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Prostate Screening Practices Among Male Staff of the University of Lagos, Lagos, Nigeria

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ABSTRACT

Introduction: Prostate cancer is the second most common male cancer and the second leading cause of cancer related death in the world. In Nigeria it is the most common male cancer constituting 11-12% of all male cancers.
In most developing countries, prostate cancer screening is not widespread and men's knowledge of the disease and screening methods for early detection is limited.
Objective: This study assessed the knowledge, attitude and practice of prostate cancer screening among male staff of the University of Lagos, Lagos, Nigeria.
Materials and Methods: A cross-sectional descriptive study using self-administered questionnaires was carried out among 250 randomly selected male staff members of the University of Lagos aged 30 to >60 years. Data analysis was done using EPI-INFO version 2007 software statistical package. Categorical variables in groups were compared using the chi-square test. The level of significance was set at $p < 0.05$.
Results: The mean age of the respondents was 47.4±6 years. Overall, 164 (66%) were aware of prostate cancer and 145 (58%) were aware of prostate cancer screening methods. The commonest method known by these respondents was serum Prostate Specific Antigen (PSA) testing (59.3%). Only 71 (28.4%) respondents had undergone prostate cancer screening and the commonest reason for screening was on the recommendation of their doctor (47.9%). Of those who did not undergo testing, 32.4% were not aware of the test and in 30.2% of cases their doctor did not recommend it.
Conclusion: This study revealed that although the respondents were aware of prostate cancer screening, few had taken the test. Because there is insufficient scientific evidence for the justification of screening in all men, the authors recommend that informed decision making should guide a decision to obtain screening for prostate cancer. This means that men should talk with their doctors to learn the nature and risks of prostate cancer, understand the benefit and risks of screening and decide whether prostate cancer screening is right for them.

Key Words: Prostate, cancer, screening, prostate specific antigen, digital rectal examination Lagos, Nigeria

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INTRODUCTION

The prostate gland in men is capable of undergoing malignant changes leading to prostate cancer[1]. More than 70% of cases of adenocarcinoma of the prostate occur in men over the age of 65 years[2]. A man in his lifetime has about a 16% chance (1 in 6) of being diagnosed with prostate cancer and 3% (1 in 33) chance of dying of prostate cancer[3]. In the USA the estimated lifetime risk of being diagnosed with the disease is 17.6% for Whites and 20.6% for African-Americans. The lifetime risk of death from prostate

cancer is 2.8% and 4.7%, respectively[3]. The lifetime risk of being diagnosed with prostate cancer in the UK is one in twenty six[4]. In Nigeria, the prostate cancer risk was 2% of all patients based on a pool of 110.000 men[5]. Consequently, prostate cancer is likely to impact the life of a significant proportion of men that are alive today.

Prostate cancer contributes 6% of the entire global cancer burden[6]. Internationally, it is the 2nd most common cancer diagnosed among men (behind lung cancer) and the 2nd leading cause of cancer death in men[7]. It accounts for 29% of all male cancers and 11% of male cancer related deaths[8]. In the USA its incidence is second only to lung cancer [3]. It is also now the most common cancer in men in the UK (not counting skin cancer)[9]. It accounts for nearly a quarter (24%) of all male cancers diagnosed[4]. It also remains the most commonly diagnosed non-cutaneous cancer and the second most common cause of cancer mortality in Australian men[10]. It is also the most common cause of cancer in Latin America and the Caribbean[7]. In Africa it is the third most common cause of cancer[7]. In Nigeria an analysis of adult male cancers examined every decade since independence confirmed that prostate cancer is the number one cancer in men and constitutes 11–12% of all male cancers[11].

The worldwide prevalence rates have been estimated as 1.554.700 cases[12]. Its incidence varies widely between countries and ethnic populations, and disease rates differ 100 fold between populations[12]. The lowest yearly incidence rates occur in Asia (1.9 cases per 100.000 in China) and highest in North America and Scandinavia and especially in African-Americans (272 per 100.000)[12]. In 2008, 186.000 new cases and 28.600 deaths were recorded in the USA[2]. In the UK the number of new cases diagnosed in 2006 was 35.515. Around 301.500 new cases of prostate cancer were diagnosed in 25 member countries in the EU[4]. In Nigeria in 1997 Osegbe published data based on a prospective study of Nigerian men aged 45 years or older with prostatic symptoms and suggested that the incidence was 127/1000 men[5]. The Globocan 2002 data base estimated that 6.236 new cases of prostate cancer would occur that year. The WHO in 2002 provided data for prostate cancer in Nigeria estimating that the age standardized incidence would be 96/100.000[5].

