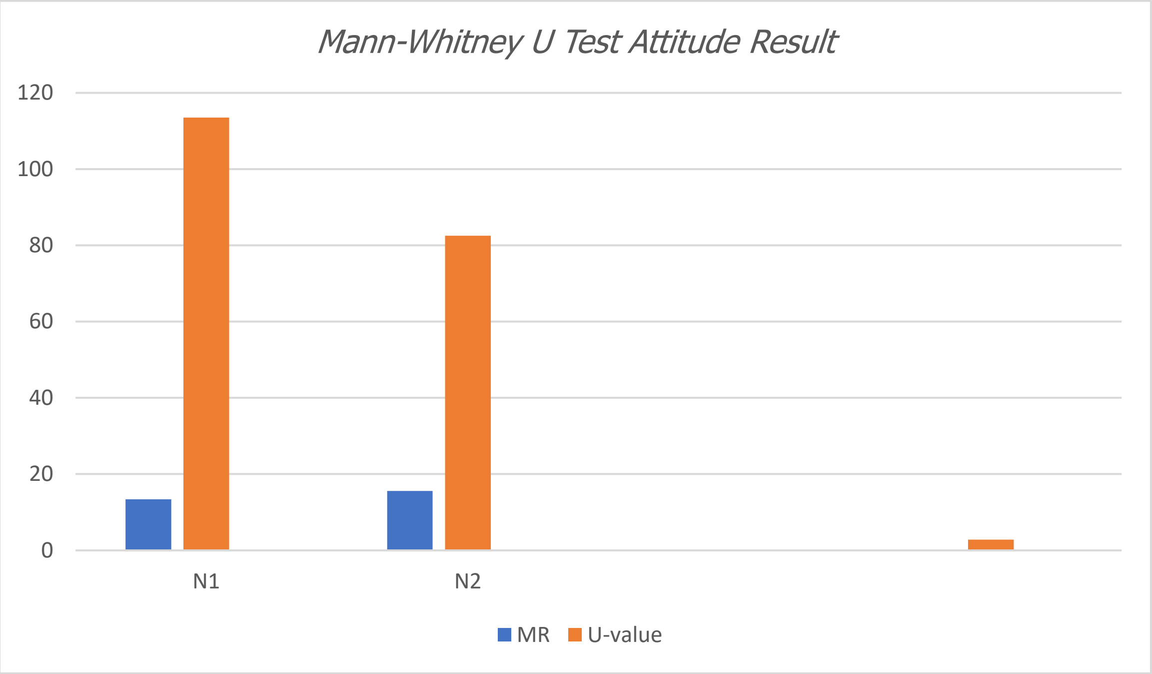
Pretest	**Posttest**					
Mean Rank	Mean Rank	U-value	CV	SD	Z-score	P-value
13.39	15.61	82.5	55	21.76	-0.69	0.49

Note: CV= critical value, U-value=test statistic, SD= standard deviation

Table 4.2 illustrates the Mann-Whitney U test findings for the difference in the attitude scores in the pretest and posttest. It enables the contrast of the disparity between the two random samples. The variables were independent, continuous, or ordinal and roughly the same. Thus, the data were not evenly distributed since this test is non-parametric (Statology, 2018). The pretest and posttest had the same number of questions; however, not all participants completed both questionnaires and answered all the questions as directed. The table contains the mean rank score for both surveys, median, and standard deviation. As indicated in table 4.2, the mean rank score was 13.39 and 15.61 in the posttest, indicating that the pretest values were further from the average posttest values and depict the group with a more remarkable change in attitude toward implementing new approaches to care to enable them to provide quality and patient-centered care in practice. Also, many participants identify patient-centered education as a means to improve health outcomes in black because health literacy plays a vital role in individuals' health behavior and willingness to seek medical care.

Figure 5 Mann-Whitney U test Attitude Result in a Bar Graph

Mann-Whitney U Test Bar Graph for the Pre- and Post-Intervention Attitude Result



Note: N1= sample 1, N2= sample 2, MR= Mean of Ranks, U-value= test statistic

Pretest and Posttest Intervention Perception Results

Perception

This section focused on healthcare clinicians' perception of patient-centered care, an approach to care to promote quality and equitable healthcare delivery. Results of the participants' percentage responses to each perception question are illustrated in table 5.1. The findings indicated that a patient-centered care approach is imperative to health promotion and disease prevention as it focuses on addressing specific population health needs.

Table 5.1 Perception Scores

Table 5.1
Pretest and Posttest Perception Scores

Perception Questions	Pretest (n/N) *	Post-test (n/N) *	% Change
Indicate whether you agree or disagree with the following statements: a) I seek clinical guidelines to aid in patient care.	SD 4/17 (23.53%) SoD 1/17 (5.88%) Ne 3/17 (17.65%) SoA 1/17 (5.88%) SA 8/17 (47.06%)	SD 0 (0%) SoD 2/13 (15%) Ne 1/13 (8%) SoA 5/13 (38%) SA 5/13 (38%)	0% >100%↑ 55.55%↓ >100%↑ 19.15%↓
b) I evaluate the patient's health behaviors and assess risk of disease in each encounter.	SD 1/11 (9.09%) SoD 2/11(18.18%) Ne 2/11 (18.18%) SoA 3/11 (27.27%) SA 3/11 (27.27%)	SD 1/13 (8%) SoD 1/13 (8%) Ne 0 (0%) SoA 4/13 (31%) SA 7/13 (54%)	11.11%↓ 55.55%↓ 18.18↓ 11.11%↑ 100%↑
c) I work in collaboration with other providers to ensure the delivery of timely and effective care to patients.	SD 1/10 (10%) SoD 0 (0%) Ne 1/10 (10%) SoA 3/10 (305) SA 5/10 (50%)	SD 1/13 (8%) SoD 1/13 (8%) Ne 0 (0%) SoA 3/13 (23%) SA 8/13 (62%)	100%↓ 8%↑ 10%↓ 23.33%↓ 24%↑
d) I incorporate a patient-centered-care approach in practice.	SD 1/10 (10%) SoD 0 (0%) Ne 0 (0%) SoA 2/10 (20%) SA 7/10 (70%)	SD 1/13 (8%) SoD 1/13 (8%) Ne 0 (0%) SoA 2/13 (15%) SA 9/13 (69%)	20%↓ 8%↑ 0% 25%↓ 1.43%↓
e) Often, guidelines do not fit into specific	SD 0 (0%) SoD 1/10 (10%) Ne 3/10 (30%) SoA 6/10 (60%)	SD 2/13 (15%) SoD 1/13 (8%) Ne 1/13 (8%) SoA 5/13 (38%)	15%↑ 20%↓ 73.33%↓ 36.67%↓

patient's conditions.	SA 0 (0%)	SA 4/13 (31%)	31%↑
In a high-risk population, are you satisfied with the screening recommendations for prostate cancer?	S 4/18 (22.22%) sS 6/18 (33.33%) Ne 7/18 (38.89%) uS 1/18 (5.56%)	S 1/13 (8%) sS 7/13 (82%) Ne 5/13 (38%) uS 0 (0%)	63.63%↓ 63.64%↑ 2.56%↓ 100%↓
What would you change in clinical practice to improve black men's health and prostate cancer outcomes? a) Improve practice guidelines b) Insurance plan c) Promote early screening d) Patient education e) Nothing	a) 2/18 (11.11%) b) 1/18 (5.56%) c) 4/18 (22.22%) d) 5/18 (27.78%) e) 3/18 (16.67%)	a) 1/13 (7.69%) b) 0 (0%) c) 2/13 (15.38%) d) 5/13 (15.38%) e) 0 (0%)	27.27%↓ 100%↓ 31.82%↓ 35.71%↑ 100%↓

Note: SA= strongly agree, SoA=somewhat agree, Ne=neither agree nor disagree, SoD= somewhat disagree, S= satisfied, sS= somewhat satisfied, Ne= neither satisfied nor dissatisfied, uS= unsatisfied.

Perception Result Interpretation

The questions in the perception section were formatted to allow investigators to measure clinicians' perception of the current prostate cancer screening guidelines and care partnerships. As illustrated in table 5.1, roughly eighteen (n=18) responded to the pre-intervention and thirteen (n=13) to the post-intervention perception questionnaire. Overall, the result did not show a significant change in the perception score, as many participants did not complete the post-test and did not answer all the questions as directed. However, there were some percent increased changes in the participants' perception of evaluating individuals' health behavior (about 100%↑), following clinical guidelines that meet individuals' health needs and support patients' health status and preference (about 31%↑), and improving collaborative approach in care (24%↑).

