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ORIGINAL ARTICLE

ASSESSMENT OF KNOWLEDGE AND PERCEPTION ON PREVENTION OF PROSTATE CANCER AMONG MALE STAFF IN ACHIEVERS UNIVERSITY, OWO, ONDO STATE

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ABSTRACT

Introduction: Prostate cancer is a common type of cancer that affects men all over the world, and is regarded as a major health concern due to its high incidence, death and treatment costs. This study assessed male staff members at Achievers University, Owo, Ondo State, on their level of knowledge about prostate cancer as well as their perceptions of its prevention.

Methods: The data from 162 male staff members of the University were collected using a structured questionnaire regarding their knowledge of prostate cancer and its prevention as well as their health-seeking behaviours about the disease. Inferential and descriptive statistics were used to analyze the data, with a 5% level of significance.

Results: Majority of the respondents (45.7%) were aged 18-28 years; most were Christians (86.4%), with 18.5% working as administrative staff, 13.6% as drivers, 21.0% as clerical officer, and 32.1% as lecturers. Only 6.8% had a family history of prostate cancer; 84.6% had excellent knowledge of the disease, with 88.2% having a favorable perception.

Conclusion: The study found that people with a family history of prostate cancer were more knowledgeable. Educated participants also expressed a desire to learn more about their health issues. Health awareness programmes should be reinforced to promote awareness and educate people about prostate cancer on a regular basis.

Keywords: Knowledge; Perception; Prevention; Prostate Cancer; Male Staff; Nigeria

INTRODUCTION

Prostate cancer is a very common form of cancer affecting men worldwide and is considered a major health problem due to its high incidence, mortality, and treatment costs.[1] It is the fourth most commonly diagnosed cancer in the world.[2] Worldwide, an estimated 1,414,259 people were diagnosed with prostate cancer in 2020. It is estimated that by 2030, the number of new cases and deaths from prostate cancer will reach 1.7 million and 499,000; respectively.[3]

The incidence of prostate cancer varies by region and population.[4] Its incidence and mortality rates in Asian countries are lower than in Western countries, but the rate of late-stage prostate cancer remains high.[5] In Malaysia, the age-specific incidence of prostate cancer increases after age 45 and 59.4% of cases are diagnosed at stages III and IV.[6] In Nigeria, prostate cancer is the most commonly diagnosed malignancy in men, with a hospital incidence of 182.5 per 100,000

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male hospital admissions recorded in 2010 in Osun State.[7]

Adediran *et al.* conducted a descriptive study of prostate lesions in the largest hospital in Ondo State, Nigeria, and found that all cases of benign prostatic hyperplasia accounted for 32.2%, nodular hyperplasia was 29.7%, prostate cancers were 30.7%, and other lesions accounted for 7.4%.[8] Although the exact cause of prostate cancer is unknown, older age (over 50), family history of prostate cancer, and African-American ethnicity are believed to be risk factors.

Unfortunately, many cancer victims are diagnosed late with tumor that cannot be cured, which could have been avoided if accurate information on early diagnosis had been known to the public.[10] Additionally, lack of awareness about prostate cancer has been identified as a cause of late detection and poor survival[11]. Therefore, knowledge about prostate cancer and cancer screening is essential for effective use of cancer screening services.[12]

A study in the United States found that men who dislike screening have poor knowledge and attitudes about screening compared with those who prefer screening, suggesting that providing prostate cancer screening information for men will increase screening rates.[13] In a study conducted among male teachers in the town of Sunyani, Ghana, it was found that older men were more likely to perceive themselves as having a lower risk of prostate cancer, perhaps because they believed they had no family history of the disease.[14]

In a study of an urban population in Nigeria, it was found that a large proportion of men were unaware of prostate cancer and screening methods for the disease.[15] In southwestern Nigeria, most patients suffer from locally advanced metastatic prostate disease. This trend is believed to be due to several factors, including lack of awareness and education, misconceptions about prostate disease, and inappropriate health behaviors of patients. [16]