With an estimated 254.000 deaths in 2007, prostate cancer is the sixth leading cause of death in men.[13] Its mortality varies widely among countries[14]. In Nigeria, which is the most populous country in Africa, a prospective study carried out by Osegbe in 1997 stated that approximately 64% of the newly diagnosed patients died within two years[5].

In the developed world the probability of being diagnosed with cancer is more than twice as high as in developing countries. Fewer mortalities (50%) are recorded in the developed countries due to early detection, while in developing countries, 80% of cancer victims are diagnosed with late stage incurable tumors, pointing to the need for much better detection programmes[15]. Some evidence have shown that recent recorded decline in cancer mortality observed in several countries was due to early detection[15]. Prostate cancer screening is an attempt to identify individuals with prostate cancer in a broad segment of the population, those whom there is no reason to suspect prostate cancer[16]. The principles of screening for prostate cancer are measurement of serum Prostate Specific Antigen (PSA) and digital rectal examination (DRE).

Currently, there is no scientific consensus on effective strategies to reduce the risk of prostate cancer. Additionally, there is no agreement on the effectiveness of screening or its potential risk-benefit ratio. Therefore, public health agencies face significant

challenges in determining what actions to take to address prostate cancer. Given the uncertainty about the benefit of screening, the principal public health approach is to support informed decision making about screening.

Knowledge of prostate cancer and prostate cancer screening plays an important role in cancer screening utilization[17]. Researchers have found a correlation between knowledge and screening behaviours[18]. A large international survey carried out in Europe and the USA on general public awareness of prostate cancer in 2003 showed that there was a lack of awareness of prostate cancer[19]. In Nigeria quite a few studies have been done on knowledge, attitude and practices of prostate cancer and prostate cancer screening. These studies report a low level of awareness of prostate cancer and prostate cancer screening[20, 21]. A cross sectional study done in 2009 on a native African urban population showed that 78.8% had never heard of prostate cancer and 5.8% had heard of PSA. The study also showed that none of the respondents had taken the screening test[21].

The target population under study is the male staff of the University of Lagos. The purpose of this study was to determine their knowledge relating to prostate cancer and prostate cancer screening, their attitude towards and uptake of prostate cancer screening, and factors influencing screening practices. The information obtained will help to determine how knowledgeable they are about the disease and its screening practice, since an adequate level of knowledge on the part of the subjects is a pre-condition for utilization of a screening program [22].

MATERIALS AND METHODS

Background to study

The University of Lagos, south-west Nigeria, is a tertiary academic institution established in 1962. It provides instruction and facilities for the pursuit of high quality programmes through full-time, part-time and distance learning in diploma and post-graduate categories.

The University is made up of two campuses: The main one at Akoka, Yaba and the College of Medicine of Lagos (CMUL) in Idi-Araba, Surulere. The main campus is situated within the Mainland Local Government Area in Akoka, bounded by Yaba, Onike, Bariga and the Lagos Lagoon.

From a modest intake of 131 students in 1962, enrollment has grown to over 39.000. The University's Akoka campus is composed of nine faculties, offering a total of 117 programmes in Arts, Social Sciences, Environmental Sciences, Pharmacy, Law, Engineering Sciences, Business Administration and Education.

The CMUL is an autonomous unit of the University of Lagos since 1962. It has undergone various changes with the re-designation of its name from Medical School to College of Medicine, University of Lagos, by a decree of the Federal Military Government on 10th March 1967. This decree reconstituted the University of Lagos and incorporated the CMUL within it. The college is made up of three faculties: Basic Sciences, Clinical Sciences and Dental Sciences.

The University of Lagos has a complex organizational structure requiring heterogeneous staff with their varied functions.

At the time of this study, the main campus had a total combined male and female staff of 3571, comprising of 943 academic staff, 1537 non-academic senior staff and 1091 non-academic junior staff. The total male staff number was 2317, consisting of 700 academic staff, 916 non- academic senior staff and 701 non-academic junior staff.

The CMUL had a total of 233 academic staff, 355 non-academic senior and 357 non-academic junior staff. The total male staff number was 613, consisting of 143 academic staff, 234 non-academic senior staff and 236 non-academic junior staff. The total male staff number of both campuses was 2930 (613+2317).