Inferential Data

Although there were some increases in the percent change in the pre-post-intervention scores, the mean pre- and post-intervention perceptions scores did not show a significant improvement (as anticipated). Thus, the data analysis provided regarding these scores does not indicate if the change that occurred was statistically significant.

Mann-Whitney U Test Perception Result Interpretation

A Mann-Whitney U test was conducted to evaluate whether there is a significant difference between healthcare clinicians' mean perception of patient-centered care in the pre-and post-intervention scores. Table 5.1 illustrates the result or mean rank score of appropriate answers in the pre-and post-test intervention, and a bar graph is presented in figure 6. The result of the two-tailed hypothesis is based on a significant level of 0.05 and the mean rank score for each current question. The test statistic or U is 87.5, P-value 0.13, and the critical value is 75 based on the Mann-Whitney U table. This finding suggests that there is no significant difference in healthcare clinicians' mean rank of perceptions of patient-centered care in pre- and post-interventions, as the test statistic was significantly greater than the critical value.

Table 5.2 Mann-Whitney U Test Perception Result

Table 5.2

Mann-Whitney U Test for the Difference Between Pre-Intervention and Post-Intervention Perception

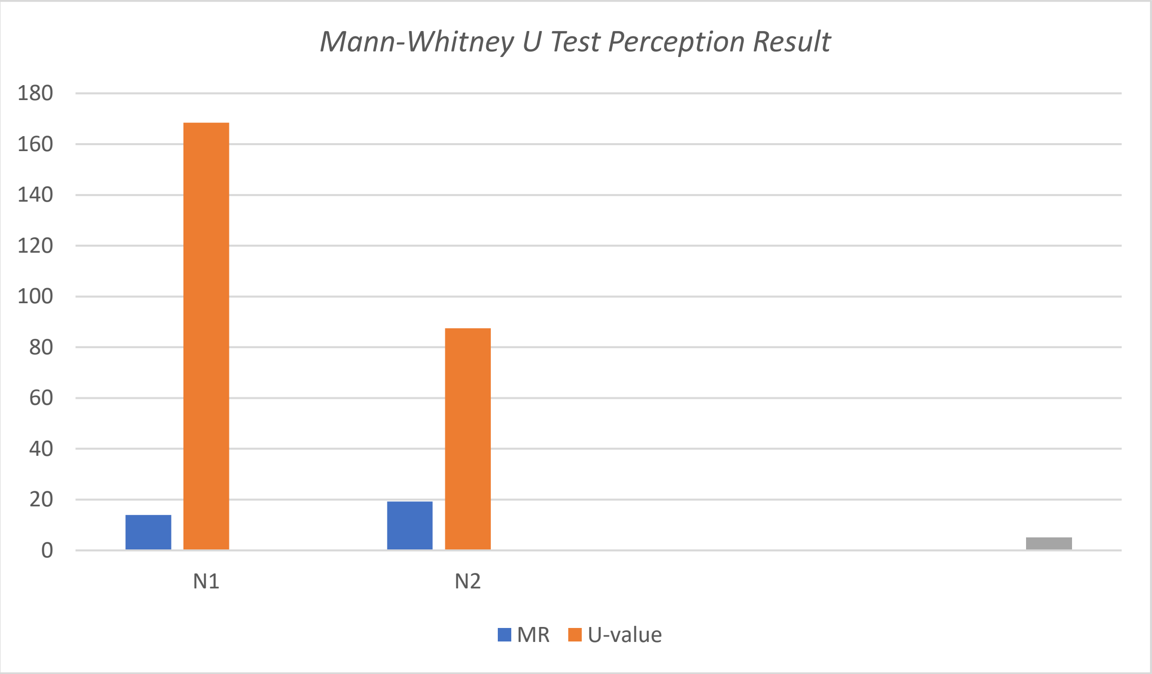
Pretest	**Posttest**					
Mean Rank	Mean Rank	U-value	CV	SD	Z-score	P-value
13.97	19.03	87.5	75	26.53	-1.50	0.13

Note: CV= critical value, U-value=test statistic, SD= standard deviation

Table 5.2 illustrates the Mann-Whitney U test findings for the difference in the perception scores in the pretest and posttest. It enables the contrast of the disparity between the two random samples. The variables were independent, continuous, or ordinal and roughly the same. Thus, the data were not evenly distributed since this test is non-parametric (Statology, 2018). The pretest and posttest had the same number of questions; however, not all participants completed both questionnaires and answered all the questions as directed. The table contains the mean rank score for both surveys, median, and standard deviation. As indicated in table 5.2, the mean rank score was 13.97 and 19.03 in the posttest, indicating that the pretest values were further from the average posttest values and depict the group with a more remarkable change in perception toward evaluating patients' health behavior and disease risk.

Figure 6 Mann-Whiney U test Perception Result in a Bar Graph

Mann-Whitney U Test Bar Graph for the Pre- and Post-Intervention Perception Result



Note: N1= sample 1, N2= sample 2, MR= Mean of Ranks, U-value= test statistic

Pretest and Posttest Intervention Communication Results

Communication

The percentage of participants' responses to each question about healthcare clinicians' understanding of the significance of effective communication with patients can improve health outcomes in communities strongly affected by social determinants of health, including adherence and compliance rate to treatments. Results are presented in Table 6.1.

Table 6.1 Communication Scores

Table 6.1

Pretest and Posttest Communication Scores

Communication Questions	Pretest (n/N) *	Post-test (n/N) *	% Change
How do you communicate health information to patients in your practice? Select all that apply:			
a) Printed materials*	a) 11/18 (61.11%)	a) 3/13 (23%)	62.30%↓
b) Video*	b) 3/18 (16.67%)	b) 1/13 (8%)	52.94%↓
c) Verbal instructions*	c) 18/18 (100%)	c) 9/13 (69%)	30.77↓
d) Audio *	d) 3/18 (16.67%)	d) 0 (0%)	100%↓
How should clinicians convey information to patients? Select all that apply:			
a) Organized	a) 12/18 (66.67%)	a) 8/11 (62%)	9.09%↑
b) Simple terms	b) 18/18 (100%)	b) 10/11 (77%)	10%↓
c) Unstructured	c) 1/18 (5.56%)	c) 0 (0%)	100%↓
d) Clear and concise	d) 14/18 (77.78%)	d) 10/11 (77%)	15.38%↑
e) Medical jargons	e) 0 (0%)	e) 0 (0%)	0%
Do you use any teaching methods when sharing information with your patients?			
a) Definitely not	a) 0 (0%)	a) 0 (0%)	0%
b) Probably not	b) 1/18 (5.56%)	b) 0 (0%)	100%↓
c) Might/might not	c) 5/18 (27.78%)	c) 3/13 (23%)	14.81%↓
d) Probably yes	d) 3/18 (16.67%)	d) 2/13 (15%)	35.29%↑
e) Definitely yes	e) 9/18 (50%)	e) 8/13 (62%)	22%↑
Use the slider to answer the following questions, rate 0-10			
How do you rate the relevance of patient-centered care in your practice?			

How do you rate your communicating skills with your patients?	Mean score 8.7	Mean Score 8	8.05%↓
Rate the importance of screening high risk patients early?	8.7	9	3.45%↑
	9.4	9	4.26%↓

Communication Result Interpretation

The questions in the communication section were formatted to allow investigators to measure clinicians' communication skills and use of teaching methods when conveying information to patients and families. As illustrated in table 5.1, eighteen (n=18) responded to the pre-intervention and thirteen (n=13) to the post-intervention communication questionnaire. Overall, the result did not show a significant change in the communication score, as many participants did not complete the post-test and did not answer all the questions as directed. However, some changes were noted in the score, pertinent improvement of communication skills, and that participants used different methods of communication to convey information to their patients. For instance, a 15.58% increase in change was noted in promoting transparency and conciseness and 9.09% in organized communication—also, a 57.29% increase in using a teaching method when discussing health information with patients.