A variety of factors have also been identified as risk factors for developing prostate cancer, including age, ethnicity, family history of disease, genetic factors, diet, alcohol consumption, and smoking.[9] In Nigeria, much of the focus is on cancers in women, particularly breast and cervical cancer, with little attention paid to cancers affecting men. Currently, there are no formal programs to combat prostate cancer, which may explain the low public awareness of this issue.[10]

Early detection and treatment are important to reduce morbidity and mortality from prostate cancer. To achieve this, the average Nigerian must be well-informed about screening services and treatments. Compared to other cancer screenings, prostate cancer screening is particularly effective at detecting prostate cancer early. Black men are more likely to develop prostate cancer. Therefore, it is important to provide decision-making support so that they can make informed decisions at an early stage.[17]

Evaluation of the decision-making process includes determining the patient's level of awareness of prostate cancer and screening.[18] This will lead to better awareness and attitudes towards the recognition and treatment of the disease. To minimize mortality, it is important to adhere to beneficial measures such as health education about prostate cancer, establishment of standardized prostate cancer screening centers, and, where possible, provision of free prostate cancer screening for men over 50 years of age.[13]

Additionally, it would be useful to periodically survey Nigerians' awareness and attitudes towards early detection and treatment of prostate cancer.[15] This study assessed prostate cancer knowledge and perception on prevention among male staff at Achievers University, Owo; the study setting was chosen due to the benefit of assessing large number of males who are the target population for the study.

METHODS

Cross-sectional descriptive design was utilized. The chosen design focused on gathering data and generalizing it across groups of people to explain a particular phenomenon. This study was carried out among 162 male staff working at Achievers University, Owo, Ondo State, Nigeria.

The University is a private sector initiative located in Idasen area of Owo in Owo Local Government Area of Ondo State. Owo is an ancient city located in the southwestern part of Nigeria which is a distance of 45 kilometers from Akure, the state capital, and almost equidistant from Abuja and Lagos. The university sprang from Achievers Group of Education and Training Organization, located in Ibadan Oyo State, Nigeria.

The sample size of the respondents for this study was calculated using Taro-Yamane (1967) Formula, (N = 162). Purposive sampling technique was used to select respondents. This sampling technique was employed so as to properly choose and approach eligible participants who were representative of the entire population studied since Achievers University Community consists of individuals who met the inclusion criteria.

Male staff who were above 18 years of age and employed by the University were involved in the study. Ethical approval was obtained from the Ethics and Research Committee of Achievers University, Owo with reference number 0209/2020. Written informed consent was obtained from each participant before administering the questionnaire. Participation of each respondent was voluntary and participants were treated with respect and courtesy. Confidentiality and anonymity were ensured.

A structured questionnaire with five sections was used in data collection. The sections were:

Section A was used to gather information on socio-demographic data of respondents as seen in Table 1. It had seven items. They were analyzed with descriptive statistics.

Section B: This section contained ten (10) items which were used to collect data on the level of knowledge of respondents on prostate cancer as shown in table 2. The items had options of Yes and No. Score of 1 was given for each correct answer while 0 was awarded to each wrong answer. The minimum score was 0 and the maximum score was 30. Good knowledge = 16-30 and Poor knowledge = 0-15.

Section C: Assessment of perception of male staff on prevention of prostate cancer. This section had six items on a modified Likert scale of 1 to 4 as shown in table 3. The keys were as follows: strongly agree (SA), scored 4, agreed (A) scored 3, disagree (D) scored 2 and strongly disagree scored 1. To evaluate the level of perception on prostate cancer, the variables were computed and scored. The mean score was calculated as well. Respondents with marks below the mean were grouped under poor perception while respondents with scores above the mean were grouped under good perception.

Section D: Assessment of factors influencing knowledge of male staff on prostate cancer. This entails 10 structured questions as shown in table 4.