Study design: This is a descriptive cross-sectional study of the knowledge, attitude and practice of prostate cancer screening among male staff of the University of Lagos.

Sampling methodology: Using appropriate formulae, the sample size was calculated to be 250. A multi-staged sampling technique was used to select respondents:

Stage one

Since these are heterogeneous groups, stratified sampling technique was used to select proportionate samples of the study population consisting of academic staff, non-academic senior staff and non-academic junior staff of both campuses.

The total staff number of 2930 men was divided into:

A. Academic staff of 843 (700 from main campus and 143 from CMUL)

B. Non-academic senior staff of 1150 (916 from main campus and 234 from CMUL).

C. Non-academic junior staff of 937 (701 from main campus and 236 from CMUL).

Proportions of the sample size of 250 were calculated for each cadre and campus, yielding academic staff= 75 (Akoka= 60, CMUL= 15), non-academic junior staff= 75, (Akoka= 60, CMUL= 15) non-academic senior staff= 100 (Akoka= 80, CMUL= 20).

Stage two

Three different lists of all male staff were collected, one for each cadre of staff. The lists had the names of the staff, their units, departments and faculties where applicable.

The academic male staff list was grouped into 9 Faculties (Arts, Business Administration, Education, Engineering, Environmental Science, Law, Pharmacy, Science and Social Sciences) for Akoka campus and three faculties of Basic Sciences, Clinical Sciences and Dental Sciences for CMUL campus.

The senior and junior non-academic staff lists consisted of staff in the same faculties as the academic staff list.

Academic staff

For the academic staff in Akoka campus, two faculties were randomly selected by simple ballot namely: Science and engineering. The engineering faculty has8 departments with 101 male academic staff while the faculty of science has 9 departments with 120 male academic staff. These made a total of 221 male academic staff in the two faculties from which 60 were randomly selected.

For academic staff in the CMUL campus, there were three faculties comprising of 23 departments. The faculty of clinical sciences was randomly selected by simple ballot. It consists of 11 departments.

Akoka Campus

On the main campus, three departments were randomly selected from each of the selected faculties. From the faculty of science, the departments picked were chemistry (16 male staff), botany (17) and physics (28). From the faculty of engineering, the departments picked were civil engineering (19), mechanical engineering (20) and chemical engineering (22).

Ten respondents were randomly selected using simple ballot from each department until the desired number of 60 respondents was attained.

CMUL campus

In the CMUL campus, two of the 11 departments from the faculty of clinical sciences were randomly selected by simple ballot. These were the departments of surgery (21 male staff) and medicine (9), from which 10 and five respondents, respectively, were randomly selected.

Selection of junior and senior non-academic staff

Similar approaches were used in the selection of both junior and senior non-academic respondents from the same faculties and departments as those used for the academic staff in both campuses. In all, 56 and 19 junior non-academic respondents were randomly selected from the Akoka and CMUL campuses respectively. For the senior non-academic staff, 60 and 20 respondents were randomly selected from the Akoka and CMUL campuses respectively

Data collection tool and technique

A self- administered questionnaire adapted from previous studies[25-27] was used to assess the respondents. It comprised both open and close ended questions. The draft questionnaire was pre-tested on male staff (20) at the Yaba College of technology, Yaba, Lagos and amended as appropriate. The questionnaire had four parts: Background information (socio-demographics), knowledge of prostate cancer and prostate screening, attitude towards prostate cancer screening, practice of prostate cancer screening.

Administration of the questionnaire was done every working day from 8 am to 4 pm over a four week period (May–June 2010). An average of five visits was made to each department to retrieve the completed questionnaire over another two weeks.

Data analysis

After collection, the questionnaires were appraised and answers to open ended questions were coded. Analysis was done using the EPI-INFO version 2007 software statistical package. Data were presented in the form of frequency tables and cross tabulations. Categorical variables in groups were compared using the Chi-square test. The level of significance was set at $p < 0.05$.

Ethical considerations

Approval was obtained from the Department of Community Health and Primary Care of the University of Lagos. Participation in the study was voluntary, verbal consent was sought before questionnaires were administered. Subjects were assured of the confidentiality of the study.

Limitation of the study

For some of the departments, all the staff in the selected cadre had to be used in the study.

