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Knowledge and Awareness of Prostate Cancer Among the General Public in Burkina Faso

Fasnéwindé Aristide Kabore · Timothé Kambou · Barnabé Zango · Ali Ouédraogo

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Abstract The lack of awareness about prostate cancer and other prostate-related issues has been identified as a cause of low survival and higher mortality rates among black men. The aim of this study is to assess the knowledge of prostate cancer (PCa) among men in the general public, in the main city of Burkina Faso (Ouagadougou). The targeted population was black African men aged 25 years and older, with no history of PCa. Six hundred men who provided informed consent were invited to participate in a PCa knowledge questionnaire through face-to-face interviews. The questionnaire was composed of multiple-choice items designed to ascertain participant's characteristics (age, profession, and level of education) and knowledge of prostate and PCa (risk factors, diagnosis tests, and curative treatments). The average age of men was 42 (min 25, max 80), and 63 % reported primary school or less. Sixty-two percent admitted they did not know the terms prostate and prostate cancer. Only two respondents (0.3 %) cited race as a risk factor, when 90 (15 %) perceived too much sexual activity as a risk factor. A majority of respondents (70.3 %, $n = 422$) stated that they were unaware of any diagnosis tests for PCa. The level of education was strongly correlated with PCa knowledge ($p < 0.001$). Men in the city of Ouagadougou have poor knowledge of PCa. Educational interventions should target the entire populations to improve self-informed decision about early diagnostic possibilities of PCa.

Keywords Prostate cancer · Public awareness · Prostatic-specific antigen

F. A. Kabore (✉) · T. Kambou · B. Zango · A. Ouédraogo
University of Ouagadougou and Yalgado Ouédraogo university teaching hospital, 03 BP 7022, Ouagadougou, Burkina Faso
e-mail: kaborefamd@icloud.com

Introduction

Prostate cancer (PCa) is the second most common type of cancer and the sixth leading cause of cancer death among men worldwide [1]. The only well-established risk factors for PCa are age, race/ethnicity, and family history of the disease [1, 2]. PCa disproportionately affects African-American men at a rate of 1.7 times increased incidence and 2.4 times increased cancer mortality compared to white men [3]. The lack of awareness about prostate cancer and other prostate-related issues has been identified as a cause of low survival and higher mortality rates among black men [4]. Compared to the USA, there are a lack of data available on PCa incidence and mortality in sub-Sahara Africa. Studies in Africa reported that PCa is diagnosed at advanced stages [2, 5, 6]. Several reasons substantiate this fact as follows: low-income populations, lack of access to health care, taboos, and fear of cancer. The factors impacting on black men's awareness of PCa may contribute to late PCa diagnosis and should be taken into consideration for reduce prostate cancer disparities. The aim of this study is to assess the knowledge of PCa among men in the general public, with different levels of education in the main city of Burkina Faso (Ouagadougou) in order to best understand PCa behavior in the country.

Materials and Methods

The study was conducted between January 2011 and march 2011. The targeted population was black African men living in the city of Ouagadougou, aged 25 years and older, with no history of PCa. Ouagadougou is the main city of Burkina Faso and had an estimate population (2006 general population census) of 1,475,839 inhabitants; 745,616 (50.5 %) were men. Eligible men were invited to participate in a PCa knowledge questionnaire. Six hundred men who provided informed

Table 1 Study participant's demographics

Characteristics	Frequencies $N=600$	Percentage (%)
Ages		
25–44	379	63.2
44–65	178	29.7
>65	43	7.1
Education		
None	278	46.3
Primary	100	16.7
Middle	90	15
High	132	22
Employment status		
Unemployed	97	16.2
Salaried employees	290	48.3
Retired	40	6.7
Students	68	11.3
Farmers	105	17.5

consent were included in the survey. The questionnaire was administrated by students of the medical school of the University of Ouagadougou through face-to-face interviews. The study participants were interviewed at their workplace or public location (pubs, parks, and restaurants). The interviews were conducted in French or in the dialect of the respondents.

The questionnaire was composed of multiple choice items designed to ascertain participant's characteristics (age, profession, and level of education) and knowledge of prostate and PCa (risk factors, diagnosis tests, and curative treatments). We considered the following four levels of education: none (illiterate), primary (less than 6 years schooling), middle (secondary school), and high (university or postgraduate degree).

The data was entered and analyzed using the Statistical Packages for the Social Sciences PC version 17.0. The dataset was investigated for missing values. Study participants' responses were analyzed in terms of frequencies, mean value, and percentages.

Chi-square (χ^2) test or exact Fisher test were utilized to examine whether statistical associations existed between the respondents level of education and PCa awareness. A p value of 5 % (i.e., 95 % confidence interval) was used to determine statistical associations between the variables.

Results

Population Characteristics

Study participants demographics are summarized in Table 1. The average age of men was 42 (min 25, max 80). Sixty-three percent of participants reported primary school or less as their educational attainment, and 48.3 % were salaried employees.

