

FACTORS INFLUENCING PROSTATE CANCER SCREENING UPTAKE AMONG AFRICAN AMERICAN MEN: A SYSTEMATIC REVIEW

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Abstract

Prostate cancer (PCa) remains one of the most prevalent cancers worldwide, contributing significantly to male cancer-related mortality. Early detection through screening is crucial for improving prognosis and reducing mortality rates, particularly among high-risk populations such as African American men. Despite the availability of screening methods like prostate-specific antigen (PSA) testing, digital rectal exams (DRE), and imaging techniques, uptake of these screenings among African American men remains disproportionately low. This study systematically reviews literature on the multifaceted factors influencing prostate cancer screening participation within this group. It identifies key individual-level determinants, including knowledge, awareness, psychological barriers, and cultural and socioeconomic factors, which influence screening decisions. The study also explores how systemic and institutional factors contribute to the disparities in screening uptake. It underscores the need for targeted interventions that address these factors, with an emphasis on culturally sensitive approaches that consider the unique challenges faced by African American men. By synthesizing evidence-based insights, this study proposes comprehensive strategies aimed at improving prostate cancer screening rates and reducing health disparities, ultimately leading to better health outcomes for African American men.

Keywords: Prostate cancer, screening uptake, African American men, health disparities, early detection

Introduction

Prostate cancer (PCa) is one of the most commonly diagnosed malignancies in men, with a rapidly increasing incidence across various populations worldwide. It is defined as a pathophysiological disorder characterized by the abnormal and uncontrolled growth of prostate cells, leading to the formation of a tumor. The prostate is a small gland located below the bladder, responsible for producing seminal fluid that nourishes and transports sperm. While prostate cancer can be indolent and remain asymptomatic in many individuals, it can also be aggressive and metastasize to distant organs, severely affecting the quality of life and, in some cases, leading to death.

Prostate cancer's prevalence and associated mortality rates have become significant global public health concerns. According to recent studies, PCa is the most frequently diagnosed cancer among men worldwide (Sung et al., 2021). This malignancy not only affects a substantial proportion of the male population but is also a major contributor to male cancer-related mortality. It is estimated that nearly 1.4 million men are diagnosed with prostate cancer annually, contributing to over 370,000 deaths worldwide (Fidelis Charles Bugoye et al., 2023). In the United States, prostate cancer ranks as the second leading cause of cancer-related death, with approximately 34,500 men expected to die from the disease in 2022 (Siegel et al., 2023). Despite the improvements in early detection and treatment, prostate cancer continues to account for substantial morbidity and mortality, making it one of the foremost public health priorities in oncology.

Global and National Impact of Prostate Cancer

The global burden of prostate cancer is rising, with notable increases in both the number of new diagnoses and the associated mortality. The Institute for Health Metrics and Evaluation (IHME) reported a 61% increase in disability-adjusted life years (DALYs) and an 83% increase in prostate cancer-related mortality from 1990 to 2013 (Adeloye et al., 2016). This data points to a pressing need for effective prevention, early detection, and intervention strategies, particularly in high-risk populations. In the United States, prostate cancer remains the sixth most common cause of cancer-related deaths, with a mortality rate of 18.8 per 100,000 individuals annually (National Cancer Institute, 2018). As of 2023, an estimated 288,300 new cases of prostate cancer are projected in the U.S., contributing to approximately 34,700 deaths (Siegel et al., 2023). These statistics underscore the alarming scope of the disease and the significant health, emotional, and economic burden it places on individuals, families, and healthcare systems.

The economic impact of prostate cancer is substantial, especially in high-income countries like the United States. According to a report by Roehrborn and Black (2011), the total expenditure for prostate cancer management in the U.S. was estimated at \$9.862 billion in 2006. This cost encompasses various phases of care, including diagnostic testing, ongoing treatment, and palliative care during the final stages of life. Prostate cancer management entails a variety of clinical procedures, including regular screenings, imaging tests, surgeries, radiation therapies, and hormonal treatments, all of which contribute to the high cost of care. This financial strain,

combined with the emotional and physical toll on affected individuals, further emphasizes the need for effective preventive strategies, timely detection, and targeted interventions.

Prostate Cancer Risk Factors and Disparities

Although the precise causes of prostate cancer remain unclear, several risk factors have been identified that contribute to its development. Age is the most significant non-modifiable risk factor, with the likelihood of developing prostate cancer increasing substantially after the age of 50. Family history, specific genetic mutations (such as BRCA1 and BRCA2), and certain inherited conditions like Lynch syndrome also elevate the risk (Sung et al., 2021; Dutta et al., 2017; Rebbeck et al., 2013). In addition to these genetic and familial factors, lifestyle and environmental influences have been implicated in prostate cancer's onset. Diets high in red meat, saturated fats, and low in fruits and vegetables, along with sedentary behaviors, obesity, and high blood sugar, have all been associated with an increased risk of developing the disease (Wilson et al., 2012; Langlais et al., 2022). Moreover, prolonged exposure to environmental toxins, including ionizing radiation and certain chemicals, further exacerbates the risk (Burton et al., 2010). These modifiable factors underscore the importance of early intervention strategies and lifestyle modifications to reduce the risk of prostate cancer.