RESULTS

The age group with the largest number of respondents was 41-49 years (32.0%) and with the lowest number was 60-69 years (16%). The mean age was 47.4±6 years. About 87.2% of the respondents were married, 42.4% had tertiary education, while 33.2% of them continued to postgraduate level and 65.6% were senior professionals. The majority of the respondents were Yoruba (76.8%) followed by Igbos (16%). Only 2 (0.8%) were Hausa and the remaining (6.4%) were from other tribes like Bini, Igala and Ibibio.

The largest cadre of respondents was the senior non-academic staff (40%) while both the junior non-academic and the academic respondents constituted equal proportions of 30%.

Knowledge of prostate cancer and screening

About two-thirds of respondents were aware of the prostate gland (65%) and prostate cancer (66%), 145 (58%) had heard of a screening test for prostate cancer, 57.9% obtained their information from health workers, while 13.8% obtained their information from the media or a family member. Overall, 46.9% of those aware of screening methods knew of DRE, while 86 (59.3%) knew of the PSA test (Table 2).

Out of 164 respondents who knew about prostate cancer, 54.3% identified age as a risk factor while 39.6%, 31.1%, 30.5% and 28% identified diet, race, family history of prostate cancer and cigarette smoking, respectively, as risk factors and 26.8 % could not identify any risk factor for prostate cancer. Of the respondents who claimed to be aware of prostate cancer, 23% could not mention any treatment method, 44.5% mentioned surgery, while 22.6%, 7.3% and 2.4% identified drugs, radiation and watchful waiting, respectively, as treatment methods. Concerning complications of prostate cancer treatment, 48.8% of respondents who knew about prostate cancer mentioned impotence, 35.4% mentioned incontinence and 46.3% had no knowledge of likely complications.

Attitude to prostate cancer and screening

Overall, 66.4% of respondents were concerned about getting prostate cancer while 13.6% were not and 20% did not know whether they were concerned or not. The majority (87.2%) of the respondents thought it was necessary to perform prostate screening in symptom-free individuals and 92.8% were willing to learn more about prostate cancer.

Practice of prostate cancer screening

Of the 71 (28.4%) respondents who had undergone at least one prostate cancer screening, 47.9% took the screening following their doctors' suggestion as part of a routine health check, while 33.8% took it because they had heard it from the media. Of the 71.6% of respondents that had never undergone prostate cancer screening, 32.4% said they were not aware that such screening was available, 30.2% of them said their doctor never recommended it, 13.4% did not take the screening because they would not want to know the outcome, 11.2% of them thought it unnecessary and 12.3% thought the procedure might be painful (Table 3).

Disaggregating uptake of screening by campus, 77.3% of respondents that had undergone prostate screening were from the CMUL campus while only 27.7% were from the Akoka campus.

Associations

There was no statistically significant relationship between respondents' age (p= 0.064), marital status (p= 0.236) and their awareness of the screening test. However, there was a statistically significant relationship between respondents' age and practice of prostate cancer screening, (p= 0.000). With increasing age, uptake of screening increased, with 50% of respondents above 60 years having taken the test. Respondents' level of education and cadre were also significantly associated with awareness and uptake of prostate cancer screening, p <0.000). As educational level increased, the awareness and uptake of prostate cancer screening increased. Academic respondents were more aware of (73.3%) and practiced more of the screening (41.3%) than the other cadre. However, there was no statistically significant relationship between their attitude towards screening and their cadre (Tables 4-5).

While respondents' age group and marital status were not significantly associated with their thought of the necessity for prostate screening, educational level significantly influenced their perception of the necessity for screening.