Knowledge of Prostate Gland and Prostate Cancer

Sixty-two percent ($n=374$) admitted they did not know the terms prostate and prostate cancer. While 93.9 % ($n=124$) of participants with high level of education were aware of prostate cancer versus 2.9 % ($n=8$) of those with no education (Fig. 1). The level of education was strongly correlated with PCa knowledge ($p<0.001$).

Knowledge of PCa Risk Factors

The majority of men ($n=417$, 69.5 %) in this study confessed that they did not know the risks factors for PCa. When asked to cite the risk factors for PCa from a list of suggested factors (age, race, heredity, high socioeconomic level, and too much sexual activity), age was listed in first place by 17.7 % (Table 2). Only two respondents (0.3 %) cited race as a risk factor, when 90

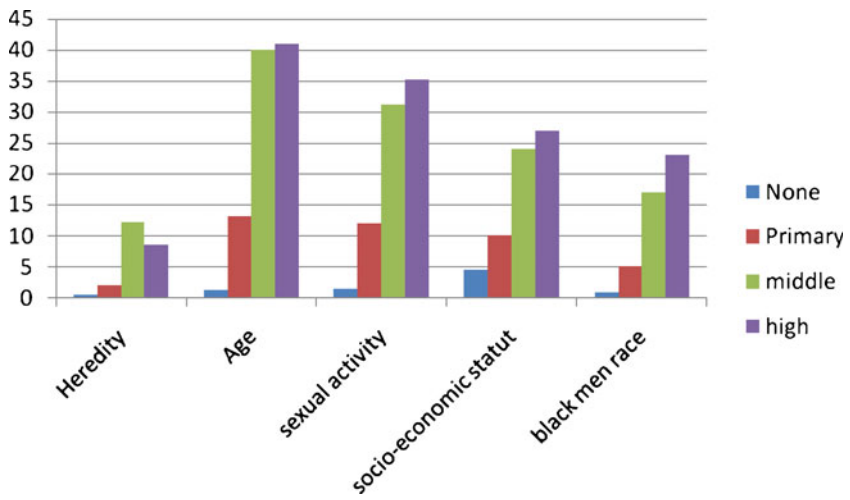

Fig. 1 Men's knowledge of suggested risks factors according to their level of education

Table 2 Study participant's responses on suggested risks factors

	Yes N(%)	No N(%)	Don't know N(%)
Heredity	25 (4.2 %)	149 (24.8 %)	426 (71.0 %)
Age	106 (17.7 %)	80 (13.3 %)	414 (69.0 %)
Frequents sexual activity	90 (15 %)	80 (13.3 %)	430 (71.7 %)
High socioeconomic level	22 (3.7 %)	162 (27.0 %)	416 (69.3 %)
Black men race	2 (0.3 %)	199 (33.2 %)	399 (66.5 %)

(15 %) perceived too much sexual activity as a risk factor (Table 2). As illustrated in Fig. 1, a higher level of education was associated with a higher knowledge of risks factors ($p < 0.001$). Those with a higher level of education were also more numerous to cite incorrect risks factors.

PCa Diagnosis Tests and Curative Treatments

A majority of respondents (70.3 %, $n=422$) stated that they were unaware of any diagnosis tests for PCa. Medical imaging (tomodensitometry, ultrasonography) was the most frequently (15.3 %, $n=92$) mentioned as diagnosis possibility for PCa. The prostate-specific antigen (PSA) blood test and digital rectal examination (DRE) was mentioned by 8.2 % ($n=49$) and 6.2 % ($n=37$) of respondents, respectively. Within the group of participant who stated to be aware of the diagnosis possibilities (Fig. 2), the interviewees with high level of education were most frequent (78.8 %, $n=104$).

When asked which of the curative treatments (surgery, radiotherapy, or chemotherapy) they considered to be the adequate treatment for early diagnosed PCa, 16.3 % ($n=98$) of respondents cited surgery, 6.5 % ($n=39$) radiotherapy, and 2 % ($n=12$) chemotherapy, while 71 % ($n=426$) did not know. The proportion of respondents who considered surgery to be an adequate treatment for early prostate cancer was also higher among highly educated respondents. This relation was statistically significant ($p<0,001$).

Discussion

Participants in this study have limited knowledge of prostate gland and PCa (62 % have never heard the terms prostate or PCa). An international survey of prostate cancer awareness conducted in Europe and the USA [7], and a study in Japan [8], clearly demonstrate the lack of awareness of prostate cancer among the general population. However, black men demonstrate low knowledge on prostate cancer in many studies. So, some population-based studies from Nigeria, in West Africa, report limited knowledge and awareness of prostate and PCa. In the paper of Ajape [9], 78.8 % of study participants have never heard any information on PCa, when 39.2 % were aware on PCa in the survey of Atulomah [10]. These results are comparable to related data from the USA, where a lower level of awareness among African-American men compared with Whites has been observed in several studies [11–14]. When we look at education, a higher level of education is associated with a higher level of awareness of prostate disease, regardless of race [15–17]. In a population-based study in the USA, Winterich [15] conclude that education, not race, is correlated with the knowledge of PCa. Our findings demonstrate that a high level of education is an important factor associated with the knowledge of PCa. However, participants in the high level of education were also the ones who provide more misperceptions of PCa. For this reason, contrary to Winterich [15], we can conclude that the knowledge of PCa is poor in our country regardless of level of education.