Section E: Assessment of the influence of the level of knowledge on prostate cancer and health seeking behaviour of male staff. This section had 10 structured questions as seen in table 5.

Face and content validity technique was used to ascertain the validity of the research instrument. The instrument was critically reviewed by nursing experts, project supervisor on the subject matter and appropriate structuring of the questions was done to ensure internal consistency and suitability. Areas that needed corrections were worked upon. The reliability of the instrument was carried out by test-re-test method by administering the questionnaire to 20 male staff in Federal University of

technology (FUTA) Akure. The sample has the same characteristics with the setting of this study. A measure of its reliability was assessed using Cronbach alpha value of 0.8.

Questionnaires were administered directly to respondents and same were retrieved immediately from them after they were filled. Data collection process took a month (September, 2020). Completed questionnaires were cross-examined for completeness and consistency. Data were analyzed using descriptive and inferential statistics with the aid of Statistical Package of Social Sciences (SPSS) version 27. The level of significance was set at $p \leq 0.05$.

RESULTS

Results in table 1 illustrate the socio-demographic characteristics of respondents. It shows that (45.7%) were within 18-28 years of age, (34.6%) were within 29-38 years while the least represented age group of participants was within 49-58 years. Majority of the respondents were married (59.3%), while (34.6%) had post graduate certificates, (12.3%) were graduates, (38.9%) had diploma certificates. Respondents were mostly Christians (86.4%), (18.5%) worked as administrative staff, (13.6%) were drivers, (21.0%) were clerical staff while 32.1% were lecturers. Only 6.8% reported to have had a history of prostate cancer in the family while 6.2% had present history of prostatic problems.

As shown in table 2, all respondents reported to have heard about prostate cancer mostly from television (36.4%), relatives/friends (28.4%) and health professionals (29.0%). Majority of the respondents, 85.2%, agreed prostate cancer was a form of tumor that attack gland in the male and 72.8% reported that weak and intermittent urination is a symptom of prostate cancer. Furthermore, 54.3% attributed low back pain as one of the symptoms of prostate cancer. Regarding the risk factors, 87.0% were of the opinion that increasing age, obesity and smoking pose a risk for prostate cancer and 64.8% opined that one may have developed prostate cancer and show no symptoms at all. Moreover, 85.2% agreed prostate cancer was non-communicable with 93.2% agreeing that it can be treated surgically.

Table 1: Socio- Demographic Characteristics of Respondents

Age	**Frequency (N)**	**Percentage (%)**
18-28years	**74**	**45.7**
29-38years	**56**	**34.6**
39-48years	**22**	**13.6**
49-58years	**10**	**6.2**
Marital status		
Single	66	40.7
Married	96	59.3
Educational status		
Post graduate certificate	56	34.6
Degree certificate	20	12.3
Diploma	63	38.9
O Level certificate	12	7.4
Primary school certificate	11	6.8
Religion		
Christianity	140	86.4
Islam	22	13.6
Cadre		
Administrative staff	30	18.5
Driver	22	13.6
General worker	13	8.0
Clerical staff	34	21.0
Security staff	11	6.8
Lecturer	52	32.1
Any history of prostate cancer in the family		
Yes	11	6.8
No	151	93.2
Any current history of prostatic problems		
Yes	10	6.2
No	152	93.8
Total	**162**	**100%**