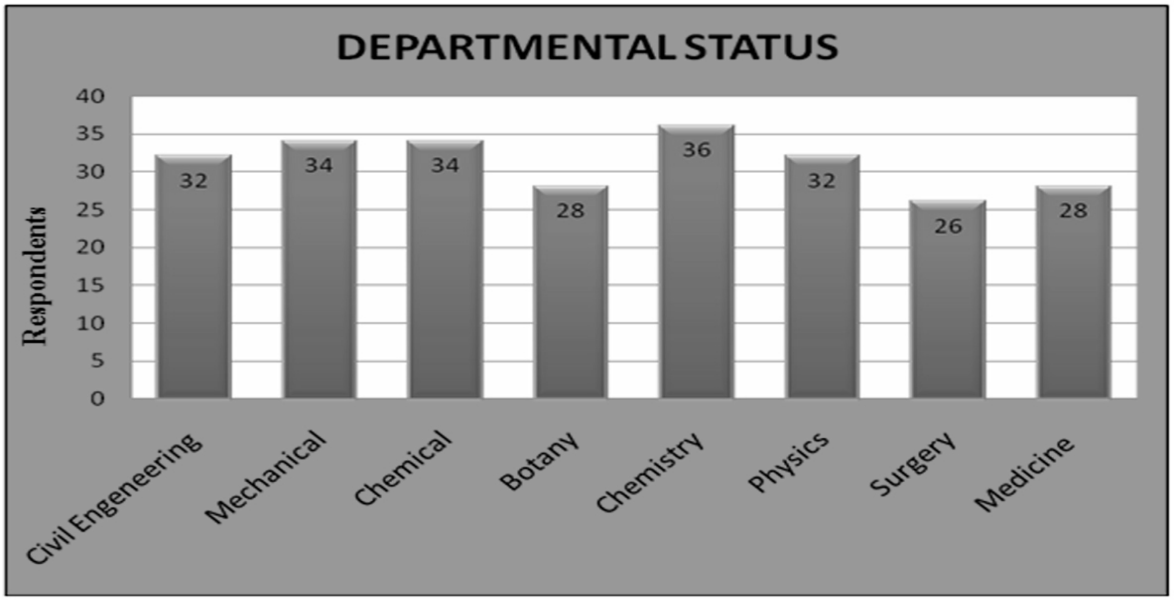

Fig. 1: Department categories of respondents (numbers expressed in absolute figures)

Respondents' awareness of prostate cancer and screening significantly influenced (p= 0.000) their uptake of prostate cancer screening (Table 5). Those who were aware of prostate cancer and available screening methods were more likely to be screened. While respondents' cadre significantly influenced the rating of their health status, it did not influence either willingness to know more about prostate cancer and screening methods or their practice of these methods. Respondents who rated their health as excellent were the least likely to have undergone prostate cancer screening.

DISCUSSION

The study was conducted among male staff of the University of Lagos and comprised 250 men whose ages ranged between 30 and >60 years. More than half of them were in the 41-49 and 50-59 years age brackets (32% and 26.8%, respectively). The mean age was 47.4±6 years. The majority of the respondents were married (87.2%). Overall, 42.4% had a tertiary education, 33.2% had a post-graduate qualification and 65.6% were senior professionals. The majority of the respondents were Yoruba (76.8%). This could be attributed to the fact that the school is located in the south-west region of Nigeria. Three-quarters (75.2%) of the respondents perceived their health status as excellent or very good.

Overall, 64% of the respondents were aware of the prostate gland. This is lower than the percentages reported in studies performed in Australia[10] and Jamaica [28] where awareness of the prostate gland was 95% and 71.8%, respectively. A positive association was found between the respondents 'educational level, cadre and awareness of prostate gland. Respondents with a tertiary or post-graduate qualification (68.9% versus 90%) and in the academic cadre (86.7%) were most aware of the prostate gland. Similar findings were noted in the Jamaican study[28] where a positive relationship existed between educational level and knowledge of the prostate gland.

The majority of the respondents were aware of prostate cancer (65.6%). However there was no difference in their level of awareness. A lower percentage was recorded in a community survey of 280 randomly selected Irish men, aged 40-69 years, where a quarter had not heard of prostate cancer[29].

Table 1: Socio-demographic characteristics of the respondents

Variable	*n*= 250
Age (years)	n (%)
30-40	64 (25.6)
41-49	80 (32.0)
50-59	66 (26.4)
>60	40 (16.0)
Marital status	
Single	26 (10.4)
Married	218 (87.2)
Separated	6 (2.4)
Educational level	
Primary	6 (2.4)
Secondary	55 (22.0)
Tertiary	106 (42.4)
Postgraduate	83 (33.2)
Occupation	
Senior profession	164 (65.6)
Junior profession	52 (20.8)
Unskilled	6 (2.4)
Skilled	28 (11.2)
Ethnicity	
Igbo	40 (16.0)
Yoruba	192 (76.8)
Hausa	2 (0.8)
Others	16 (6.4)
Cadre	
Junior non-academic	75 (30.0)
Senior non-academic	100 (40.0)
Academic	75 (30.0)

In another study done in an urban population comprising mainly of civil servants (51.9%), 78.8% had not heard of prostate cancer[30]. These differences may be due to the fact that this study was conducted in an academic environment, since cadre was positively associated with awareness of prostate cancer, with the academic respondents being the most aware (84%).