Inferential Data

Although there were some increases in the percent change in the pre-post-intervention scores, the mean pre- and post-intervention communication scores did not show a significant improvement (as anticipated). Thus, the data analysis provided regarding these scores does not indicate if the change that occurred was statistically significant.

Mann-Whitney U Test Communication Result Interpretation

A Mann-Whitney U test was conducted to evaluate whether there is a significant difference between healthcare clinicians' mean communication skills in improving patient care delivery in the pre-and post-intervention scores. The result of the two-tailed hypothesis is based on a significant level of 0.05 and the mean rank score for each current question. Table 6.2 illustrates the result or mean rank score of appropriate answers in the pre-and post-test intervention, and the bar graph is presented in figure 7. The test statistic or U is 56, P-value 0.79, and the critical value is 30 based on the Mann-Whitney U table. This finding suggests no significant difference in healthcare clinicians' mean communication skills rank in pre- and post-interventions as the test statistic was significantly greater than the critical value.

Table 6.2 Mann-Whitney U Test Communication Result

Table 6.2

Mann-Whitney U Test for the Difference Between Pre-Intervention and Post-Intervention Communication

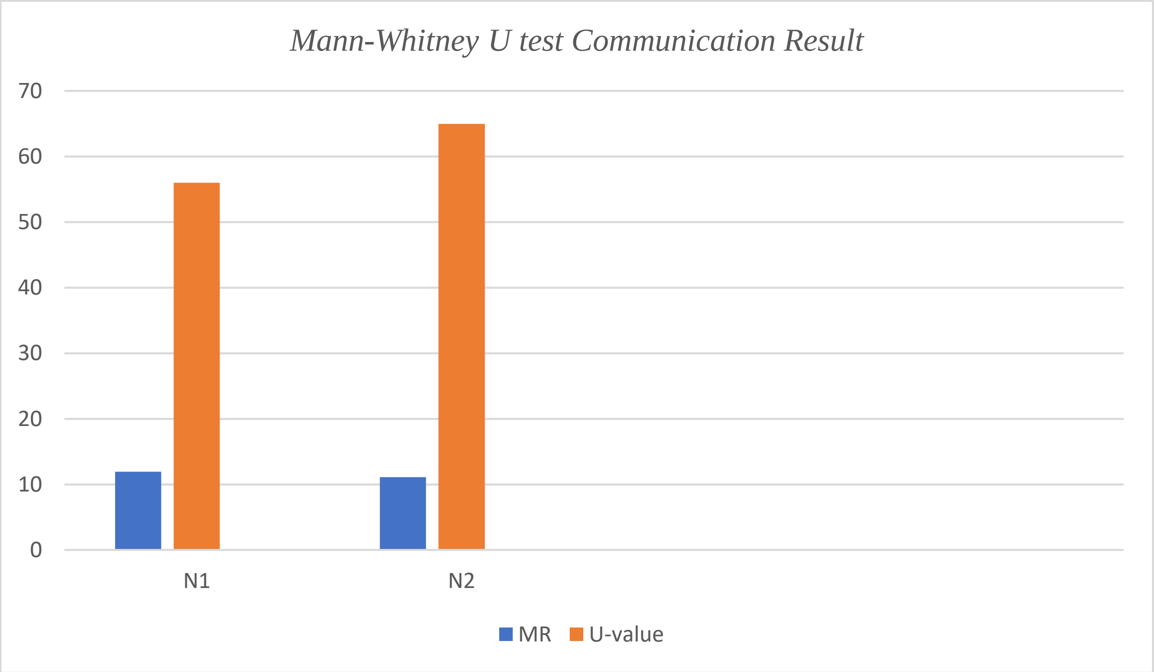
Pretest	**Posttest**					
Mean Rank	Mean Rank	U-value	CV	SD	Z-score	P-value
11.91	11.09	56	30	15.23	0.26	0.79

Note: CV= critical value, U-value=test statistic, SD= standard deviation

Table 6.2 illustrates the Mann-Whitney U test findings for the difference in the communication scores in the pretest and posttest. It enables the contrast of the disparity between the two random samples. The variables were independent, continuous, or ordinal and roughly the same. Thus, the data were not evenly distributed since this test is non-parametric (Statology, 2018). The pretest and posttest had the same number of questions; however, not all participants completed both questionnaires and answered all the questions as directed. The table contains the mean rank score for both surveys, median, and standard deviation. As indicated in table 5.2, the mean rank score was 11.91 and 11.09 in the posttest, indicating that the pretest values were slightly different from the average posttest values. However, the standard for the posttest survey was more significant than the pretest average, indicating the group with a change in communication.

Figure 7 Mann-Whitney U test Communication Result in a Bar Graph

Mann-Whitney U Test Bar Graph for the Pre- and Post-Intervention Communication Result



Note: N1= sample 1, N2= sample 2, MR= Mean of Ranks, U-value= test statistic

Discussion

According to the survey's results, the participants knew of the health disparities black men face in the United States. Overall, there is no significant difference in the mean rank in pretest and posttest scores, as many participants were knowledgeable about the subject. However, after receiving the educational training, there were changes in the score of the key points discussed during the educational presentation. For instance, in the pretest, the knowledge of SDoH related to prostate health in black men. The score increased from 84.21% to 92.9% in the posttest, which suggests that the participants had some knowledge of the social factors that influence black men's health. However, the educational intervention may have enhanced their knowledge concerning SDoH impacts on prostate health, more specifically, as many clinicians interact with individuals affected daily.

SDoH affects healthcare delivery and contributes to poor health outcomes in many racial groups, especially black communities. For instance, an individual may have health insurance but cannot afford certain services as some insurance companies do not cover certain services. The literature review depicted a link between SDoH and prostate cancer. In the study, the participants were educated on the impacts of social factors on prostate health. The participant's knowledge of the higher incidence rate of prostate cancer in black men increased from 36.84% in the pretest to 53.84% in the posttest. As many factors influence the incidence rate of prostate cancer in black, fewer clinical trials, delays in disease detection, and limited access to health care influence how care is delivered to this population. For instance, as a man ages, there is a high incidence risk for prostate cancer, and the screening rate is low in many black communities, which contributes to late diagnosis of prostate cancer and poor outcomes.

The data for this quality improvement project indicate that clinicians' education regarding SDoH improves clinicians' knowledge, behavior, attitude, perception, and communication. Evidence-based practice is now widely recognized as the key to improving healthcare quality and patient outcomes (Chien, 2019, p.1). Thus, support the literature on promoting continuing education's significance in improving care delivery and clinical practice. Clinicians' education is imperative to promote the health and wellness of population health as it improves clinicians' expertise and helps promote the integration of necessary initiatives that support quality care delivery. While it is impossible to state with certainty that the increase in clinicians' knowledge will lead to change in practice, based on the current literature, there is reasonable evidence to suggest that this will eventually occur.

Change occurs as people become aware of the necessity or potential benefits of making the change. Learning of the SDoH impacts on prostate health may trigger clinicians' intellect in promoting a culture that addresses each SDoH to promote health outcomes, such as reducing the incidence of disease, mortality, and morbidity rates. Clinicians must find an effective approach to educating their patients about the risk factors and work with them in decision-making regarding screening and treatment plans. The data were evaluated on the five concepts or themes used to evaluate the effectiveness of the educational training, including knowledge, behavior, attitude, perception, and communication. For instance, improving clinicians' knowledge of SDoH may facilitate the integration of new approaches in care or reinforcement of the current care model that supports improvement in health outcomes.

In patient-centered care, an individual's specific health needs and desired health outcomes are the driving force behind all healthcare decisions and quality measurements (Backhouse & Ogunlayi, 2020). This approach focused on all aspects of the individuals that affect health, including physical, emotional, psychological, psychosocial, and environmental. Thus, allow the delivery of care pertinent to meet the individual's health needs and, most importantly, consider the patient's input in care. As active participants in care, patients can be informed about decisions in care, improving adherence and patient satisfaction. Regarding the prostate cancer screening guidelines, the participants' scores indicate the significance of screening black men early compared to other racial groups due to the high incidence of prostate cancer, which depicted the knowledge test score of 47.37 % in the pretest to 54% in the posttest. Also, in their interaction with patients about screening, a shared decision-making approach effectively reduces the incidence risk of prostate cancer as it empowers them to make decisions about their health.