An important aspect of prostate cancer epidemiology is the notable health disparities observed among different racial and ethnic groups. African American men, in particular, face a disproportionately high burden of the disease. Studies have shown that African American men are more likely to develop prostate cancer at an earlier age, with a higher incidence rate compared to other racial and ethnic groups (Rawla, 2019). For instance, the incidence rate among African American men is 158.3 new cases per 100,000 men, which is significantly higher than that of White men (Jiang et al., 2018). Moreover, African American men also experience higher mortality rates, with death rates approximately twice those observed in White men (Rawla, 2019). This disparity is not only linked to genetic predispositions but is also influenced by a complex interplay of socioeconomic, cultural, and healthcare access factors. African American men tend to present with higher levels of prostate-specific antigen (PSA), which is often used as a marker for prostate cancer, and are more likely to develop aggressive forms of the disease (Panigrahi et al., 2019). These factors collectively contribute to poorer outcomes, including advanced-stage diagnoses, lower survival rates, and a lack of reliable biomarkers to predict the aggressiveness of prostate cancer within this population (Deep, 2017).

Screening and Early Detection

The successful management of prostate cancer largely depends on early detection, particularly in localized stages, which improves treatment outcomes and survival rates. Screening methods for prostate cancer, including PSA testing, digital rectal examinations (DRE), and imaging techniques like transrectal ultrasound (TRUS) and magnetic resonance imaging (MRI), are widely used to detect early-stage cancers that may be asymptomatic (American Cancer Society, 2023). These screenings are crucial in reducing mortality rates by identifying prostate cancer in its early, treatable stages. Early detection also allows for the timely initiation of appropriate treatments, thereby improving the patient's prognosis and overall quality of life (DeSantis et al., 2019). MRI, in particular, is

valuable for its high negative predictive value, which can rule out clinically significant cancers, thereby minimizing unnecessary interventions (Armonde Baghdanian et al., 2019).

However, despite the effectiveness of these screening techniques, participation in prostate cancer screening remains suboptimal, especially among high-risk populations such as African American men. This reluctance to engage in screening can be attributed to a range of factors, including limited knowledge about prostate cancer, fear of diagnosis, mistrust in the healthcare system, and cultural barriers (Mutua et al., 2017). Additionally, socioeconomic barriers such as lack of insurance, limited access to healthcare services, and inadequate healthcare infrastructure in underserved areas exacerbate the situation. These barriers prevent many individuals from undergoing routine screening and early detection, which ultimately affects their ability to benefit from timely interventions. Addressing these barriers and ensuring that prostate cancer screenings are accessible and culturally appropriate for all men, especially African American men, is essential for improving health outcomes and reducing health disparities.

Early detection of prostate cancer, facilitated by methods like PSA testing and Magnetic Resonance Imaging has been proven to lower mortality rates and guide treatment decisions (DeSantis et al., 2019). MRI, with its high negative predictive value, is effective in ruling out clinically significant cancer, ensuring that unnecessary interventions are avoided (Armonde Baghdanian et al., 2019). This early detection contributes to better treatment outcomes and addresses healthcare disparities by providing equal access to screening services (Nino Abashidze et al., 2021). Additionally, identifying prostate cancer at an early stage improves prognosis and survival rates, while enabling preventive measures and lifestyle changes to mitigate risk factors (Ellis et al., 2018). However, overdiagnosis, a potential concern emerging from early screening, can lead to needless procedures such as prostatectomy and radiation therapy (James et al., 2017)

PSA Screening

In 1994, PSA-based screening gained FDA approval for detecting high-risk prostate cancer in asymptomatic men. However, in 2012, the US Preventive Services Task Force (USPSTF) recommended against universal screening for all males due to perceived risks, as documented by Miller et al. (2021) and Chou et al. (2011). New recommendations emerged in 2018, suggesting that men aged 55-69 should have discussions with their healthcare providers to carefully consider the pros and cons of PSA-based screening, as highlighted by Grossman et al. (2018). The USPSTF relied on evidence from randomized clinical trials indicating that PSA-based screening could potentially prevent 1.3 prostate cancer-related deaths per 1,000 men screened over 13 years and reduce the occurrence of metastatic prostate cancer by 3 cases per 1,000 men screened (Taitt, 2018). The American Urological Association recommends that Healthcare providers can initiate prostate cancer screening and provide an initial PSA test to individuals aged 45 to 50 years. PSA screening for men under 40 but recommends routine screening for men aged 40 to 45 for high-risk individuals such as black men and people with history of PCa and germline mutation (American Urological Association, 2023; Aufferberg and Meeks, 2014).