Overall, 58% of the respondents were aware of a prostate cancer screening test. Awareness of screening was better among CMUL compared with Akoka respondents (73.8 % versus 26.2 %), probably because the respondents from a hospital environment were better informed about prostate cancer screening. In a telephone interview conducted in New Zealand, 52% knew that the cancer society recommended screening[31]. The commonest screening test known in the study was PSA (59.3%). This result differed from that done in an urban setting in 2009 where only 5.8% of the participants had heard of PSA[22]. However the type of prostate cancer screening known by respondents from the two campuses differed. CMUL respondents were more aware of both methods. Of those that mentioned DRE and PSA, 67.6% and 79.2%, respectively, were from the CMUL (p= 0.0000).

In this study, awareness of the screening tests increased with educational level, cadre and occupation, but not with age and marital status. Respondents with higher levels of education were more aware of prostate cancer screening. From this study, it is obvious that the junior cadre of respondents who were mainly the least educated, knew the least about prostate cancer screening (36.6%) and hence would require education on male reproductive health and preventive measures to achieve optimal health. This approach may positively influence their uptake of screening, since 81.3% thought it necessary for prostate cancer screening to be done in symptom-free individuals.

In this study, the attitude of the respondents to prostate screening was positive as 66.4% were concerned about getting prostate cancer and 87.2% were of the opinion that screening should be done in symptom-free individuals. A positive association was noted between respondents' attitude to prostate cancer screening and their educational level. The respondents with tertiary and post-graduate education felt the most need for routine screening in symptom-free individuals (90.6% and 88%, respectively). In a cross-sectional telephone survey in New Zealand, 94% believed having routine health

Table 2: Awareness of prostate cancer and screening

Ever heard of prostate gland	n (%)
Yes	162 (64.8)
No	88 (35.2)
Ever heard of prostate cancer	
Yes	164 (65.6)
No	86 (34.4)
Ever heard of prostate cancer screening	
Yes	145 (58.0)
No	105 (42.0)
Major sources of information on prostate cancer screening	
Family	20 (13.8)
Friends	15 (10.3)
Health workers	84 (57.9)
Media	20 (13.8)
Internet, books	9 (6.2)
School	2 (1.4)
Type of screening test known	
Digital rectal examination (DRE)	68 (46.9)
Prostate specific antigen (PSA)	86 (59.3)

examination was important and 81% felt it was necessary to test for prostate cancer in symptom-free individuals[31].

Prostate cancer risk factors most recognized were age (54.3%), diet (39.6%), race (31.1%), family history of prostate cancer (30.5%) and cigarette smoking (28.8%). Dribbling was the commonest symptom selected by the respondents (46.3%). This was followed by a weak urinary stream (30.5%). The least common symptom identified by the respondents was stopping and starting urination (intermittency) (22%). A study done in New Zealand on 120 respondents (42-79 years) showed that 32% of them picked either dribbling or weak urinary stream and only one selected intermittency[31]. Treatment modalities identified for prostate cancer by the respondents were mainly surgery (44.5%) and drugs (22.6%), whereas only 7.3% identified radiation. This is slightly different from a study done on 503 respondents in Western Australia where 54% identified surgery, 26% identified radiation therapy and 24% identified drugs/hormonal treatment. The side-effects of treatment identified by the respondents in this study included impotence (50%) and incontinence (35.5%) whereas 46.3% had no idea of the side-effects of prostate cancer treatment. In the Western Australian study, 53% had no idea about the side-effects of treatment[10].

Uptake of screening tests in the study was low in both campuses (27.8% versus 26% in CMUL versus Akoka). This finding differs from studies done in New Zealand Western Australia and New Mexico, where 55%,

Table 3: Practice of prostate screening

Ever undergone a screening test	
Yes	71 (28.4)
No	179 (71.6)
Type of screening test undergone	
Digital Rectal Examination (DRE)	24 (33.8)
Prostate Specific Antigen (PSA)	39 (54.9)
Can not remember	8 (11.3)
Reasons for screening for prostate cancer	
Had symptoms of prostate cancer	24 (33.8)
Wife or friend recommended it	4 (5.6)
Media publicity	4 (5.6)
Doctor suggested it as part of a regular health check	34 (47.9)
Reasons for not screening for prostate cancer	
I do not know such test	58 (32.4)
It might be painful	22 (12.3)
It might be expensive	6 (3.4)
Do not want to know the outcome	24 (13.4)
It is not necessary	20 (11.2)
Doctor has never recommended it	54 (30.2)

56% and 48%, respectively, of participants had been tested for prostate cancer[10, 26,31].