The second theme includes behavior toward SDoH impacts, incidence of prostate cancer in black men, and shared decision making in care. Health literacy affects the screening rate in black men as many refuses to visit clinicians and screen for prostate cancer because of the perceptions of the health care systems and manhood. 27.78% of participants pretested that patient education is imperative to reduce the risk of prostate cancer in black and increased to 38.46% after the educational intervention. Thus, patient education is a practical approach to promoting self-efficacy for preventing and managing diseases and improving health outcomes. It is an approach to care that focuses on individualized care to target specific health needs, including physical, psychological, and emotional, which is part of the extensive model of personalized medicine to diagnose, treat, and manage patient care. In addition, care decisions are an integral approach that shows significant long-term implications for improving health outcomes.

As compared to the management of other diseases such as hypertension, diabetes, and heart diseases, patient education is as relevant to prostate health in black men due to prostate cancer's high incidence and mortality rate. The third theme includes an attitude toward implementing new models in care that support health promotion and enhance patient-centered care in practice. Effective implementation of care plans and educational interventions require a combined effort between healthcare clinicians (HCCs) and patients to prepare educational programs and resources. This embedded concept is imperative for developing patient-centered care and its implementation in specific ages, racial groups, and educational backgrounds. Thus, effective implementation of care plans and educational interventions require a combined effort between healthcare clinicians (HCCs) and patients to prepare educational programs and resources.

The fourth theme includes perception of care partnerships, health behaviors, and screening guidelines. An effective way to relieve the burden of prostate cancer is to educate clinicians about the social determinants that directly affect this population and develop shared care and treatment plans using the ABCDE guide. The survey outlined the toolkit's components, and each was tested, and the educational intervention reinforced the indication for developing that toolkit. The ABCDE is an integrative racial and gender-focused approach to caring for black men through communication, dual-partnership, and education that facilitate the delivery of targeted educational and health awareness programs and care interventions that support prostate health to improve health outcomes in this population. For instance, it focuses on identifying high-risk patients and providing patient-centered care and educational resources for effective implementation and management of care.

The ABCDE toolkit includes a) a racial and gendered focus, b) black men, c) communication, d) dual partnership, and e) education to improve the patient's knowledge of prostate health, access to preventive care, and enhance clinicians and patients' abilities to fulfill the shared goals of improving health outcomes attributed to the incidence of prostate cancer in that population. Participants' perceptions of their responsibility to improve care delivery and implement new approaches to care to improve health outcomes increased from 78.95% in the pretest to 85% in the post-test. Thus, participants are willing to implement the ABCDE toolkit in practice to reduce the incidence of prostate cancer and poor outcomes in black as it entails a patient-centered care approach.

The data indicated that it would be crucial for clinicians to get involved with healthcare educators, health organizations, and policymakers to develop initiatives to find ways to address SDoH as they present barriers to quality care delivery and poor health outcomes. However, the current quality improvement project does not assess clinicians' use of evidence-based practice outcomes. Evidence indicates that educational training in clinical tools and innovative care models improves clinicians' expertise and health outcomes. Over a short time, the quality improvement project depicts some chance in clinicians' knowledge, attitude, and behaviors. Thus, extending this project by collecting secondary data from different primary care practices could be tracked longitudinally if knowledge, attitude, and behaviors are retained over time and further advocated for implementing resources to impact Black men's prostate health in clinical settings positively.

Outside of this quality improvement project, it would be helpful to expand the number of nurses and healthcare clinicians involved in education while also expanding the project to different practice sites to determine if the results are similar. This QI project can support instrumental change and impact local, national, and global communities. The overall findings of this project show that following the implementation of an educational intervention, healthcare clinicians and personnel's knowledge, attitudes and behaviors changed regarding the SDoH that can affect Black men's prostate health and overall health outcomes. Additionally, incorporating a focus on SDoH and health inequities into medical and nursing education training may help create a cultural understanding of patients and change how clinicians recognize the SDoH that produces health outcomes around the globe.

Limitations

Several limitations factors have been identified that may influence the QI project findings, including small sample size, lack of randomization, lack of participant commitment, and workflow. During the development of this QI project, it was challenging for the candidate to find sites that facilitate the project's implementation. The project consisted of a small sample size from a single healthcare setting, which diverges from the project's long-term objective to reduce the diagnosis of advanced prostate cancer by 50 percent in the next five years. Many participants did not complete the surveys and the educational intervention. Although the research yielded valuable data, a larger sample size would be beneficial in further studies. Larger sample sizes could benefit the statistical breakdown of the data and lead to the development of more significant research outcomes.

The project consisted of a small convenient selection of healthcare clinicians and personnel. The convenience sample was recruited from a single sample that consisted of roughly nineteen (n=19) participants who completed the pre-survey. Only fourteen (n=14) participants completed the post-survey. The clinical site consisted of seven (n=7) clinicians, five (n=5) out of the seven agreed to participate in the study. The candidate had to recruit other providers with similar objectives outside the practice. Furthermore, without a control group, it is hard to conclude that the positive change in clinicians' knowledge, attitudes, and behaviors was based solely on educational intervention or additional training. The primary focus of the study was to measure clinicians' knowledge, attitude, and behavior after the educational intervention.

Most importantly, analyzing the effectiveness of the education intervention as the scores in each theme increased after the intervention. A quasi-experimental design was conducted, leading to a lack of components of a randomized controlled trial, including randomization of the sample, use of control, or both (Matthew, 2020). The lack of randomization in the sample suggests that it was not representative of a larger population, meaning clinicians who provide care to black men. Thus, the results may be generalized to other clinicians in diverse practice settings. The sudden drop in the number of participants and inconsistent response in some pre- to post-survey questions may have shown a lack of interest or rush when answering post-intervention questions. The DNP candidate developed the survey questions from evidence-based literature reviews and focused on the toolkit's components.

However, the educational intervention time was limited as the candidate had thirty minutes to present at the site and mostly had to do one to one presentation due to the practice workload. The participants' workload influences their receptiveness to complete the educational intervention and surveys. The results would have been different if all participants had fully participated and answered all the questions as directed by the candidate's recommendations. The survey tool had also not been assessed for reliability and validity. It is not feasible to state that causality is present although there is an increase in scores from the pre- and post-intervention phase. Also, the Mann-Whitney U Test indicated no statistical evidence of a difference in the mean scores of the surveys. Thus, there is no indication that the educational intervention caused the increase in knowledge scores.

Implications for Nursing Practice

Despite this growing trend, some relevant aspects of prostate health are unknown to black men, especially in low-income communities, which increases the incidence rate and diagnosis of prostate cancer at an advanced stage. Therefore, healthcare clinicians should find new approaches to target the problem to improve the health outcomes of this population. One way to relieve the burden of prostate cancer is to raise clinicians’ awareness about the social determinants that directly affect this population and develop shared care. The ABCDE approach will serve as a guide to clinicians in identifying high-risk patients, recommending treatment plans, and providing patient-centered care and educational resources for effective implementation and management of care. Thus, the focus of this quality project is to identify specific social determinants of health common in black men, determine their impact on prostate health, and identify ways for providers to address them in practice.

The ABCDE is an integrative racial and gender-focused approach to caring for black men through communication, dual-partnership by empowering patients to make informed decisions about their care, and education by enhancing their patients' knowledge about their health conditions and ways to improve their health. This approach will help reinforce patient-centered and culturally adaptive care imperative to include the patients and evaluate other aspects of their life that may impact their health outcomes. It will also enhance clinicians' and patients' abilities to fulfill the shared goals of improving health outcomes attributed to the incidence of prostate cancer in that population. Thus, this toolkit will allow clinicians to provide quality patient care and expand the role of advanced nurse practitioners in health promotion and implementation of evidence-based care practice to improve health outcomes.

However, future longitudinal studies needed to better measure the effectiveness of this toolkit. Through policy changes, healthcare clinicians will better assist their patients affected by SDoH and reduce their impacts on health outcomes. Effective policy changes are more likely to improve health when fundamental principles are considered, including sound research evidence, health equity, and proactive strategies that bridge the research and policy worlds to increase adoption and implementation (Pollack et al., 2018). For instance, the change should be based on the best available research evidence that addresses a problem with implications for affected individuals' well-being.