Table 2: Knowledge on Prostate Cancer among Male Staff

	Frequency (N)	Percentage (%)
Have you ever heard about prostate cancer?		
Yes	162	100.0
No	0	0.0
Where did you hear about prostate cancer		
On television	59	36.4
On radio	10	6.2
From relatives/ friends	46	28.4
From health practitioners	47	29.0
Prostate cancer is a form of tumor that attack gland in the male		
No	24	14.8
Yes	138	85.2
Weak and intermittent urination is a symptom of Prostate cancer		
No	44	27.2
Yes	118	72.8
Low back pain is a symptom of Prostate cancer	74	45.7
No	88	54.3
Yes		
Prostate cancer can be hereditary		
No	24	14.8
Yes	138	85.2
Increasing age, obesity and smoking pose a risk for prostate cancer		
No	21	13.0
Yes	141	87.0
One may have developed prostate cancer and show no symptoms at all	57	35.2
No	105	64.8
Yes		
Prostate cancer is not a communicable disease		
No	24	14.8
Yes	138	85.2
Prostate cancer can be treated surgically		
No	11	6.8
Yes	151	93.2

Table 2.1 shows that majority of the respondents (84.6%) had good knowledge on prostate cancer.

Table 2.1: Level of knowledge on Prostate Cancer among Male Staff

Level of Knowledge (Male Staff)	Frequency	Percentage (%)
Good	137	84.6
Poor	25	15.4
Total	**162**	**100**

Table 3 shows the perception of respondents on preventive measures against prostate cancer. More than half of the respondents (SA = 40.7%, A = 51.9%) agreed that regular exercises help in preventing prostate cancer with all respondents agreeing to the fact that maintaining a healthy weight can help prevent prostate cancer. Equally, most of the respondents (SA = 63.6%, A = 29.6%) were of the opinion that diet rich in fruits and vegetables can help prevent prostate cancer coupled with frequent medical checkups can help prevent prostate cancer.

As shown in table 3.1, majority of the respondents (88%) had positive perception on prevention of prostate cancer while 12% had negative perception.

Table 4 shows that five factors (fear of prostate cancer (COR 1.540), level of education (COR 4.036), place of residence (COR 1.734), awareness program (COR 2.483) and family history of prostate cancer (COR 1.473) were significantly associated with knowledge of prostate cancer. After adjustment for co-variables, family history of prostate cancer was predicted to increase the knowledge of prostate cancer by ten-fold (AOR 10.859). Also, level of education and cultural influence were likely to improve the knowledge of prostate cancer by six times (AOR 6.586) and five times (AOR 5.974).

Table 3: Perception on Prevention of Prostate Cancer among Male Staff

S/N	Items	Strongly agree N (%)	Agree N (%)	Disagree N (%)	Strongly Disagree N (%)
1.	Regular exercises can help in preventing prostate cancer	66(40.7)	84(51.9)	-	12(7.4)
2.	Maintaining a healthy weight can help prevent prostate cancer.	91(56.2)	71(43.8)	-	-
3.	Diet rich in fruits and vegetables can help prevent prostate cancer	103(63.6)	48(29.6)	-	11(6.6)
4.	Frequent medical checkups can help prevent prostate cancer	114(70.4)	48(29.6)	-	-
5.	Awareness of prostate cancer can prevent prostate cancer	117(72.2)	34(21.0)	11(6.8)	-
6.	Having no family history of prostate cancer can prevent PC	45(27.8)	49(30.2)	68(42.0)	-

Table 3.1: Level of Perception on Prevention of Prostate Cancer among Male Staff

Level of Perception	Frequency	Percentage (%)
Positive Perception	143	88
Negative Perception	19	12
Total	**162**	**100**

Multivariable logistic regression analysis reveals that knowledge on Prostate Cancer (adjusted odds ratio [AOR] 2.03 [95% CI 1.06-4.82]; $p<.007$), culture (AOR 5.38 [2.03-6.33]; $p< 0.034$), keeping medical appointments (AOR 2.62 [1.84-4.62]; $p< 0.0265$) and awareness of its signs and symptoms (AOR 4.91 [1.81-4.26]; $p< 0.245$) were significant predictors of health seeking behaviour among male staff on prostate cancer.