Moreover, the American Cancer Society also recommends that Screening for prostate cancer should include an informed decision-making process. At the age of 50, information should be supplied to men with an average risk

profile should consider prostate cancer screening starting at the age of 45. However, individuals at a heightened risk, such as African Americans and those with a family history, should receive screening information at the age of 45., while those at much higher risk should receive it at the age of 40. This information can come from healthcare providers or culturally relevant sources, and patient choice aids can help patients make an informed testing decision (Smith et al., 2019).

A digital rectal examination (DRE) involves a rectal assessment conducted following specific procedures and protocols. In this examination, a physician or examiner uses a lubricated, gloved finger to feel inside the rectum. This technique is used to check for various conditions, including prostate cancer (PC). By conducting a DRE, the doctor assesses the state of the prostate gland, which is situated right before the rectum, by feeling for any enlargement, firmness, or unusual growths (Kowalik et al., 2012).

Consequently, the definitive method for diagnosing prostate cancer is through a tissue biopsy, given that PSA screening tests have shown limited clinical relevance in identifying the disease (Wade and Kyprianou, 2018). Moreover, varying guidelines for PSA screening have led to excessive testing and superfluous biopsies, which have become a point of concern in medical practice. (Pernar et al., 2019)

Furthermore, according to research by Leapman et al. (2022), African American males are more prone to being diagnosed with advanced-stage prostate cancer compared to their counterparts from other racial and cultural backgrounds. The observed variations in healthcare outcomes can be ascribed to disparities in healthcare accessibility, socioeconomic status, and patterns of healthcare utilization. Residential segregation is also associated with variations in the scheduling of diagnosis since African American men are more likely to reside in areas characterized by limited availability of healthcare resources (Poulson et al., 2020).

Despite having a greater incidence rate of prostate cancer and significantly higher mortality when compared to other ethnic groups, African American men are underdiagnosed for Prostate cancer hence the need to evaluate the influencing factors for adherence to prostate cancer screening among this high-risk group.

Objective of the study

i. To identify and categorize individual- associated factors that influence African American Men's decision to undergo or forego Prostate cancer screening using qualitative approach.

Qualitative Systematic Literature Review

These studies were appraised using the CASP tool (2018).

Hooper et al. (2017): The study clearly defines its goals to investigate the prostate cancer among African American males in rural locations. It employs a qualitative approach that is well-suited for gathering detailed personal narratives through Semi-structured interviews. The utilization of this methodology, in conjunction with theme analysis and the involvement of numerous reviewers, enhanced the trustworthiness of the findings. The recruiting, which involved local community leaders, was in perfect accordance with the study's objectives. Nevertheless, the sample size of 43 may not be adequate to generalize the findings to the entire population of rural African American men. Utilizing a sample size smaller than optimal heightens the risk of erroneously accepting a false hypothesis as valid. (Faber and Lilian Martins Fonseca, 2014). Convenience sampling may

introduce selection bias, and the emphasis on a particular population and locale may fail to encompass the wider spectrum of experiences.

The analysis adheres to a rigorous and naturalistic approach, effectively uncovering themes such as insufficient understanding of prostate cancer and diverse communication between patients and healthcare providers.

Nevertheless, the study's dependence on a convenience sample may restrict the applicability of the findings to a wider population due to potential disparities in characteristics between the sampled population and broader populations (Andrade, 2018). Employing an African American female interviewer, while promoting trust, may also introduce bias (Bergelson, Tracy and Takacs, 2022; Davis et al., 2009). Moreover, the study's reliance on self-reported data may include biases related to memory or a tendency to provide socially desirable responses. Additionally, the study's cross-sectional design restricts the capacity to observe long-term alterations in perceptions or behaviours (Wang and Cheng, 2020).

The study revealed that participants possessed limited knowledge concerning prostate cancer (PCa) and its screening procedures, often relying on information provided by family members who had encountered PCa. Furthermore, a common issue observed was the participants' tendency to conflate PCa screening with screenings for other types of cancers.

In terms of communication between patients and healthcare providers, participants reported experiencing varying degrees of effectiveness. Some individuals felt that communication improved when they proactively posed questions, while others described instances of hurried or inadequate communication during their healthcare visits. Additionally, the research emphasized that participants encountered difficulties with medical terminology and preferred simplified language when discussing healthcare matters. Several participants expressed challenges in comprehending the medical jargon used by healthcare professionals, underscoring the potential impact of low health literacy on hindering productive patient-provider communication.

Hunter, Vines & Carlisle (2015): The study effectively outlines its goals, which are to understand deeply held feelings, beliefs, and intentions influencing health behaviour specific to prostate cancer among African Americans, using a qualitative methodology that is ideal for exploring personal experiences through listening sessions, in-depth conversations, educational materials, which allows for the collection of extensive qualitative data. Furthermore, the recruitment method, which includes community health centres, churches, word-of-mouth, and posters, efficiently targets the right demographic while encouraging community involvement. Similarly, the study's methodological strength is enhanced by the rigor of data analysis, as evidenced by grounded theory and tools for iterative coding and theme creation processes. However, the study's sample, However, the study's 46-participant sample and convenience sampling method may restrict the findings' wider relevance, particularly since it focused on specific communities in North Carolina, potentially not reflecting the broader African American experience (Faber and Lilian Martins Fonseca, 2014). The listening session method may result in groupthink or social desirability bias, and relying on self-reported data raises the potential for recall bias or subjective interpretation (Althubaiti, 2016). The study's primary focus on perceptions and beliefs about prostate cancer risk and PSA testing may not cover all elements of healthcare behaviour, and its cross-sectional design limits the