Healthcare clinicians can collaborate with educators to change policies and influence change within the education curriculum to support initiatives that address SDoH and its impacts on community health. For instance, in practice, universal pamphlets and posters can be posted in waiting areas. In a policy change, strong leadership or admirative support is imperative to support organizational changes. Translational research and DNP QI projects translate research into practice and catalyze change. They bring forth evidence-based information that supports the adverse effects of the problem and propose a potential solution to address the problem with more significant benefits for those affected. Thus, they allow individuals to be involved in leading and delivering change, from improving individual patient care to transforming services across complex health and care systems (Backhouse & Ogunlayi, 2020).

Dissemination and Sustainability

Dissemination of the project will occur at the practice site, where the leaders and clinicians working at the facility will be provided with an executive summary outlining the contents of the projects and outcomes. Outside of the healthcare organization, dissemination occurred through poster presentations at State, International, and regional conferences. For instance, the candidate presented the project at the 8th Annual FNA Nursing Research & Evidence-Based Practice Conference held on July 16, 2022, at the Nurse Practitioner Council of Miami Dade meeting “Strategies to Strengthen Healthcare Delivery Through Quality Improvement Initiatives,” held on October 13. 2022, and the 48th Annual Conference of the Transcultural Nursing Society (TCNS) in November 2022 in Kentucky, Louisiana. Also, dissemination of the project will include the effort to publish a peer-reviewed journal, such as the journal of transcultural nursing and the American journal of nursing. The sustainability of the project will be evaluated through data collection in patient charts and education of new hires in a file folder.

Conclusion

This project demonstrated the benefit of increased clinicians' knowledge through an educational program. The participants received an educational intervention emphasizing the SDoH and its link to poor prostate cancer outcomes in black men. Black men are highly affected by poor prostate cancer outcomes, which indicates a need for policy change toward implementing new initiatives in caring for black men. Understanding the factors influencing access to care, health behaviors, and future health needs specific to the population is imperative for implementing individualized population-focused interventions to improve their health outcomes. Knowledge of SDoH contributing to health inequity in black men is imperative to reduce the burden of prostate cancer in that population, including gender, race, socioeconomic status, and education.

Also, health literacy allows individuals to change their health behaviors and perceptions of health care. Understanding black men's health behaviors and perceptions in the healthcare system will empower clinicians to earn their trust and develop educational and health plans that support their health needs. Knowledge of SDoH impacts will help clinicians to work alongside with community leaders in allocating resources, new models of care to improve practice, and enhance their willingness to implement new approaches in care to increase their patients’ health outcomes. Clinicians must understand that they play a role in improving patients' health outcomes, directly proportional to their health promotion and disease prevention initiatives. Thus, with the knowledge of the social determinants, clinicians will screen their patients and identify barriers that impede their access to care, such as perceptions of the healthcare systems, socioeconomic status, and awareness of prostate health.

Depending on the population's needs, clinicians can help allocate resources to support patients’ health needs. For instance, clinicians can partner with public and private organizations that offer grant programs or fund preventive care services. Also, clinicians should take at least five minutes to educate black men about prostate health, risk incidence, and preventative screening available to detect prostate cancer early for effective management. Thus, it is important to stress the importance of assessing black men's health behaviors since they are significant contributors to cancer and other chronic diseases because of the vulnerabilities of this population. Healthcare clinicians' understanding of the disparities that influence the well-being of population health in their respective communities can shift their perceptions and efforts in individualizing care and promote cost-effective interventions.

Although this quality improvement project does have some notable limitations, there is enough evidence to support a practice change based on the current evidence, indicating that educating healthcare clinicians about SDoH impacts Black men’s prostate health. Better screening, evaluation, and follow-up care are imperative to ensure quality and continuity of care. The value of care coordination, cultural competency, and negative stereotypes are critical measures to address the negative impact of health outcomes in black men. By providing routine educational training on the effects of SDoH on vulnerable populations in healthcare settings, clinicians and personnel can positively impact this population. Furthermore, research suggests that educational seminars and training have been effective in heightening clinicians’ knowledge, attitudes, and behaviors in screening, managing, and providing resources to address SDOH when providing care.

Lastly, the results of this QI project show a positive impact on a smaller population. These findings suggest that healthcare professionals may benefit from educational seminars on SDoH to improve prostate health outcomes in black men. Clinicians should use a practical approach to help identify common health factors that impact black men and shift their approach to practice. Integrating this approach in the care of black men, clinicians will better understand their health status and behaviors, which facilitates the delivery of quality, patient-centered, and holistic care. Thus, the ABCDE, a racial-gender-focus, black men, communication, dual-partnerships, and education, a targeted or patient-centered care approach to target this issue by improving care delivery in that population through targeted educational and health awareness programs and care interventions that support prostate health to improve the health outcomes of this population. Seminars and workshops that educate students about how SDoH impact prostate health in Black men, and the importance of screening assessments for SDoH can be helpful in primary care settings.

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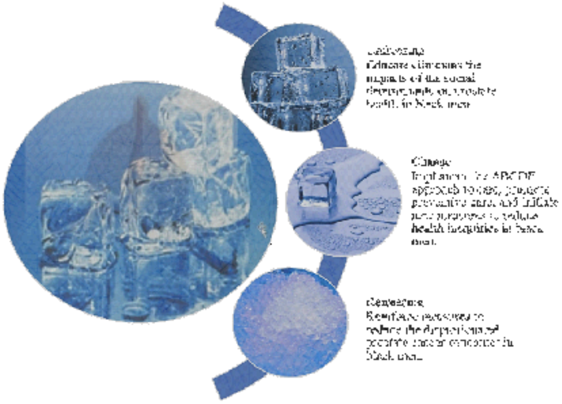
Appendix A

Recruitment Flyer

PARTICIPANTS NEEDED!

For a quality improvement project



At First Medical Care in collaboration with Florida International University, we are currently conducting a study focuses on the development and evaluation of an evidence-based toolkit on the knowledge, attitudes, and practices of primay care clinicians of social determinants of health impacts on prostate health in black men.

We need your help!

What will you have to do?

- Take a pre-test through qualtrix for 10-15 minutes.
- Participate in a 30-45 minutes educational session , at the assigned clinical site or via zoom.
- Take a post-test through qualtrix 2 weeks after participating in the educational session

Your parcipation is imperative for the success of this project and population health outcomes in those affected by social determinants of health.

Please contact Cassandre Alcemora at cassu2394@gmail.com for more information or Sign up below with your email address:

____

____

____

____.

Appendix B

Informed Consent

Impact of Educational Interventions for Healthcare Providers through the development and evaluation of an evidence-based educational toolkit on the knowledge, attitudes, and practices of primary care clinician's regarding SDoH that impact prostate health in black men: A Quality Improvement Project.

Hello, my name is Cassandre Alcemora. You have been chosen to participate in a quality improvement project for First Mobile Medical Care.

PURPOSE OF THE PROJECT

The purpose of the project is to investigate the impact of an educational intervention for healthcare providers by developing an evidence-based toolkit that can transform prostate health care and cancer outcomes in black men. It includes a thorough evaluation of the gap in prostate care outcomes for black men and assessing clinicians' knowledge, attitude, and behaviors of social determinants that impact prostate health in black men.

NUMBER OF PARTICIPANTS

If you decide to be in this project, you will be one of the thirty healthcare providers that have been selected to participate in this quality improvement project.

DURATION OF THE PROJECT

This project will run for about 3 months. Participation in this study will take about 2 hours of your time. This will include completion of the pre and posttest questionnaires, 1 classroom style educational session, and reading of an educational handout.

PROCEDURES

If you choose to participate in the project, I will ask you to do the following things:

1. Complete the pre-test questionnaire for about 10-15 minutes each.
2. Attend an educational intervention that will be 30-45 minutes long
3. Read an educational handout provided during the intervention
4. Complete the post-test questionnaire after 2 weeks of participating in the educational intervention.

RISKS AND/OR DISCOMFORTS

There are no foreseeable risks for participating in this study and participation in the project will not interfere with normal office performance.

BENEFITS

There are various foreseeable benefits for participation including improvement of SDoH knowledge and improvement in the skills in assessing SDoH in high-risk populations and promoting prostate health in black men due to the high incidence of prostate cancer and disproportionated cancer outcomes in that population. This would ultimately improve the treatment and outcomes for this population in the society.