The commonest reasons for not undergoing prostate cancer screening were not being aware of such a test (32.4%) and that their doctors never recommended it (30.2%). Of the 277 participants in a study in the USA, 53.4% of the respondents indicated that the doctor had never told them they needed a PSA. The respondents opined that they did not have prostate cancer screening because they were not aware they should be screened (79.5%), they believed they were not at risk (78.4%) or the doctor never mentioned it (66.7%)[32]. These findings show that both the media and health professionals have a role to play in creating awareness about prostate cancer screening. Also not providing information about prostate screening by physicians may lead to ignorance and hence reduced screening uptake. In a study carried out in Jamaica on 169 rural health workers, 31.6% stated that cost was the major reason for not participating in prostate cancer screening[33]. It contrasts with this study where cost was not a major factor (3.3%).

A statistically significant relationship was found between the respondents' awareness of prostate cancer, awareness of screening tests and the prostate screening practice, respectively. Age, educational level, cadre, and occupation were positively associated with uptake of screening. In this study, uptake of prostate screening increased with age, since 50% of respondents >60 years had been screened. Findings from a similar study done in Nebraska showed that men were more likely to accept PSA testing if they were older than 50 years of age[34].

In this study, it was also noted that the academic respondents who were aware

Table 4: Association between socio-demographic characteristics of respondents and awareness of prostate screening test

Age (years)	Awareness of screening test	P-value
30-40	33 (51.6)	
41-49	53(66.3)	
50-59	32 (48.5)	0.064
>60	27 (67.5)	
Marital status		
Single	18 (69.2)	
Married	125 (57.3)	0.236
Separated	2 (33.3)	
Education		
Primary	6 (100.0)	0.000*
Secondary	21 (38.2)	
Tertiary	52 (49.1)	
Postgraduate	66 (79.5)	
Cadre		
Junior non-academic	27 (36.0)	
Senior non-academic	63 (63.0)	0.000*
Academic	55 (73.3)	

of prostate cancer screening still had a higher (41.3%) uptake when compared with the other cadres (senior= 24% and junior= 14.7%). The senior professionals were the most screened for prostate cancer (32.4%). All of the unskilled respondents had not undergone prostate screening. This difference in screening uptake may be due to the fact that professionals were more educated and likely earned higher incomes and hence could afford the cost of screening. Some studies have reported that men of higher socio-economic status reported more frequent prostate cancer screening than men of lower socio-economic status [35-37].

Studies have identified lack of awareness, fear, cultural and religious beliefs, traditional attitudes about male gender role, physician's attitude as well as sexual dysfunction as sensitive issues for black men which discouraged their involvement in prostate cancer screening[38-40].

In conclusion, the study revealed that although the male staff members of the University of Lagos were aware of prostate cancer, about half of them were aware of prostate screening and mostly obtained information from health workers. Although the majority indicated the necessity for screening in symptom-free individuals, very few of them had undergone prostate screening following their doctors' recommendation as part of a routine health check. Factors associated with uptake of prostate cancer screening among the respondents were their occupation, educational level, awareness and their dependence on their doctors to recommended screening.

In view of a lack of consensus on the need for screening for prostate cancer in all men, arising from insufficient scientific evidence to decide if prostate cancer screening is beneficial for men younger than 75 years old, the authors recommend informed decision making, in which men are to talk with

Table 5: Association between socio-demographic characteristics, awareness and practice of prostate cancer screening

Age (years)	Practice of screening test	P-value
30-40	4 (6.3)	0.000*
41-49	22 (27.5)	
50-59	20 (30.3)	
>60	20 (50.0)	
Marital status		
Single	4 (15.4)	
Married	60 (27.5)	0.384
Separated	2 (33.3)	
Education		
Primary	2 (33.3)	
Secondary	4 (7.3)	
Tertiary	20 (18.9)	
Postgraduate	40 (48.2)	0.000*
Cadre		
Junior non-academic	11 (14.7)	
Senior non-academic	24 (24.0)	
Academic	31 (41.3)	0.001*
Awareness of screening		
Yes	63 (38.4)	
No	8 (9.3)	0.000*

their doctors to learn the nature and risks of prostate cancer, understand the benefits and risks of the screening tests and decide whether prostate cancer screening is right for them.

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