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Prostate Cancer Knowledge, Prevention, and Screening Behaviors in Jamaican Men

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Abstract Screening is the only effective method of reducing prostate cancer mortality. Several reports have documented poor prostate cancer awareness and screening practices in Jamaican men. The Jamaica Cancer Society provides the most organized and largest form of screening in Jamaica and hosts an annual mass screening clinic on Prostate Cancer Awareness Day in September. We sought to determine the knowledge and attitudes towards screening and risks and prevention of prostate cancer. The study represented a cross-sectional analysis of 55 men presenting for screening on Prostate Cancer Awareness Day, September 2014 in Kingston, Jamaica. Information on prostate cancer knowledge and attitudes towards screening was obtained using interviewer-administered questionnaires (The Integrative Model of Prostate Cancer Disparity (PIPCaD). Prostate specific antigen (PSA) and digital rectal examination (DRE) were obtained from all patients. Mean PSA of participating men was 1.5 ± 1.48 ng/ml. Fifteen percent of men surveyed had a family history of prostate cancer. Prostate cancer knowledge was moderate, with at least 84 % of men responding correctly to 5 of 10 questions referring to prostate cancer risk and prevention. Most men had a favorable attitude towards screening. Starch formed the major portion of the diet in 68 % of men and 35 % of men engaged in no physical activity. Jamaican men surveyed have moderate prostate cancer knowledge and a positive attitude towards screening and prostate cancer prevention activities. However, the application of activities for potential prevention of modifiable risk factors is poor.

Keywords Prostate cancer · Screening · Knowledge

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Introduction

It is undoubtable that prostate cancer is a major illness in Jamaica. With a reported incidence rate of 78.1 per 100,000 [1] and a mortality rate of 53.9 per 100,000 [2]. Black race is a major risk factor for the disease in the over 90 % of men of African descent residing in the island. Screening for prostate cancer, through annual prostate specific antigen (PSA) and digital rectal examinations (DRE) commencing at age 40 years provides the only way to reduce mortality from the disease [3, 4]. In the USA, screening has led to a down-staging of prostate cancer, with over 90 % of men presenting with localized and potentially curable disease at presentation [5]. However, evidence in Jamaica still suggests that most men present with symptomatic disease at diagnosis (metastatic or locally advanced) [6]. Several barriers to effective screening have been described. These include fatalism [7] cultural views and expectations of manhood, poverty, ignorance, apathy, fatalism, stoicism, denial of risk, difficulty accessing preventive care, and specific issues related to the DRE [8].

Several studies have demonstrated poor knowledge and attitudes regarding prostate cancer screening even among medical professionals in Jamaica [9, 10]. However, McCree-Hale et al. were able to successfully evaluate a theory-based health education intervention to increase awareness of prostate cancer in men in Western Jamaica [11]. Information behavior research recognizes that the knowledge that people use to make health decisions come from active information searching and passive information acquisition [12]. For

prostate cancer, this information is acquired through the mass media and interpersonal sources. Cancer control experts recommend that both channels be used in a complementary fashion and that physicians be included among interpersonal sources because they are the producers of gold standard cancer prevention and control information. The Jamaica Cancer Society and the Jamaica Urological Society work synergistically to increase prostate cancer knowledge in Jamaica through use of the mass media and interpersonal sources. Though prostate cancer screening is not a national policy, several primary care physicians will counsel men about risk factors and prevention of prostate cancer.

We sought to determine the knowledge and attitude towards prostate cancer screening and prevention in a select group of men presenting for mass screening at the Jamaica Cancer Society on Prostate Cancer Awareness Day.

Methods

Three hundred (300) men presented for mass screening at the Jamaica Cancer Society on September 25, 2014 and were eligible for the study. The study conducted consisted of a convenience sample of 55 men who presented for the prostate cancer screening event, consented for the study, and were able to complete the survey instrument. Cross-sectional data was collected from participating men who completed an interviewer-administered questionnaire.

September is recognized internationally as Prostate Cancer Awareness Month. In order to increase public education about the fatal disease, the Jamaica Cancer Society increases its public education campaigns by partnering with members of the Jamaica Urological Society to convey information. For several years, the Jamaica Cancer Society has been organizing a mass screening event on Prostate Cancer Awareness Day with the aim of providing screening for men at risk of prostate cancer at a subsidized rate and also educating the public about the disease. The mass screening clinic is held on the premises of the Jamaica Cancer Society, Lady Musgrave Road, Kingston, Jamaica. Members of the Jamaica Urological Society provide voluntary services DRE and PSA analysis to all men presenting for screening and the Jamaica Cancer Society organizes subsidized screening and laboratory services (PSA) on the selected day. All men screened on Prostate Cancer Awareness Day are reviewed by urologists at the regular screening clinics held at the Jamaica Cancer Society within 1 month and their DRE and PSA findings are discussed. Men who have abnormal DREs and/or PSAs are sent for trans-rectal ultrasound-guided biopsies at a separate location and the final report is reviewed with the urologist at the Jamaica Cancer Society clinic. Men diagnosed with prostate cancer are referred to public or private facilities to have definitive treatment.