observation of changing attitudes. Finally, the facilitator's position in group discussions may have an impact on the data collected, either leading or limiting the discussion, so influencing the study's findings and conclusions. The results of the study showed that most study participants acknowledged the significance of prostate cancer screening, understanding its potential benefits in terms of early detection and lifesaving potential. Despite this recognition, they were also acutely aware of the potential drawbacks associated with screening, such as the discomfort and pain often associated with biopsies. Many participants expressed fear and anxiety about these potential adverse outcomes, recounting painful or traumatic experiences related to biopsies. This fear of physical discomfort during medical procedures emerged as a substantial barrier to their willingness to undergo prostate cancer screening.

Furthermore, some participants held concerns about the impact of screening and subsequent treatments on their sexual function. The apprehension regarding potential sexual side effects served as a deterrent, dissuading them from considering screening as a viable option for prostate cancer detection.

Ogunsanya et al. (2016): The study aims to comprehensively comprehend the attitudes of young Black males towards prostate cancer screening. Focus groups, that aligns with its qualitative methodology, was utilized to capture the personal ideas and impressions of this demographic. The utilization of recruitment strategies targeting universities and communities in Austin, Texas, aligns effectively with the study's exploratory nature. Additionally, the implementation of the focus group methodology is well-suited for the research objectives (Khosravi and Saeedi, 2015).

Nonetheless, the Nevertheless, this study is constrained by a small sample size of only 20 participants and the utilization of convenience sampling, which could potentially affect the generalizability of the findings. The dynamics of the focus group may result in biased replies that are impacted by social pressure (Goldberg et al., 2019). The participant demographics exhibit a deficiency in variety, and the cross-sectional design of the survey precludes the ability to monitor changes in opinions over time. The talks may have been influenced by moderators and focused on specific subjects, thereby shaping the outcomes. Additionally, the dependence on self-reported data without verification procedures could impact the dependability of the findings (Pannucci and Wilkins, 2011). Participants identified several advantages of prostate cancer screening, including the knowledge of one's cancer status, early detection, peace of mind, and the eventual necessity of the process. However, they also expressed disadvantages, such as concerns about the cost, invasion of privacy, stigma, emasculation, and fear associated with screening. In terms of comfortability with prostate examinations, participants preferred having female healthcare practitioners conduct the examinations and including them as part of regular physicals. They emphasized the significance of a positive first-time experience and the professionalism of healthcare providers. On the other hand, participants highlighted discomfort factors, including the awkwardness of the process, being touched in sensitive areas, concerns about appearing weak or macho, and the idea of being sedated during exams.

Study Design

A Systematic Literature Review (SLR) is a systematic method used to gather, identify, and assess existing research studies through a structured examination and critical analysis of the available literature (Carrera-Rivera et al., 2022).

Search Strategy

According to Frandsen et al. (2020), the PICO framework is a valuable tool for developing research questions, developing search strategies, and obtaining supplementary information.

However, the PEO framework was adopted to answer the Research question: "What are the key factors influencing the uptake of prostate cancer screening among African American men?"

Population: African American Men in USA

Exposure: Factors influencing prostate cancer screening uptake (e.g., Cultural, Socioeconomic status, Health education).

Outcome: Impact of the identified factors on the uptake of prostate cancer screening.

To optimize the search and get a comprehensive range of relevant studies, the search query was built using Boolean operators (AND and OR) and truncations.

Study Selection

Setting inclusion and exclusion criteria for study participants is a critical and required stage in developing strong research protocols. Inclusion criteria are defined as the fundamental characteristics that researchers identify in a population to address their specific research questions. (Patino and Ferreira, 2018). Also, Researchers must decide on inclusion and exclusion criteria and assess how they will affect the study's external validity.

This study specifically focuses on African American men who have either never undergone prostate cancer screening before or have undergone screening at some point in time. **Inclusion Criteria**

Only the articles that focused on Adult African American Males

Studies must have a study population consisting predominantly of African American males. Studies that include participants from diverse racial or ethnic backgrounds are eligible if they report findings specific to African American men.

Only the articles focus on factors that influence the uptake of prostate cancer screening.

Only articles included must be published between 2013 and 2023.

Only the articles that are Primary Quantitative, qualitative, or mixed method studies, peer reviewed, surveys, and questionnaires authored in English.

Exclusion Criteria

All the papers focused on female children, female teenagers below 16, adult females of African American origin. Studies primarily involving non-African American populations, such as Caucasian, Asian, or Hispanic men, are excluded. However, studies that include diverse populations but do not present specific data for African American men will also be excluded.

