

Prostate Cancer Screening Among African Immigrant Populations: Rates and Influencing Factors

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Abstract: **Background:** One in seven men will be diagnosed with prostate cancer during his lifetime. In 2015, there were 220,800 new cases of prostate cancer and 27,540 deaths in the US. Black men are 1.6 times more likely to be diagnosed with prostate cancer than Caucasian men and 2.4 times more likely to die of prostate cancer than any other group. Cancer disparities are well documented between African Americans and Caucasians, but there is little known regarding African immigrant subpopulations and Caribbean migrants. Studies have shown that African immigrant population's screen at very low frequencies, less than recommended. The objective of this study was to determine the rates of prostate screening amongst the African immigrant population and to determine the factors that affect screening uptake. **Methods:** Cross-sectional data from African Immigrant women who reside in Georgia were collected using a brief survey. Frequencies and descriptive statistics were conducted to characterize the sample in general and by prostate cancer screening. Univariate and multivariate logistic regression were performed to estimate unadjusted odds ratios and adjusted odds ratio respectively and the 95% confidence intervals. Analyses were conducted using SPSS. **Results:** Results from this study showed that 75% of participants completed college, 92% were employed full-time, 46% had a household income greater than 50,000/year. Yet, only 24% of the participants had ever screened for prostate cancer. Neither educational level, family history of prostate cancer, availability of health insurance nor availability of health information were significantly associated with an increased likelihood of prostate cancer screening. **Conclusion:** Our results suggest that more research is needed for this growing population about cancer screening behaviors in order to improve cancer outcomes. The research should include a larger sample with diverse African subgroups to inform future directions.

Keywords: prostate cancer, screening practices, African immigrant.

1. Introduction

Prostate cancer is the most common malignancy occurring in men, particularly, it is the second most common of all diagnosed cancers and represents the sixth leading cause of cancer death worldwide with 1,111,700 new cases of prostate cancer diagnosed and 307,500 deaths in 2012. In Europe, there were 400,364 new cases and regarding mortality, there were 92,328 deaths in 2012. In 2015, it was estimated that 3,037,127

Italians had been previously diagnosed with cancer and 398,708 were previously diagnosed with prostate cancer [1]. Due to the aging population and population growth, the expected numbers will increase in forthcoming years. Thus, prevention and early detection are of immense importance to public health. Currently, there is no scientific consensus on effective strategies to reduce the risk of prostate cancer. The prostate-specific antigen (PSA) test is widely used to screen for prostate cancer but its use is controversial for several reasons [1].

African-born immigrants are among the fastest-growing immigrant groups in the US. They consist of approximately 1.6 million of the 40 million foreign-born people who resided in the United States in 2012. Many of these immigrants recently migrated to the US from West and East Africa [36 and 30%, respectively] [2]. The European Randomized Study of Screening for Prostate Cancer [ERSPC] reported a significant reduction in prostate cancer mortality with PSA screening. On the other hand, the Prostate, Lung, Colorectal, and Ovarian [PLCO] Cancer Screening Trial showed no significant reduction in mortality with early prostate cancer screening. The American Cancer Society recommends disclosing all benefits, risks, and potential concerns of prostate cancer screening to people at high risk [3].

A. Risk Factors of Prostate Cancer

According to the American Cancer Society, about 1 in 8 men will be diagnosed with prostate cancer during their lifetime. However, each man's risk of prostate cancer varies based on age, race or ethnicity, and other factors [4].

Age: About 6 in 10 prostate cancers are diagnosed in men who are 65 or older, and it is rare in men under 40. The average age of men when they are first diagnosed is about 67.

Race: Prostate cancer develops more often in African American men and in Caribbean men of African ancestry than in men of other races. And when it does develop in these men, they tend to be younger [4].

Heredity: The ACS reports prostate cancer seem to run in some families, which suggests that in some cases there may be an inherited or genetic factor. Having a father or brother with prostate cancer more than doubles a man's risk of developing

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this disease. [The risk is higher for men who have a brother with the disease than for those who have a father with it.] The risk is much higher for men with several affected relatives, particularly if their relatives were young when the cancer was found [4].

B. Prostate Cancer Screening

A blood test called a prostate-specific antigen [PSA] test measures the level of PSA in the blood. PSA is a substance made by the prostate. The levels of PSA in the blood can be higher in men who have prostate cancer. The PSA level may also be elevated in other conditions that affect the prostate. As a rule, the higher the PSA level in the blood, the more likely a prostate problem is present. But many factors, such as age and race, can affect PSA levels. Some prostate glands make more PSA than others [5]. There are more debates surrounding the benefits of prostate cancer screening than there are for other types of cancer screening. While there are controversies associated with routine prostate cancer screening and its specificity, evidence suggests that screening is beneficial in men with familial [high] risks or at least with one first-degree relative with prostate cancer [6]. African immigrants have lower screening rates of breast, prostate, colorectal and cervical cancers compared to African Americans, even though both groups have screening rates lower than recommended [2].