DISCUSSION

This study adopted a cross-sectional design to assess knowledge and prevention of prostate cancer (PCa) among male staff in Achievers' University, Owo, Ondo State. Less than half of the study's participants were between the ages of 18 and 28, with the least number of participants between the ages of 49 and 58. Majority of the respondents identified themselves as Christians, this is related to the fact that the study area is dominated by Christians.

Table 4: Logistic Regression on Factors Influencing Knowledge of Prostate Cancer

Factors	Knowledge		COR	AOR	P-value
	Good N (%)	Poor N (%)			
Fear of prostate cancer has limited my knowledge of prostate cancer	52(32.1)	110(67.9)	1.540	3.493	0.024*
My level of education doesn't make me know much about prostate cancer	72(44.4)	90(55.6)	4.036	6.586	0.356*
There is limited access to knowledge of prostate cancer because of where I live	94(58.0)	68(42.0)	1.734	2.562	0.443*
My culture doesn't support prostate cancer screening	77(47.5)	85(52.5)	4.838	5.974	4.453
My occupation limits my knowledge of prostate cancer	69(42.6)	93(57.4)	5.734	3.890	0.055
Awareness program on prostate cancer improved my knowledge	83(51.2)	79(48.8)	2.483	4.653	0.384*
Family history of prostate cancer has made me seek more about prostate cancer	102(63.0)	60(37.0)	1.473	10.859	0.211*
My religion has limited my knowledge of prostate cancer	90(55.6)	72(44.4)	0.910	1.090	0.754
Attitude of healthcare workers limits my knowledge of prostate cancer	48(29.6)	114(70.4)	1.834	0.852	0.930
I feel embarrassed seeking knowledge about prostate cancer	93(57.4)	69(42.6)	0.994	0.907	0.661

CI 95%. *=significant variables

Table 5: Factors Influencing Health Seeking Behaviour of Male Staff on Prostate Cancer

Variable items	OR	AOR(95%CI)	P value
Knowledge on the PCa	1.78	2.03 (1.06-4.82)	0.007*
Comfortability with the procedures	3.22	2.10 (0.38-1.01)	3.037
Socio-economic status	2.63	2.28 (0.32-0.92)	1.937
Culture	1.02	5.38 (2.03-6.33)	0.034*
Medical appointments	1.84	2.62 (1.84-4.62)	0.265*
Seeking information about Pca	0.63	2.64 (1.04-0.73)	1.003
Awareness of its signs and symptoms	1.82	4.91 (1.81-4.26)	0.245*
Fear of the disease	0.94	1.53 (1.05-1.61)	2.821
Interpersonal relationship with health personnel	1.19	1.73 (1.04-0.93)	0.936
Curiosity about health status	1.30	3.30 (0.70-1.00)	0.651

**=significant variables; Level of sig= 0.05*

Also, less than one-fifth of respondents were administrative staff, followed by drivers office workers and lecturers In addition, less than one quarter reported a family history of prostate cancer, which is consistent with the finding of a study conducted at Tikur Anbessa specialized Hospital, Addis Ababa, Ethiopia on Awareness of prostate cancer and its associated factors among male patients receiving care in the urology unit in which nearly a quarter of respondents had a family history of prostate cancer.[20] This is in contrast to a study conducted in South Africa's Limpopo province on men's prostate cancer knowledge, in which more than one-quarter had a family history of prostate cancer.[13]

Utilization of cancer screening services is significantly influenced by knowledge about prostate cancer and prostate cancer screening. This study found that the majority of participants had good knowledge of prostate cancer. This is consistent with the findings of the study conducted on predictors of prostate cancer screening intention among older men in Jordan, in which men's intention to get tested for prostate cancer was rated above average.[21] Additionally, in the study, many respondents with sufficient knowledge about prostate cancer screening indicated an intention to undergo prostate cancer screening.[7]