Eligibility Criteria

Eligible men were those who were at least 40 years of age, without a diagnosis of prostate cancer who presented for screening at the Jamaica Cancer Society.

Survey Instrument

The questionnaire utilized is the PIPCaD (Integrative Model of Prostate Cancer Disparity) survey instrument [13]. It is a validated questionnaire that is currently being used in a "Prostate Cancer Disparity Study for African American Men" by the College of Pharmacy and Pharmaceutical Sciences, Florida Agricultural and Mechanical University in five locations (Jacksonville, Miami, Orlando, Tallahassee, and Tampa). The survey instrument contains questions 3 domains to determine attitude towards prostate cancer prevention and screening behaviors. Though no pilot testing was done in Jamaica before use, there were adjustments made to the questionnaire (Demographics section, part 3) to ensure culturally relevant data was obtained.

Data

DRE and PSA findings for all participating men were documented.

Statistics

Summary values were expressed as counts, mean ± sd or medians as appropriate. Data were analyzed using Stata 12 for Windows (College Station, USA).

Results

PSA

Mean PSA of participating men was 1.5 ± 1.48 ng/ml (range 0.23–6.79).

DRE

All prostate exams were recorded as benign-feeling.

Prostate Cancer Prevention Behavior—Diet

Sixty-eight percent of men interviewed admitted that starch formed the largest portion of their meal. Table 1 reports the frequency of ingestion of various food constituents 1 week preceding the interview.

Table 1 Food frequency ingestion over 1 week by study participants

	Never (%)	1–3 times/week (%)	4–6 times/week (%)	Once daily (%)	2 or more times a day (%)
1. Fruit (fresh, canned or juice but not sodas).	9.8	41.2	11.8	19.6	17.6
2. Vegetables (such as greens, vegetable soup, stew, green salad, string beans, peas, corn, broccoli).	5.9	68.6	5.9	15.7	3.9
3. Meat products (such as beef, goat, chicken, pork, steaks, roasts, ribs, hamburgers, ground beef, hotdog, sausage).	7.8	56.9	19.6	9.8	5.9
4. Dairy products (such as milk, cheese, eggs).	16.3	65.3	6.1	10.2	2.1
5. Butter or oil on food or in cooking.	2.0	46.0	20.0	26.0	6.0
6. Selenium to prevent prostate cancer.	72.0	22.0	2.0	4.0	0
7. Lycopene to prevent prostate cancer.	73.0	20.0	4.0	2.0	1.0
8. Vitamin A and other retinoid to prevent prostate cancer.	68.7	8.3	2.1	18.8	2.1
9. Vitamin D to prevent prostate cancer.	74.0	10.0	2.0	12.0	2.0
10. Soy to prevent prostate cancer.	70.0	24.0	2.0	4.0	0

Prostate Cancer Behavior—Exercise

Thirty-five percent of participating men engaged in no exercise for 1 month prior to the interview. Table 2 reports the duration and frequency of exercise in the preceding 1 month before the study.

Attitude Towards Prostate Cancer Detection and Prevention

Over 88 % of study participants described their attitude to PSA and DRE screening, exercising and engaging in activities to prevent prostate cancer as favorable or very favorable.

Most participants (>50 %) strongly agreed that persons close to them (partner, friends, physician, pastor) would approve of their annual PSA and DRE screening as well as engaging in activities to prevent prostate cancer. In addition, most participants were likely to be influenced positively by these persons.

Table 2 Exercise frequency and duration of study participants in the previous 1 month

Exercise frequency	Percent
None	35
1–3 days per week	25
4–6 days per week	10
Daily	30
Exercise intensity	
No exercise	35
Mild	7
Moderate	43
Strenuous	15
Exercise duration	
No exercise	35
<20 min	5
20–39 min	9
40–60 min	19
60 min	32

Family History of Prostate Cancer

Only 15 % of surveyed participants reported a family history of prostate cancer (father—13 %, brother—2 %).