ALTERNATIVES

There are no known alternatives available to you other than not taking part in this study. Any significant new findings developed during the course of the project which may relate to your willingness to continue participation will be provided to you.

CONFIDENTIALITY

The records of this project including the pretest and posttest questionnaire will be kept private and will be protected to the fullest extent provided by law. In any sort of report, we might publish, we will not include any information that will make it possible to identify you. Research records will be stored securely, and only the project team will have access to the records. However, your records may be inspected by authorized University or other agents who will also keep the information confidential.

USE OF YOUR INFORMATION

Your information collected as part of the project will not be used or distributed for future research studies even if identifiers are removed.

COMPENSATION AND COSTS

There is no cost or payment for participating in this project.

RIGHT TO DECLINE OR WITHDRAW

Your participation in this project is voluntary. You are free to participate in the project or withdraw your consent at any time during the project. You will not lose any benefits if you decide not to participate or if you quit the project early. The investigator reserves the right to remove you without your consent at such time that he feels it is in the best interest. Please carefully read the entire document before agreeing to participate. You may keep a copy of this form for your records.

INVESTIGATOR CONTACT INFORMATION

If you have any questions about the purpose, procedures, or any other issues relating to this quality improvement project you may contact Cassandre Alcemora at 754-204-6077 or cassu2394@ gmail.com; or Dr. Deana Goldin at (305) 348-2958, degoldin@fiu.edu.

IRB CONTACT INFORMATION

If you would like to talk with someone about your rights of being a subject in this quality improvement plan or about ethical issues with this project, you may contact the FIU Office of Research Integrity by phone at 305-348-2494 or by email at ori@fiu.edu.

PARTICIPANT AGREEMENT

I have read the information in this consent form and agree to participate in this project. I have had a chance to ask any questions I have about this project, and they have been answered for me. I understand that I will be given a copy of this form for my records.

______________________________ ___________________
Signature of Participant **Date**

____
Printed Name of Participant

X

Cassandre Alcemora
Co-investigator

____
Date

Appendix C

FIU | FLORIDA INTERNATIONAL UNIVERSITY

PRETEST AND POSTTEST QUESTIONNAIRE

Development and evaluation of an evidence-based educational toolkit on the knowledge, attitudes, and practices of primary care clinician's regarding SDoH that impact prostate health in black men: A Quality improvement project.

This Quality improvement project aims to determine the impact of educational interventions for health care providers on social determinants of health impacts in black men, especially prostate cancer outcomes.

These questions will test the knowledge and perceptions of clinicians about social determinants of health impacts on prostate cancer outcomes in black men and determine their readiness to implement new approaches to care that improve patient education, screening, diagnosis, and management of diseases. The questions are structured differently, and instructions are provided on answering each question. Please answer the question below to the best of your ability, as it will help ensure that areas of knowledge gaps are covered in the intervention.

Your responses and comments will help to improve future educational interventions and programs; as well as assess how much knowledge you have acquired by participating in this educational intervention.

PERSONAL INFORMATION

1. What best describe your gender?
    - Male

  - Female
  - Other, specify_____________
2. Age __________________
3. Ethnicity
   - Hispanic
   - Caucasian
   - Black/African Ameri
   - Asian
   - Other, specify ______________
4. Position at the facility ________________________.
5. Profession (select one)
   - MD
   - PA
   - NP
   - Clinical support
6. Health care specialty
   - Family Medicine
   - Internal Medicine
   - Other, specify ________________
7. How long have you been practicing at this clinic?
   - 0-11 month (s)
   - 1 year to 2 years
   - >2 years -5 years
   - >5 years – 10 years
   - >10 years
8. What best describes your role at your organization? ________________________.
9. How long have you been in clinical practice?
   - 0-11 month (s)
   - 1 year to 2 years
   - 2 years -5 years
   - >5 years – 10 years

- >10 years

KNOWLEDGE

10. Which racial group has the highest incidence of prostate cancer?
    - Black men
    - White men
    - Hispanic men
    - Other, specify ______
11. Estimate the incidence rate of prostate cancer in that population?
    - 1 out of 8 men will be diagnosed with prostate cancer as they get older
    - 3 out of 10 men will be diagnosed with prostate cancer as they get older.
    - 5 out 8 men will be diagnosed with prostate cancer as the get older.
    - 7 out of 10 men will be diagnosed with prostate cancer as the get older.
12. Define social determinants of health
    - Medical factors that affect health
    - Conditions in the individual's environment that affect health outcomes
    - Do not affect health outcomes
    - Policies that affect health care delivery
13. How health disparities impact prostate health in black men, select all that apply:
    - Disproportionate health outcomes
    - High incidence of prostate cancer
    - Improve community health
    - Better care
14. What are the causes of such a high incidence of prostate cancer in that population?
    - Multifactorial
    - Genetic
    - Age and gender
    - Environmental factors
15. Select the common screening tools for prostate cancer, select all that apply:
    - Prostate specific antigen
    - Digital rectal examination
    - Ultrasound

- Prostate biopsy

BEHAVIOUR

16. Please indicate whether you agree or disagree with the following statements:

For the following statements, please choose strongly Agree (SA), Agree (A), Undecided (U), Disagree (D), or Strongly Disagree (SD)

	1 Strongly agree	2 Agree	3 Neutral	4 Disagree	5 Strongly Disagree
a. I am up to date with the latest screening guidelines for prostate cancer. b. Black men have the highest incidence of prostate cancer and poor prostate cancer outcomes. c. Black population is highly affected by social determinants of health. d. Social determinants of health impacts prostate cancer outcomes in black men. e. I should provide care specific to the individuals rather than follow only current guidelines					

17. What is your approach to prostate cancer screening in black men? ____.

18. How confident are you in your ability to perform the following?

	Not at all confident 1	Somewhat confident 2	Confident 3	Very confident 4
a. Include individualized care in practice. b. Incorporate a racial-gendered specific approach to care. c. Work in partnership with patient d. Perform digital rectal exam				

e. Counsel patients about prostate health				

ATTITUDE ON SCREENING

19. Will you be open to incorporating a new approach to care to reduce the incidence of prostate cancer and poor outcomes in high risk or black men). Yes ______ No ______.

20. Do you think it is your responsibility as a clinician to help develop new approaches to care to reduce the impact of social determinants of health in specific racial or social groups? Yes ______ No ______

21. How often do you discuss prostate health with your patients? __________________________.

22. For those uninsured, how do you help them in getting preventative care? ____.

23. Which population will you screen earlier?
    - Black men with no family of prostate cancer
    - Black men with first degree relative prostate cancer.
    - White men
    - Hispanic men
    - Other, specify, ____________________.
24. Why is it important to screen high risk patients early? ____.

25. How often do you refer your patient to urology? ____.

PERCEPTIONS

26. Indicate whether you agree or disagree with the following statements

	1 Strongly agree	2 Agree	3 Neutral	4 Disagree	5 Strongly disagree
a. I seek clinical guidelines to aid in patient care. b. I evaluate the patient’s health behaviors and assess risk of disease in each encounter. c. I work in collaborate with other providers to ensure the delivery of timely and effective care to patients. d. I incorporate a patient-centered-care approach in practice. e. Often, guidelines do not fit into specific patient’s conditions. f.					

27. Are you satisfied with only using the prostate cancer screening guidelines in black men?
    - Very satisfied
    - Somewhat satisfied
    - Neutral
    - Somewhat unsatisfied
    - Very unsatisfied.
28. If you want to change one thing in practice when providing care for high-risk patients, what would it be? ____.

COMMUNICATION

29. How do you communicate health information to patients in your practice?

a) Printed materials
b) Video
c) Verbal instructions
d) Audio

30. How should clinicians convey information to patients? Select all that apply:
    a) Organized
    b) Simple terms
    c) Unstructured
    d) Clear and concise
    e) medical jargons

31. Do you use any teaching methods when sharing information with your patients? if yes, what is it? ________________.

32. From a scale of 0-10, rate the following questions?
    a) How do you rate the relevance of patient-centered care in your practice? ____________.
    b) How do you rate your communicating skills with your patients? ________________.
    c) Rate the importance of screening high risk patients early? ____________________.

Appendix D

Invitation Email

Greetings Participant,

Thank you for accepting the invitation to be part of this project. Participants will indirectly benefit from this study due to the general feeling of reward for being able to help with this evidence-based project and improving prostate cancer outcomes in black men.