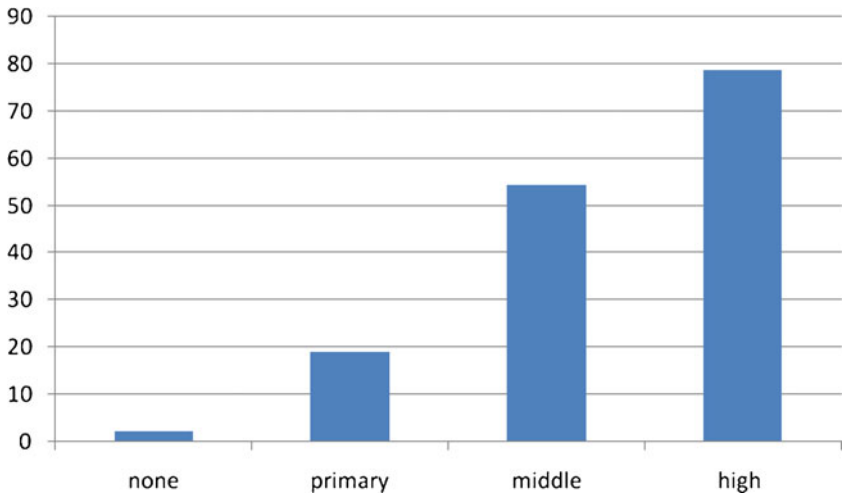

Fig. 2 Awareness of diagnosis tests of PCA according to respondent's level of education

Moreover, our study is based on homogenous African Black men, and for this reason, we cannot make comparisons about races and PCa knowledge.

Knowledge about PCa risk factors is low in this study (only two men identified race as a risk factor). In a recent review by Pedersen [14], perception of black men toward PCa risk factors is variable. Some studies report high awareness of the increased risk of PCa for black men [18, 19], when others report a lower awareness of all the main risk factors, such as race, age, and family history of PC [10, 11, 17, 20]. These variations are relevant to sampling differences. Studies that used community samples reported low awareness of PCa risk factors compared to studies that used clinical samples. Participants in clinical samples studies had recent discussions with their physicians about PCa risks to improve their knowledge [15, 21]. Frequent sexual activities are cited as risk factors by men (15 %) in our study. Misperceptions of PCa risks factors are frequently reported; hard work, stress, drinking insufficient water, unhealthy diet, and lack of exercise were cited as risk factors [19, 22], as were sexually transmitted diseases, urinary tract infections, and too much or too little sexual activity [21]. Knowledge of PCa risk factors is also correlated with level of education; low educated men need comprehensive education about prostate cancer risks [15].

The PSA blood test and the DRE are two procedures used for screening and early detection of prostate cancer [23]. Our study participants clearly demonstrate their low awareness about these two simple tests. PSA screening increases diagnosis of early stages and potentially curable PCa [24]. However, the benefit of PSA screening for PCa remains unproven, although multinational studies have reported decreasing PCa mortality rates in countries with more widespread screening policies [24, 25]. A previous study in Burkina Faso concludes that over two-thirds (73.6 %) of PCa cases are locally advanced or metastatic [5]. The development of a screening program in Burkina Faso can be a way to increase the awareness of men on PCa diagnosis possibilities and curability of early diagnosed cases and then improve PCa outcomes. However, efforts to increase PCa awareness should be supported by a strong and well-planned national PCa awareness program in the general population.

This study has several limitations. The sample may not be representative of all the population of Burkina Faso where over 80 % of people live in rural areas. Also, the results may not be generalized to all men outside urban areas. In addition, the translation of the questionnaire to local dialects for respondents who were illiterate may fail to convey the exact meaning important for their understanding. Our study is focused on the level of education and does not evaluate other demographic characteristics (socioeconomical status, religion, access to healthcare, and literacy) which can influence PCa knowledge. Nevertheless, this study has the merit of being the first to assess awareness and knowledge of PCa in Burkina Faso and demonstrate the need for interventions targeted on under-educated populations to improve self-informed decision for early diagnostic of PCa.

Conclusion

Men in the city of Ouagadougou have poor knowledge of PCa. The awareness of PSA blood tests for detecting prostate cancer is low, and the risk factors for prostate cancer are poorly understood. The main finding is that PCa awareness and misperceptions are correlated to the level of education. Educational interventions should target on the entire populations to improve self-informed decision about early diagnostic using PSA blood test screening. Sensitization activities should be strongly conducted with health care practitioners using the media and should be backed with an effective national health policy on PCa screening and early detection. Most studies are needed to best understand the behavior of PCa awareness in the entire country.

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