All the papers not focused on factors that influence the uptake of prostate cancer screening.

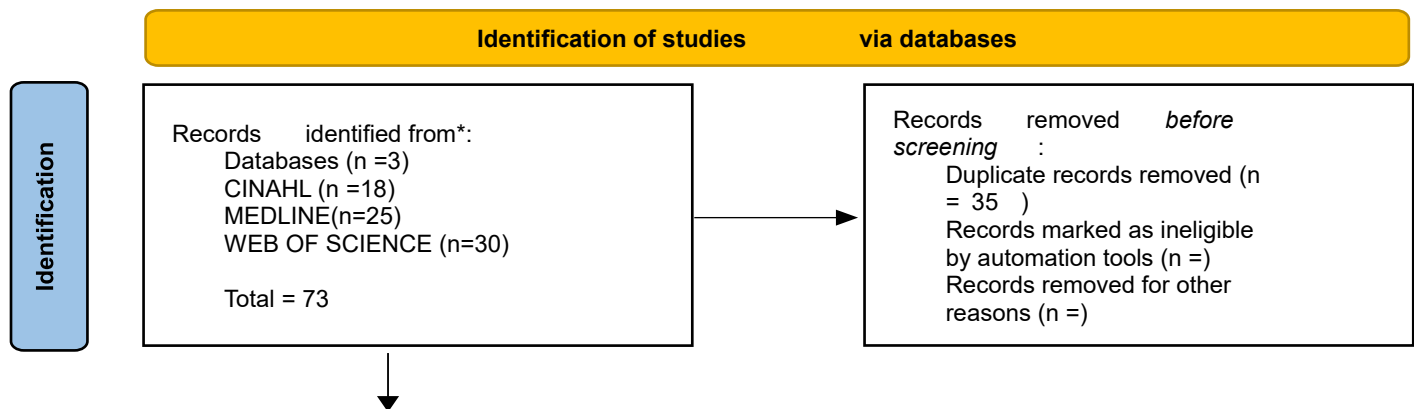
Every paper that was authored in a foreign language.

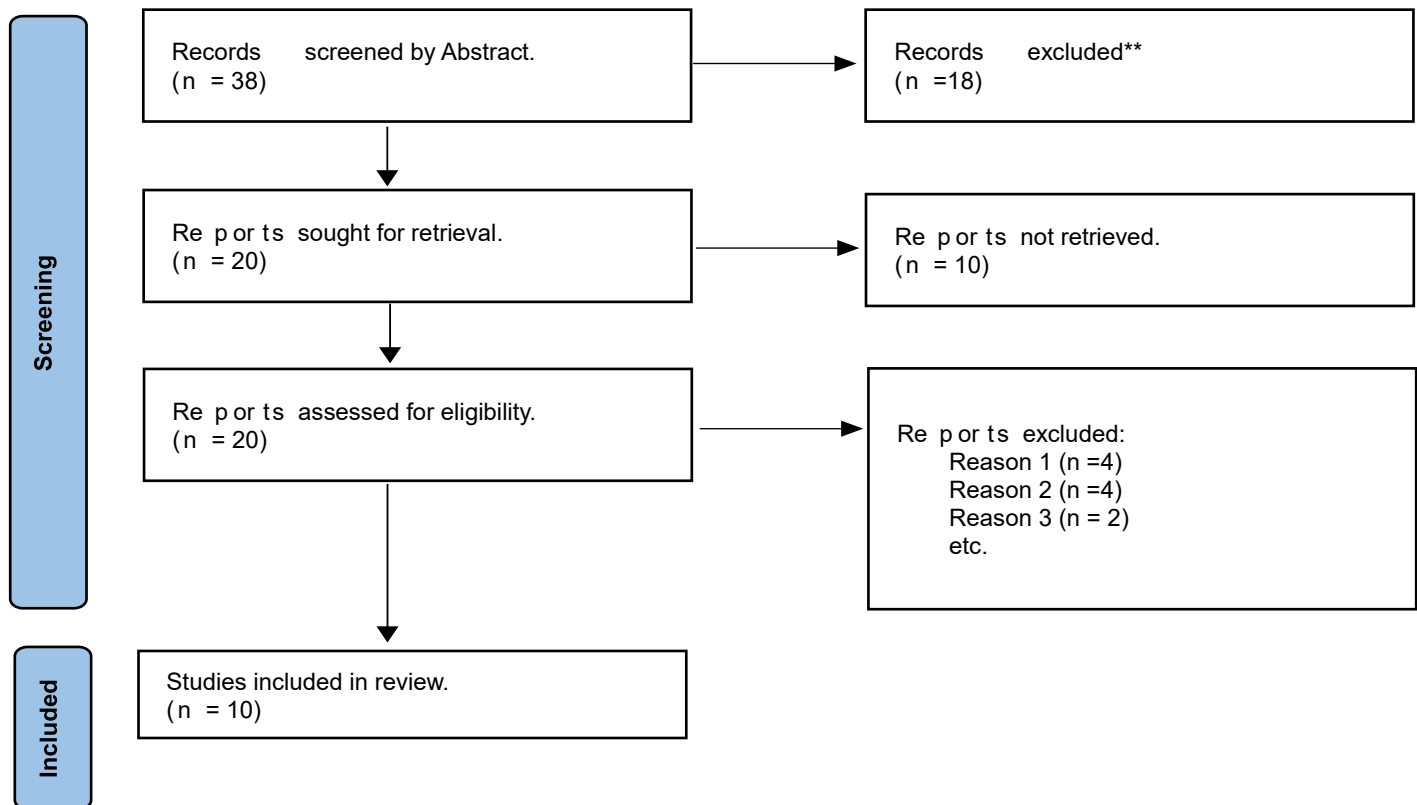
Case reports, dissertations, opinion pieces, editorials, and conference abstracts are not included in this review.