This survey will take 5-10 minutes to complete in one sitting. Therefore, it is important to complete the survey carefully and entirely. The accuracy of your answers will help the researchers to have error-free data and reliable findings.

These questions will test the knowledge and perceptions of clinicians about social determinants of health impacts on prostate cancer outcomes in black men. The questions are structured differently, and follow the instructions on answering each question. Please answer the questions to the best of your ability. Your responses and comments will help improve future educational interventions.

Please follow the steps for successful completion of the project.

- Step 1: Please review and sign consent form through this link or download the attached consent file to this email.

  https://qfreeaccountssjc1.az1.qualtrics.com/jfe/form/SV_eD8nr2emEUq0DVs:
- Step 2: Follow this link to the survey:

  https://qfreeaccountssjc1.az1.qualtrics.com/jfe/form/SV_3KK9clLpvkRdnSe
- Step 3: Oral presentation scheduled on August 15, 2022.

  Cassandre Alcemora is inviting you to a scheduled Zoom meeting. Time: Aug 15, 2022 07:30 PM Eastern Time (US and Canada)

Join Zoom Meeting

https://us05web.zoom.us/j/3681218045?pwd=QnZEL3lnMGhmOUV4QkVJZEg3M0RKdz09

Meeting ID: 368 121 8045 Passcode: 1234

Step 4: Complete the post-test questionnaire in 2 weeks (will send out a link).

Once again thank you for your participation. Please contact me if you have any questions.

Posttest Questionnaire Survey Email and Link

Hello everyone,

Now, we are at the final step of completing this project. I want to thank each participant for completing the pretest questionnaire, and your participation is indispensable to complete the project. As mentioned, both the pretest and posttest questionnaires have the same questions. Suppose you did not have the chance to participate in the presentation. I would recommend that you take 5 minutes to review the PowerPoint presentation attached to this email and follow up with me if you have any questions. It will help you to answer the questions better this time. Please complete this survey as soon as possible, and it will be appreciated.

Thank you

Cassandre Alcemora

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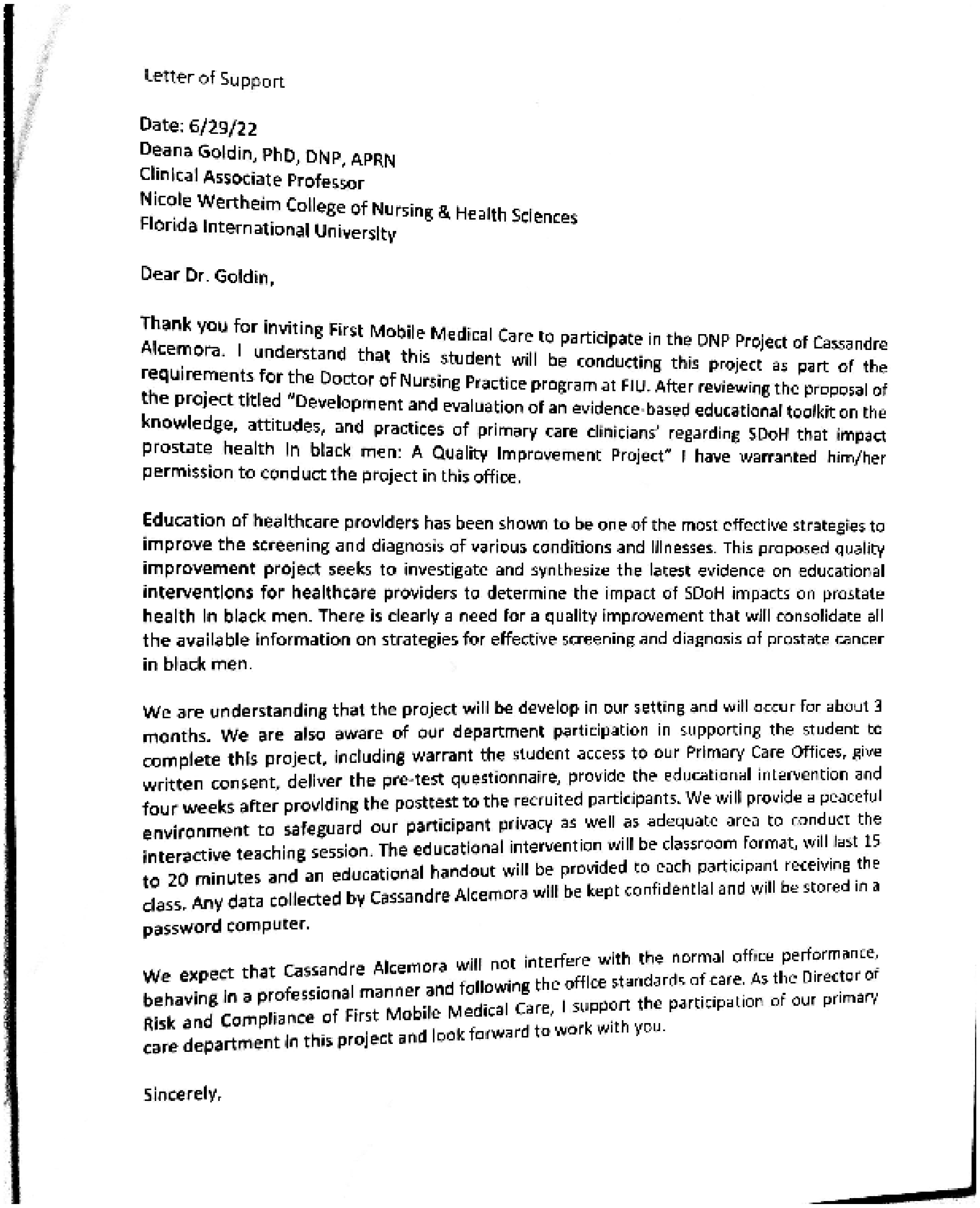
Appendix E

Letter of Support



Letter of Support

Date: 6/29/22
Deana Goldin, PhD, DNP, APRN
Clinical Associate Professor
Nicole Wertheim College of Nursing & Health Sciences
Florida International University

Dear Dr. Goldin,

Thank you for inviting First Mobile Medical Care to participate in the DNP Project of Cassandre Alcemora. I understand that this student will be conducting this project as part of the requirements for the Doctor of Nursing Practice program at FIU. After reviewing the proposal of the project titled "Development and evaluation of an evidence-based educational toolkit on the knowledge, attitudes, and practices of primary care clinicians' regarding SDoH that impact prostate health in black men: A Quality Improvement Project" I have warranted him/her permission to conduct the project in this office.

Education of healthcare providers has been shown to be one of the most effective strategies to improve the screening and diagnosis of various conditions and illnesses. This proposed quality improvement project seeks to investigate and synthesize the latest evidence on educational interventions for healthcare providers to determine the impact of SDoH impacts on prostate health in black men. There is clearly a need for a quality improvement that will consolidate all the available information on strategies for effective screening and diagnosis of prostate cancer in black men.

We are understanding that the project will be develop in our setting and will occur for about 3 months. We are also aware of our department participation in supporting the student to complete this project, including warrant the student access to our Primary Care Offices, give written consent, deliver the pre-test questionnaire, provide the educational intervention and four weeks after providing the posttest to the recruited participants. We will provide a peaceful environment to safeguard our participant privacy as well as adequate area to conduct the interactive teaching session. The educational intervention will be classroom format, will last 15 to 20 minutes and an educational handout will be provided to each participant receiving the class. Any data collected by Cassandre Alcemora will be kept confidential and will be stored in a password computer.

We expect that Cassandre Alcemora will not interfere with the normal office performance, behaving in a professional manner and following the office standards of care. As the Director of Risk and Compliance of First Mobile Medical Care, I support the participation of our primary care department in this project and look forward to work with you.