Prostate Cancer Knowledge

Prostate cancer knowledge was moderate, with at least 84 % of men responding correctly to questions 5 of 10 referring to prostate cancer risk and prevention (Table 3).

Discussion

We found that prostate cancer knowledge was moderate in men sampled at a mass screening clinic at the Jamaica Cancer Society. However, most men surveyed did not demonstrate a high level of behavior that is thought to reduce prostate cancer risk such as dietary modification and regular exercise. Most men had positive attitudes towards prostate cancer screening and prevention.

Prostate cancer has three non-modifiable risk factors: increasing age, family history, and black race. However, potentially modifiable risk factors are diet and exercise level. Physical inactivity has inconsistently been associated with increased prostate cancer risk [14]. It is theorized that physical activity increases sex-hormone binding globulin (SHBG) levels which may reduce prostate cancer risk [15]. A single prospective study showed an increased risk of prostate cancer in physically inactive black men [16]. Our study revealed that though 30 % of men exercised for an average of 40–60 min daily, as many as 35 % of men were physically inactive.

Table 3 Correct responses to prostate cancer knowledge questions by participants

Research questions	% answers correct
1. Prostate cancer is the most common cancer in men.	96
2. I should be able to tell immediately if I have prostate problem.	52
3. Black men are more likely to get and die from prostate cancer than any other men.	84
4. Having somebody in your family with prostate cancer increases the chance of getting prostate cancer.	84
5. Getting up often at night to pass urine may be a sign of prostate cancer.	29
6. A diet high in fat will decrease the chance of getting prostate cancer.	36
7. The two main tests for prostate cancer are the blood test called prostate specific antigen (PSA) and the digital rectal exam (DRE) where a gloved finger is placed in the rectum to feel the prostate.	90
8. Doing only one of the tests, prostate specific antigen (PSA) or the digital rectal exam (DRE), is enough to test for prostate cancer.	44
9. Early screening for prostate cancer cannot tell if one has prostate cancer.	50
10. It is often suggested that black men over the age of 40 should get tested for prostate cancer every year.	94

Despite the inconclusive data, strategies to improve knowledge about prostate cancer and exercise should be employed in the black population in Jamaica.

Our study demonstrated a low weekly intake of fruits and vegetables but revealed that starch accounted for the major portion of the diet of men surveyed. Diet has been implicated in the etiology of prostate cancer through a mechanism of increased inflammation. Evidence suggests that a diet high in refined carbohydrates increases prostate cancer risk [17]. Epidemiological studies show an inverse relationship between fruit and vegetable intake and risk of prostate cancer [18]. The Mediterranean diet which is high in fruits, vegetables, lean meat, olive oil, and complex carbohydrates is associated with a reduced risk of prostate cancer [19]. Perhaps increased dietary information regarding prostate cancer risk can be given to black men.

The study demonstrated a moderate prostate cancer knowledge content among surveyed men. However, several areas of deficiencies of prostate cancer knowledge were noted. Despite being surveyed at a screening event, most men still thought that screening may not be able to detect prostate cancer early. Several studies have shown overall poor prostate cancer knowledge in blacks, in particular Caribbean and African men [20–23]. Counterintuitively, Deibert reported that men who were engaged in seminars and programs on prostate cancer had no greater knowledge on the topic than those not exposed to these educational events [24]. There is a direct correlation between socio-economic status and prostate cancer knowledge [24]. Our study revealed that most participants were influenced by their partners, close family members, friends, pastor, and physician. We have also learnt that physicians may contribute significantly to prostate cancer knowledge in men; however, many men do not benefit from this [25, 26]. We suggest that strategies to increase prostate cancer knowledge among men may be increased by empowering close confidants and community of men.

The overall attitude towards screening and prevention of prostate cancer was high. However, we admit several limitations of our study. Sampling bias must be considered as surveyed men were volunteers who were recruited using a convenience sampling method from a mass screening event where prostate cancer education was ongoing. In addition, there was selection bias as recruited men were those who were able to travel to the JCS Kingston location and pay for the screening visit. This health care access and affordability bias may have neglected to observe differences in males who were not able to afford screening. We are also aware that the small sample size precludes us from making generalizations with the general population of men in Jamaica. In addition, our sampled men from urban Jamaica may have differences from the general population with respect to educational levels and health seeking and prevention attitudes. Despite this, we think that the information gained provides insight into the knowledge and attitudes of Jamaican men towards prostate cancer.

Conclusion

Jamaican men surveyed have moderate prostate cancer knowledge and a positive attitude towards screening and prostate cancer prevention activities. However, the application of activities for potential prevention of modifiable risk factors is poor.

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