Study Selection

When initially searching the different databases by employing the different search terms in advanced search settings, CINAHL yielded 648 articles, Web of Science 678, and Medline 648. Several filters were applied such as 10 years of publication, language, and gender. This resulted in MEDLINE 302, Web of Science 370 and CINAHL 144 articles respectively. The resulting articles from each database were then screened by title and the articles that met eligibility by title were exported to Zotero citation manager to remove duplicates. A total of 73 articles were selected based on the title. After duplicates were removed by the Zotero citation manager the remaining 38 articles were screened by abstract. 18 articles were excluded for not meeting the inclusion criteria set. Full text screening of the remaining articles yielded the 10 articles included in this review.

Figure. 1 Prisma Flow Chart





Results and Findings

Characteristics of the Extracted studies:

After a systematic search of the several databases, and applying the inclusion and exclusion criteria, for this review, a total of 10 complete studies were selected and analyzed. The articles were conducted in different settings such as educational institutions, rural and urban areas. Participants age ranged from 18 to 75 years also, the lowest sample size had 14 participants while the highest sample size comprised of 485 participants.

The studies incorporated in this review encompass diverse categories, each providing distinct perspectives on the research subject:

Qualitative studies: The review also incorporates qualitative studies, including:

- i. Hooper et al. (2017). ii. Hunter, J.C., Vines, A.I., and Carlisle, V. (2015).
- iii. Ogunsanya et al. (2016).

Results

The study aimed to identify the factors associated with prostate cancer screening among African Americans. The approach was to aggregate, scrutinize, and integrate the existing body of research in this field, thereby deepening our understanding of the various factors that shape screening practices within this group. This investigation is particularly critical considering the pivotal role of early detection in enhancing prognostic outcomes for prostate cancer.

According to Braun and Clarke (2022, pp.77–101) thematic analysis which comprises of systematic process of coding data to develop themes for the development, analysis, and interpretation of patterns across a qualitative dataset. This method of data analysis was used to develop themes as shown below.

Individual-Related Factors

- i. **Knowledge and Awareness:** The studies underscore a critical knowledge gap among African American men regarding prostate cancer. Malika et al. (2021) highlighted a lack of understanding about key risk factors such as age and family history. Similarly, Hunter, Vines, and Carlisle (2015) pointed out the limited awareness of the aetiology and pathogenesis of prostate cancer. Miller et al. (2020) and Ekundayo, Tataw & Qobadi (2015) reinforced these findings, noting a significant deficiency in understanding both general and specific aspects of prostate cancer and its screening, including symptoms and risk factors. Hooper et al., 2017 reported that the participants consistently expressed a deficiency in their understanding of Prostate Cancer (PCa) and the process of screening for it. This gap in knowledge is a fundamental barrier to informed decision-making and proactive health behaviour.
- ii. **Psychological Barriers:** These studies reveal profound psychological barriers impacting screening uptake. Malika et al. (2021) and Cobran, Haul, and Alken (2017) identified fear and anxiety associated with the screening process, particularly the Digital Rectal Exam (DRE), and concerns about cancer diagnoses. This fear often stems from misconceptions about the screening's invasiveness and implications for masculinity and sexuality. Hunter, Vines, and Carlisle (2015) and Ogunsanya et al. (2016) observed additional fears regarding the repercussions of screening, such as negative side effects and privacy invasion, which further dissuade men from undergoing screening.
- iii. **Cultural and Socioeconomic Influences:** Cultural norms and socioeconomic status emerge as significant influencers in screening behaviours. Cobran, Haul, and Alken (2017) reported a cultural pattern of

infrequent medical consultations, influenced by family practices and upbringing. This norm contributes to a lower propensity for seeking preventive health measures like cancer screening. Financial concerns, highlighted by Ogusanya et al. (2016) and Hararah et al. (2014), including the costs associated with screening and potential treatments, pose additional barriers, particularly for those with lower income and education levels. Hararah et al. (2014) further discussed the correlation between lower educational attainment and increased cancer fatalism, which can negatively impact screening uptake.

- iv. **Demographic Factors:** Demographic factors such as marital status, religion, employment status, and family history significantly influence prostate cancer screening decisions. Ekundayo, Tataw & Qobadi (2015) and Malika et al. (2021) found that these factors play a crucial role in determining an individual's likelihood of undergoing screening, with family history being particularly influential.