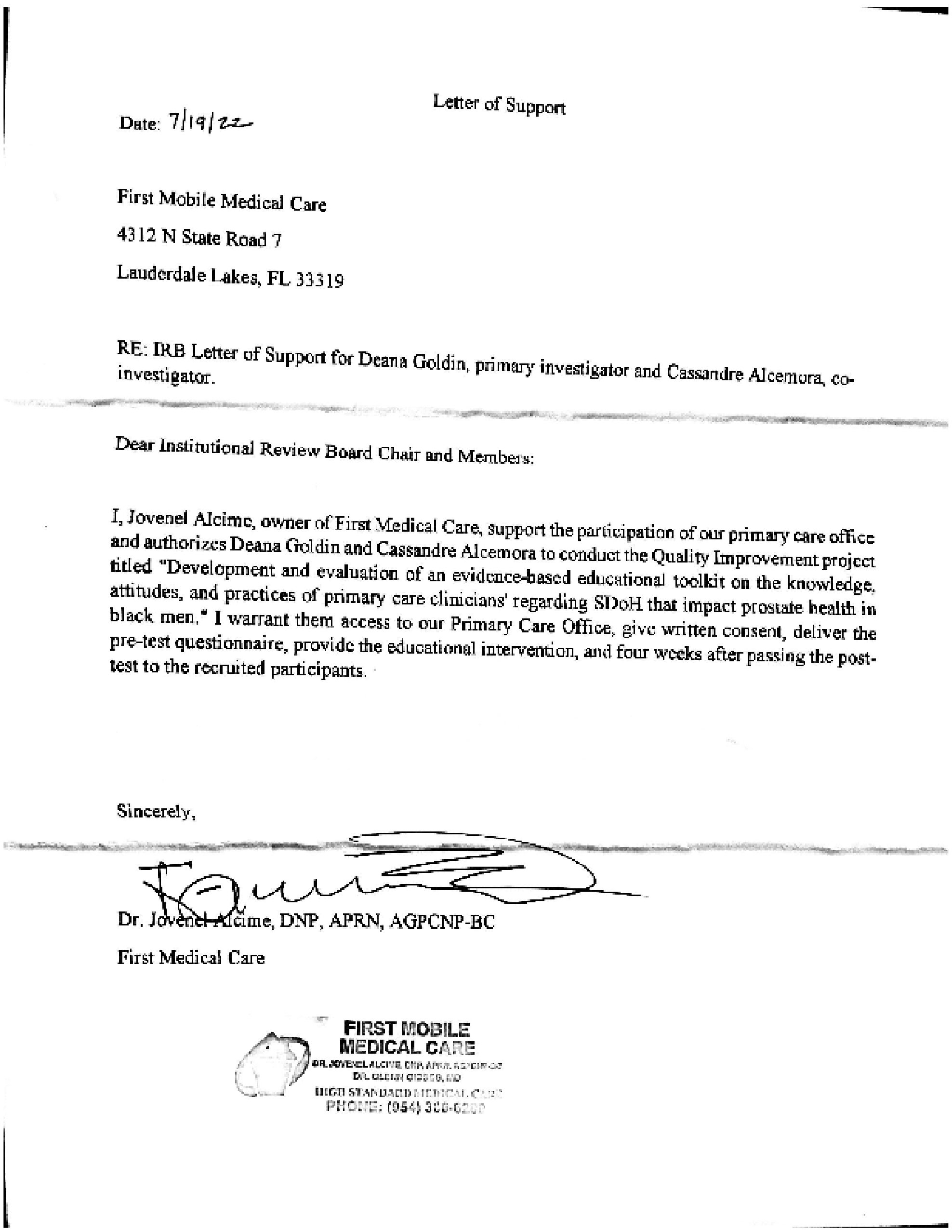
Sincerely,

[redacted]

Director of Risk and Compliance
Medical Care

Appendix F

Mentor IRB Letter of Support



Letter of Support

Date: 7/19/22

First Mobile Medical Care
4312 N State Road 7
Lauderdale Lakes, FL 33319

RE: IRB Letter of Support for Deana Goldin, primary investigator and Cassandre Alcemora, co-investigator.

Dear Institutional Review Board Chair and Members:

I, Jovenel Alcime, owner of First Medical Care, support the participation of our primary care office and authorizes Deana Goldin and Cassandre Alcemora to conduct the Quality Improvement project titled "Development and evaluation of an evidence-based educational toolkit on the knowledge, attitudes, and practices of primary care clinicians' regarding SDoH that impact prostate health in black men." I warrant them access to our Primary Care Office, give written consent, deliver the pre-test questionnaire, provide the educational intervention, and four weeks after passing the post-test to the recruited participants.

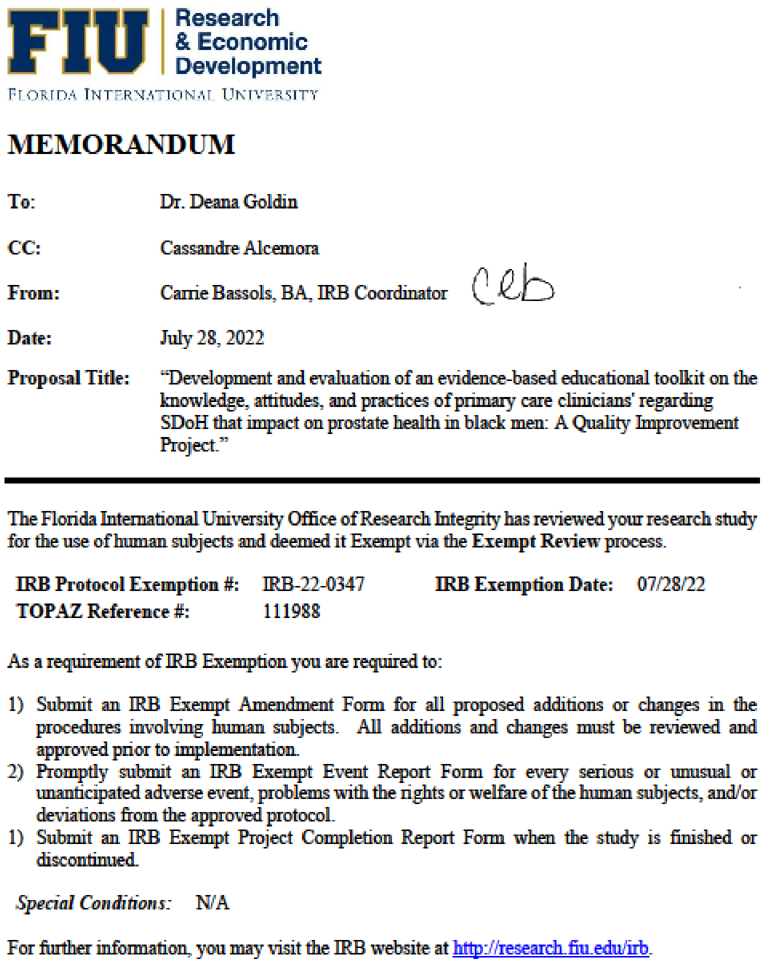
Sincerely,

Dr. Jovenel Alcime, DNP, APRN, AGPCNP-BC
First Medical Care

FIRST MOBILE
MEDICAL CARE
DR. JOVENEL ALCIME DNP, APRN, AGPCNP-BC
DR. [illegible], MD
HIGH STANDARD MEDICAL CARE
PHONE: (954) 300-6200

Appendix G

IRB Approval



FIU | Research & Economic Development
FLORIDA INTERNATIONAL UNIVERSITY

MEMORANDUM

To:	Dr. Deana Goldin
CC:	Cassandre Alcemora
From:	Carrie Bassols, BA, IRB Coordinator ceb
Date:	July 28, 2022
Proposal Title:	"Development and evaluation of an evidence-based educational toolkit on the knowledge, attitudes, and practices of primary care clinicians' regarding SDoH that impact on prostate health in black men: A Quality Improvement Project."

The Florida International University Office of Research Integrity has reviewed your research study for the use of human subjects and deemed it Exempt via the **Exempt Review** process.

IRB Protocol Exemption #:	IRB-22-0347	**IRB Exemption Date:**	07/28/22
TOPAZ Reference #:	111988		

As a requirement of IRB Exemption you are required to:

1) Submit an IRB Exempt Amendment Form for all proposed additions or changes in the procedures involving human subjects. All additions and changes must be reviewed and approved prior to implementation.
2) Promptly submit an IRB Exempt Event Report Form for every serious or unusual or unanticipated adverse event, problems with the rights or welfare of the human subjects, and/or deviations from the approved protocol.
1) Submit an IRB Exempt Project Completion Report Form when the study is finished or discontinued.

Special Conditions: N/A

For further information, you may visit the IRB website at http://research.fiu.edu/irb.