Most of the respondents reported to have heard about prostate cancer mostly from news media while others got the information from their relatives, friends and health professionals. In addition, majority agreed that prostate cancer is a form of tumor that attack gland in the male and also reported that weak and intermittent urination is a symptom of prostate cancer. This is consistent with the findings of the study conducted on prostate cancer screening among men in Obio Akpor LGA, Rivers State, Nigeria, where respondents were between the ages of 40 and 75, and the most frequently reported source of information about prostate cancer screening was the news media and healthcare workers.[7]

These findings are similar those of the study on prostate cancer awareness and screening among males attending an outpatient clinic at a tertiary health centre in Lagos, Nigeria.[22] Awareness is a clear sign of a desire to gain deeper knowledge and a step towards a positive attitude and healthy behavior. The knowledge, attitudes, and practices about prostate cancer were evaluated among Ugandan males by choosing individuals aged 18 to 71 by Owolabi et al. [23] The study found that the majority of the respondents had heard of prostate cancer. The fact that the majority of participants learned about the disease via health professionals is laudable since it demonstrates the level of sensitization that health workers have implemented, and social media is another key source of information for the participants.

This clearly differs from the research done by Awosan et al. on prostate cancer knowledge and screening among males attending outpatient clinics at a tertiary health institution in Lagos, Nigeria in which less than one quarter of the participants received PCa information from health professionals.[24]

The findings of this study also showed that there was a significant correlation between participants' educational level and their knowledge about prostate cancer. This allowed respondents with a university degree to demonstrate advanced knowledge about prostate cancer. Similarly, majority of staff with extensive knowledge of prostate cancer are academic staff. This is comparable to the findings of a survey conducted on knowledge, attitudes and awareness regarding prostate cancer among male staff at the University of Nigeria, Nsukka.[10] Also, majority of the study participants had positive attitudes toward prostate cancer prevention; this may be due to the participants' positions as university employees. This is in line with similar findings on knowledge, awareness and perception about prostate cancer among male civil servants in Kelantan, which showed that a high percentage of respondents had positive perceptions about prostate cancer, and in additio, the majority of participants felt they

would benefit from regular health check-ups.[25]

Men's knowledge about prostate cancer is generally influenced by several factors. Participants in this study stated that fear, low education, limited access to information, cultural and professional attitudes, family history of prostate cancer, and attitudes of health care professionals influenced their knowledge about prostate cancer. Among these factors, the crude odds ratio for education level was 4.036, suggesting that it was four times more likely to influence a respondent's knowledge about prostate cancer (PCa). Additionally, cultural and professional perspectives were four times and five times more likely to influence PCA knowledge, respectively.

A study conducted on the relationship between black men, culture, and beliefs about prostate cancer found that culture plays a role in influencing men's knowledge about prostate cancer, as they believe that prostate cancer reduces masculinity, so they do not seek treatment at a medical institution.[26] A literature review by Perdana *et al.* on the risk factors of prostate cancer and its prevention: found that men's willingness to talk to their doctors about prostate cancer is influenced by their views on taboos and concerns.[27]

Socioeconomic status, satisfaction with treatment, curiosity about the disease, recognition of signs and symptoms, fear of the disease, and interpersonal relationships with medical staff were identified as factors influencing health-seeking behavior in men with PCa. Among these factors, the crude odds ratios (COR) for socioeconomic status and satisfaction with treatment were 2.63 and 3.22, respectively. This means that the former factor is twice as likely to influence health behavior, and the latter factor is three times more likely to influence their health seeking behavior.

CONCLUSION

This study showed that a large number of respondents have a good level of knowledge and positive awareness about prostate cancer prevention. Factors influencing prostate cancer knowledge and health behavior were also identified with varying degrees of importance. Respondents' health care seeking behavior requires further research. Educational programs need to be developed to correct public misconceptions so that people can learn more about the disease and reinforce proactive actions. More research needs to be conducted on prostate cancer knowledge in remote areas, and researchers should consider developing educational videos that are useful in providing information and inspire people about the benefits of regular screening and early detection of prostate cancer.

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