Discussion

Individual-Associated Factors

In the context of prostate cancer (PCa) among African American men in the USA, knowledge emerges as a critical factor influencing the uptake of screening. Multiple studies (Cobran, Haul & Alken, 2017; Hooper et al., 2017; Hunter et al., 2015; Miller et al., 2020; Malika et al., 2021) consistently highlight a lack of understanding regarding prostate cancer, its associated risk factors, and the significance of screening as a substantial barrier. This knowledge gap is often linked to educational disparities, as evidenced by Jones, Stephen, and Williams (2009), who found that Men possessing a lower degree of educational attainment. were less informed about PCa, exposing them to higher prevalence risks within the African American community. This aligns with findings from international studies, such as those conducted in South Africa and Nigeria by Maladze et al. (2023) and Ojewola et al. (2017), respectively, indicating that poor knowledge and awareness of PCa, particularly in rural areas, are prevalent barriers among black men globally.

Hooper et al., 2017 reported that the participants consistently expressed a deficiency in their understanding of PCa and its screening process. Furthermore, in their study, Ogunsanya et al. (2017) reported a significant gap in knowledge among a sample of Black patients regarding prostate cancer. This included a lack of awareness about the disease's symptoms, PSA testing, the recommended ages for screening, and the expected quality of life following treatment. Furthermore, in the study by Arnold-Reed et al. (2008), a notable lack of awareness about prostate health was identified among men in Australia. Many participants were unaware of the prostate's function, did not recognize prostate cancer as a prevalent cancer among men, lacked information on treatment options, and were not familiar with the potential side effects of these treatments. This study highlights the need for increased

educational efforts regarding prostate health and cancer awareness. However, existing research indicates that men with a deeper understanding of prostate cancer tend to participate more in screening activities. (Pedersen, Armes and Ream, 2011).

Many African American men, despite the emphasis on informed decision-making in early detection of prostate cancer, may not be making fully informed choices regarding early detection strategies for the disease. This issue is accentuated by recent research findings, highlighting a gap in the current approach to prostate cancer prevention (Woods-Burnham et al., 2018). This situation arises in part from the fact that patients often possess insufficient knowledge about the early detection of prostate cancer. Luckenbaugh and Moses (2019) have recently proposed that health literacy might play a role in the less-than-optimal patient outcomes and decision-making processes seen in individuals with urological cancers, including prostate cancer. This suggestion points to the potential impact of health literacy on patient health and treatment choices in these contexts. While these studies highlight the commonality of poor knowledge as a barrier, there are variations in the contributing factors. Socioeconomic disparities, particularly in educational access, appear to compound the knowledge gap in the USA. Moreover, the perception of discomfort associated with digital examination, as identified by Romero et al. (2008), presents an additional layer to the knowledge barrier. This discomfort perception emphasizes the psychosocial aspect of knowledge barriers and underlines the need for a holistic understanding of the factors influencing prostate cancer screening uptake.

These findings call for tailored public health interventions that not only address informational gaps but also consider the broader contextual factors shaping perceptions and attitudes toward prostate cancer screening among African American men. This comprehensive approach is crucial for designing effective strategies that resonate with diverse communities and facilitate informed decision-making regarding prostate cancer prevention and early detection.

Socio-economic factors

Prostate cancer remains a formidable challenge for public health, particularly among Black men who face elevated risks. Socio-economic factors, notably income and education, play a crucial role in shaping the landscape of prostate cancer screening uptake within this demographic. This discussion synthesizes findings from studies conducted both in the USA and other countries to provide a comprehensive understanding of the socio-economic barriers and facilitators influencing prostate cancer screening.

In the United States, several studies from this finding underscore the intricate relationship between socio-economic status and prostate cancer screening awareness and utilization. Research by Cobran, Haul, and Alken (2017), Hooper et al. (2017), Hunter et al. (2015), and Miller et al. (2020) consistently highlight that lower income

and educational attainment contribute to a lack of knowledge about prostate cancer and screening methods. These socio-economic disparities intersect, leading to unaffordability of healthcare services, hindering timely screenings, and exacerbating the prevalence of prostate cancer. Kim and Alhassan (2023) further emphasize the critical role of household income, reporting that low financial resources are a significant barrier to accessing the healthcare system. Chornokur et al. (2010) highlight that socio-economic factors play a crucial role in influencing health-seeking behaviours. Watson et al. (2017) observed that patients with lower socio-economic status have reduced access to healthcare resources, with White men in lower-income populations more likely to receive PSA monitoring. Similarly, Moses et al. (2017) also found that in these demographics, White men had higher chances of undergoing PSA monitoring compared to Black men.

African Americans are often reported to have lower levels of educational achievement, employment status, and adequate healthcare insurance. These socio-economic conditions may lead to restricted access to health screenings and limited healthcare options, impacting their health choices and outcomes.