C. Prostate Cancer Among African American Men

Prostate cancer is the most diagnosed cancer in African American men, yet prostate cancer screening regimens in this group are poorly guided by existing evidence, given the underrepresentation of African American men in prostate cancer screening trials. It is critical to optimize prostate cancer screening and early detection in this high-risk group because underdiagnosis may lead to later-stage cancers at diagnosis and higher mortality while overdiagnosis may lead to unnecessary treatment. Recent trends in prostate cancer incidence suggest that widening cancer disparities mean a greater number of prostate cancers in Black men. Black men, including US-born and Black immigrants, have the highest prostate cancer incidence and mortality rates of all racial groups. Notably, Black men at diagnosis tend to present with more aggressive or advanced-stage prostate cancer [6]. This disparity consistently extends to a high proportion of the Black male population and may be driven by a combination of genetic, environmental, social, and economic factors, all of which contribute to widening cancer disparities as a whole [7]. Black men have a higher mortality for prostate and colorectal cancers than Caucasians, a phenomenon that is partly attributable to early onset, and late diagnosis of the disease [2].

Accessing the United States healthcare delivery system to receive necessary treatment for prostate cancer, such as screening for the disease with PSA testing, is a barrier that persists within the Black American community. Access to care is one of the most challenging aspects of seeking medical attention [8]. Georgia, particularly areas with high African American populations like Fulton and DeKalb counties, experiences disparities in healthcare access and prostate cancer

screening [8].

2. Methods

A Cross-sectional study that utilized semi structured questionnaires was conducted as a community-based collaborative project between an academic health center, Morehouse School of Medicine, a community-based organization Redeemer's Medical Center (RMC) and its parent church. This project was a part of a health educational campaign provided to a predominantly African immigrant population. This community-Based Participatory collaboration evolved as an outcome of the RMCs participation in the Satcher Health Leadership Institute's nationally recognized Community Health Leadership program (CHLP). This study was included in the RMC's health educational outreach program, which occurs quarterly, at the RMC site which is in proximity to public transportation.

A. Program Participants

RMC and its parent church were deemed excellent community partners on this project because its clientele consists predominantly of African immigrants, and the relationship between religiosity and health is well documented among African immigrants [9]. This study was reviewed and approved by the Morehouse School of Medicine's Institutional Review Board (IRB). The data were coded with anonymous identification numbers, and names and other personal identifiers were not collected in the questionnaire, nor were the data linked to any medical records. All information collected were kept and processed as confidential by the research team.

B. Data Collection

Self-administered semi-structured questionnaires were utilized to collect study data. The instrument was designed to provide insight on the cervical cancer screening practices within this population, and to prioritize possible health interventions to mitigate poor screening practices.

C. Measures

The questionnaires that took approximately 10 minutes to complete were available in English, and trained volunteers were available on request to assist participants who required help in completing the surveys. The survey included questions on demographics, healthcare access, diagnoses, practices and family history of breast cancer.

D. Data Analysis

Data were analyzed using IBM SPSS Statistical Package (version 25). Data analysis included descriptive statistics to examine participant demographics and other study variables of interest.

3. Result

The table 1 shows the results.

Table 1

Characteristics	Ever Screened for Prostate Cancer			Total (n)
	Yes	No	I Don't Know	
Age				
18-25	1	11	1	13
25-33	2	11	0	13
33-45	9	34	0	43
>45 years	11	13	0	24
Education				
No formal education	0	0	0	0
High School Diploma	0	5	0	5
Some College Education	2	15	1	18
Completed College	21	50	0	71
Occupation				
Unemployed	0	7	0	7
Self-Employed	7	31	0	38
Employed but not self-employed	16	32	1	49
Retired	0	0	0	0
Level of Household Income				
Less than \$25,000	1	19	0	20
\$25,000-\$49,000	5	23	1	29
>\$50,000	16	28	0	44
Marital Status				
Single	5	29	1	35
Married	16	38	0	54
Living Together	1	2	0	3
Divorced, separated, widowed	0	1	0	1
Have you ever heard of Prostate Cancer Screening? How did you hear about it?				
Doctor	16	22	0	38
Nurse	1	1	0	2
Family Member	1	6	0	7
Radio, Television, or newspaper	3	31	1	35
How Often should a man be screened after the age of 40?				
Once per year	21	49	0	70
Only if he has signs of prostate cancer	0	1	0	1
I don't know	2	19	1	22
Are you aware of any tests available for prostate cancer checkups?				
Yes	20	34	0	54
No	0	36	4	40
If you answered "yes", which tests are you aware of?				
Prostate Specific Antigen (PSA)	10	18	0	28
Digital Rectal Exam (DRE)	6	7	0	13
Ultrasound	1	3	0	4
Do you think any of the following are prostate cancer risk factors?				
Being over 40 years old	11	28	1	40
Being a black man	3	9	0	12
Having a family history of prostate cancer	2	19	0	21
Eating a high fat diet	0	1	0	1
Do you think any of the following are symptoms of prostate cancer?				
Frequent urination, especially at night	9	18	0	27
Trouble starting or holding back urination	0	5	0	5
A weak flow of urine	1	6	0	7
Painful or Burning urination	0	4	0	4
Blood in the urine or semen	2	6	0	8
Problems getting an erection	1	2	0	3
Constipations or changes in bowel habits	0	2	0	2
Pain in the lower back, groin, between scrotum and rectum or upper thighs	2	3	0	5
If you have not gotten a prostate exam, what has prevented you?				
Afraid to get the test	0	2	0	2
Too expensive	2	5	0	7
Embarrassed	0	1	0	1
No Transportation	0	0	0	0
No symptoms	6	36	0	42
Lack of Information	2	20	1	23
Have you seriously thought about being checked for prostate cancer?				
Yes	16	25	0	41
No	5	40	1	46
I don't know	0	1	0	1
Will you get checked in the next six months?				
Yes	14	27	0	41
No	1	19	1	21
I don't know	5	21	0	26