Conversely, Halbert et al. 2017 noted that higher education and higher income were associated with increased likelihood of PSA testing.

The findings in the USA find resonance in studies conducted in African and Caribbean countries. Maladze et al. (2023) in South Africa and Ojewola et al. (2017) in Nigeria reveal that poor knowledge and awareness of prostate cancer, particularly in rural areas, is linked to low socioeconomic status. These findings mirror the challenges faced by Black men in the USA, demonstrating a global pattern where lower income and education hinder access to essential healthcare services.

However, it is noteworthy to consider the role of healthcare structures in mitigating or exacerbating socio-economic disparities in cancer screening. A study among Black men in the UK, as highlighted by Jones and Chinegwundoh (2014), indicates that although low socio-economic status is prevalent, it does not necessarily act as a common barrier to cancer screening. The widely accessible health-care structure of the NHS facilitates easy access, overcoming financial and educational barriers.

The collective evidence points to the urgency of addressing socio-economic factors to enhance prostate cancer screening among Black men globally. Interventions should recognize the nuanced interplay between income, education, and healthcare access. Initiatives focusing on education and awareness campaigns tailored to low-income communities, coupled with financial support from the government, are essential in overcoming the barriers posed by socio-economic disparities.

Cultural factors, Psychological and socio-economic factors

These studies reveal profound psychological barriers impacting screening uptake. Malika et al. (2021) and Cobran, Haul, and Alken (2017) identified fear and anxiety associated with the screening process, particularly the Digital Rectal Exam (DRE), and concerns about cancer diagnoses. This fear often stems from misconceptions about the screening's invasiveness and implications for masculinity and sexuality. Hunter, Vines, and Carlisle (2015) and Ogunsanya et al. (2016) observed additional fears regarding the repercussions of screening, such as negative side effects and privacy invasion, which further dissuade men from undergoing screening. In the study conducted on Indo-Guyanese men by Persaud et al. in 2020, participants expressed that their fear of receiving a negative health diagnosis, which included concerns about prostate cancer, acted as a significant barrier preventing them from actively engaging in healthcare activities. This sentiment finds substantial support within the existing body of research.

This is in concordance with numerous research works that have pinpointed determinants linked to prostate cancer (PCa) screening. These include apprehensions about the perceived intrusiveness of Digital Rectal Examinations (DRE), which may conflict with cultural beliefs, a phenomenon noted by James et al. 2017.

African American men's reluctance towards screening is largely attributed to specific cultural factors within their communities. These include experiences of racism in healthcare interactions, leading to a general mistrust in the medical system, and a noticeable scarcity of health-related information that is directly relevant and tailored to the needs of African American men (Forrester Anderson, 2005; Sanchez et al., 2007; Woods, Montgomery, and Herring, 2004).

Prostate cancer screening in Black men is profoundly influenced by socio-cultural factors, intertwining masculinity, sexuality perceptions, and cultural beliefs, creating a complex tapestry that significantly impacts screening rates. This comprehensive exploration delves into these multifaceted factors, drawing insights from studies conducted on Black men in the USA and other countries and meticulously examining commonalities, disparities, and the far-reaching implications for cancer screening prevalence.

Conclusion

In conclusion, this systematic literature review has comprehensively examined the multifaceted factors influencing the uptake of prostate cancer screening among African American men. The findings highlight a complex interplay of knowledge gaps, cultural perceptions, socioeconomic barriers, medical mistrust, and healthcare system challenges that collectively impact screening rates and outcomes in this population.

The review underscores the urgent need for targeted interventions that address these specific barriers. Enhanced community education and awareness programs are crucial for bridging knowledge gaps and dispelling misconceptions about prostate cancer screening. Culturally competent healthcare provider training is essential to

improve patient-provider communication and build trust. Making screening services more accessible and affordable can significantly increase screening uptake, particularly in underserved communities.

Prostate cancer remains a significant global health challenge, with substantial prevalence and mortality rates. Early detection through screening is crucial for improving treatment outcomes and survival rates, particularly among high-risk populations such as African American men. However, disparities in prostate cancer outcomes, driven by a combination of genetic, socioeconomic, and cultural factors, continue to hinder effective screening uptake. Understanding these barriers and addressing them through targeted interventions and systemic reforms is critical for improving screening participation and reducing the health disparities that disproportionately affect African American men. Through a comprehensive approach that includes both individual-level interventions and systemic changes, prostate cancer outcomes can be significantly improved, ultimately enhancing quality of life and reducing mortality rates in this vulnerable population.

Recommendations

In advancing research and practices related to prostate cancer screening within the African American male demographic, it is advisable to consider the following directives:

- i. **Expanding Geographic Scope of Studies:** It is imperative to incorporate a wide range of Black male participants from varied geographical locations and backgrounds in future research. This approach would broaden the generalizability and relevance of the research findings on a global scale.
- ii. **Implementation of Longitudinal Research Approaches:** Engaging in longitudinal research is crucial for gaining a deeper understanding of the dynamic and evolving factors that impact screening behaviours over extended periods.

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