Do you think prostate cancer runs in your family?				
Yes	4	5	0	9
No	19	65	1	85
Do you try to eat low fat diet?				
Yes	20	48	0	68
No	3	20	1	24
Do you rely on your faith or religion to keep you healthy?				
Yes	7	28	0	35
No	16	38	1	55
Do you worry about getting prostate cancer?				
Yes	10	15	0	25
No	13	55	1	69
Do you worry that prostate cancer would affect your sexual function?				
Yes	14	22	0	36
No	9	47	1	57

4. Discussion

Prostate cancer screening rates increase dramatically with age, as the table illustrates. For example, a mere 7.7% of males between the ages of 18 and 25 have been screened, whereas 45.8% of men over 45 have been screened. The percentage of unscreened males declines with age, from 84.6% among the youngest to 54.2% among the oldest, reflecting this pattern. Increased screening rates are also linked to increased educational attainment, most likely because of improved access to healthcare services and health information. To increase screening rates, it is necessary to inform those with less knowledge about the dangers of prostate cancer.

Prostate cancer screening occurs at different levels based on the amount of formal education patients have received. Non-college-educated males show the lowest prostate screening behavior at 0% whereas college graduates achieve the highest rate at 29.6%. The screening rates of individuals who finished some college amounted to 11.1%. Higher education leads to better healthcare services accessibility together with greater health awareness thus resulting in increased screening numbers. Increased prostate cancer screening rates require less formally educated communities to receive awareness about the hazards of this cancer.

Statistical data shows that self-employed individuals (18.4%) along with people who work (32.7%) exhibit higher prostate cancer screening rates than unemployed people who refrain from disclosing their screening practices. Employment status significantly influences access to healthcare services by providing financial stability and employer-sponsored health insurance. For the unemployed, the cost of screenings and lack of awareness about the importance of these examinations are major barriers to receiving necessary health checks.

The screening rate for prostate cancer stands at 36.4% among male earners who make beyond \$50,000 annually yet remains significantly lower at 10.5% among those earning less than \$25,000 yearly. As income increases, the likelihood of not being screened decreases. Financial restrictions faced by people with lower incomes lead them to prioritize other expenses over health screenings which results in income having a strong impact on healthcare services and screening access.

Married men showed the highest rate of prostate cancer screening at 29.6%, while divorced, separated, or widowed men reported no screenings. Single men comprised the largest group

of individuals who had never undergone testing, at 82.9%. Married individuals are often motivated by their spouses to seek medical care, whereas single individuals may lack these support networks and incentives for preventive health actions.

Most individuals participating in the study understand the existence of prostate cancer examination tests including PSA and DRE but individuals who have undergone testing show higher levels of awareness. Among those who avoid prostate examinations, the main reasons are the absence of symptoms (42%), and insufficient awareness (23%), with cost being another significant obstacle for some. Data showed that educational level, family history of prostate cancer, health insurance availability, and access to health information did not significantly influence the likelihood of undergoing prostate cancer screening.

5. Conclusion

Our findings underscore a pressing need for comprehensive research focused on the cancer screening behaviors of the increasingly diverse African subgroups. This demographic, rich in cultural and socio-economic variations, faces unique challenges that can significantly influence their engagement with cancer prevention and early detection services. To truly enhance cancer outcomes, it is imperative to understand the specific barriers—ranging from access to healthcare facilities, awareness of screening benefits, to cultural attitudes towards medical interventions—that these communities encounter. Future research should strive to encompass a broader and more representative sample, capturing the intricate dynamics within various ethnic groups and socio-economic strata. By delving into the cultural, educational, and systemic factors that shape these health behaviors, we can formulate targeted and effective strategies aimed at improving awareness and accessibility of cancer screening services, ultimately fostering better health outcomes for these vulnerable populations.

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