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Prostate cancer screening: assessment of knowledge and willingness to screen among men in Obio Akpor LGA, Rivers State, Nigeria

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Abstract

Background: Worldwide prostate cancer is the second most frequent cause of cancer deaths and is the commonest cancer diagnosed among Nigerian men. Screening techniques can be employed to detect the disease earlier in apparently healthy individuals, and increasing evidence shows that this can decrease morbidity and mortality of the disease. The objective of this study was to assess the knowledge and intention to screen for prostate cancer among men in Obio Akpor Local Government Area, Rivers State, Nigeria.

Results: Respondents were within the ages of 40 and 75 years. The most frequently reported source of information about prostate cancer screening was the news media 72 (35.0%) and healthcare workers 62 (30.1%). Thirty (14.9%) of the respondents had good knowledge of prostate cancer, while 80 (39.6%) had good knowledge of prostate cancer screening methods. Concerning prostate cancer screening methods, only 47 (23.3%) were able to correctly identify screening methods for prostate cancer. With regards to intention to screen, 104 (51.5%) were willing to be screened for prostate cancer.

Conclusion: This study showed that the knowledge of prostate cancer was poor with only approximately half of the participants expressing intentions to screen for the disease. This emphasizes the need for the Rivers State Ministry of Health to carry out awareness campaigns on the importance of prostate screening.

Keywords: Prostate cancer, Screening, Intention, Prevention, Obio Akpor

1 Background

Prostate cancer is a public health concern among black men worldwide, and it is the second most common cause of cancer deaths in men [1]. While over 1.1 million cases were recorded in 2012 [2], the disease accounted for about 8% of all new cancer cases worldwide and 15% of cancer cases in men [3]. It is more common in blacks and men of mixed race compared to Caucasians and Asians. The lowest yearly incidence rates are seen in Asia, while the highest incidence is seen in North America and Scandinavia, especially among African-Americans [4]. In Nigeria, prostate cancer is the most commonly diagnosed malignancy among men and a hospital prevalence of 182.5 per 100,000 male admissions was recorded in 2010 in Osun State [5, 6].

It is estimated that one-third of the cases of prostate cancer can be prevented and another third can be cured if detected early through screening [7]. Even though there has not been a consensus as regards guidelines for prostate cancer screening, large population studies have shown increased survival benefits in the early treatment of prostate cancer following screening [8]. There is also evidence that the recent decline in cancer mortality in several countries was as a result of screening and early detection. This fact was proven through two large international trials to determine the benefit of screening

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and early detection of prostate cancer. Hence, there is a need to assess men's intentions to undergo prostate cancer screening in this study. That said, the recommended screening tests for prostate cancer are the measurement of serum prostate-specific antigen (PSA) [9]. Other screening tests such as digital rectal examination and ultrasonography are also essential in the diagnosis of prostate cancer.

Studies done in Nigeria have shown that knowledge of prostate cancer was generally low [10–12]. Furthermore, in Rivers State there is a paucity of data on the knowledge of prostate cancer among men. Studies that have looked at men's intention to screen for prostate cancer have reported variable findings with screening intentions as high as 86% and as low as 28% [13, 14]. This study determined the knowledge and intention for prostate cancer screening in Obio Akpor Local Government Area, Rivers State, Nigeria.

2 Methods

2.1 Study area

The study was conducted in March 2017 in Obio Akpor Local Government Area, Rivers State. The Local Government has 17 Wards and is bounded by Ikwerre to the North, Oyigbo to the East, Port Harcourt Local Government Area to the South, and Emuoha to the West. According to the 2006 census, the total population of men of 40 years and above was 68,838 [15].

2.2 Study population

The study population is comprised of men, who were at least 40 years of age and who had been resident in the Local Government Area for at least 1 year. Health workers and men who had been diagnosed with prostate cancer were, however, exempted from the study.

2.3 Study design and sample size determination

It was a descriptive cross-sectional study. A sample size of 225 was calculated using a prevalence rate of 13.7% [11], the margin of sampling error tolerated was set at 5%, and a non-response rate of 10% was assumed.

2.4 Sampling method

Respondents for this study were selected using the multistage sampling method. In the first stage, one ward (ward 12) was randomly selected from the 17 Wards in Obio Akpor by balloting. For the second stage, Rumuigbo town was randomly selected out of the two towns in the ward by balloting. Thereafter, one community (Mgbesilaru) was randomly selected out of the four communities in the town. In the last stage, all households with eligible males were included in the study. The starting point was determined by spinning a bottle.

2.5 Study instrument

A structured interviewer-administered questionnaire containing close-ended questions was used in this study. The questionnaire was pretested in Rumuosi, Rivers State, among 21 respondents. It was divided into sections on socio-demographics, knowledge of prostate cancer and screening, attitude toward prostate cancer screening, and willingness to screen for prostate cancer.

2.6 Data analysis

Data were collated and entered into a Microsoft Excel spreadsheet and analyzed using the Statistical Package for the Social Sciences (SPSS) software version 20. Descriptive and inferential statistics were generated. A P value less than 0.005 was considered statistically significant. Prostate cancer knowledge was graded on a 2-point scale: poor knowledge (<12) or good knowledge (≥ 12). A total of 12 questions were asked, and the maximum attainable score was 22. Prostate cancer screening knowledge was also graded on a 2-point scale: poor knowledge of screening (<3) or good knowledge of screening (≥ 3). A total of five questions were asked, and the maximum attainable score was 5. The chi-square test was used to test for association between knowledge and intention to screen for prostate cancer.

3 Results

3.1 Socio-demographic characteristics

The mean age of the participants was 48.7 years, and the age-group with the largest number of respondents was 40–49 years [127, (62.9%)]. Almost all the respondents were Christians 196 (97.0%) and 190 (94.0%) were married. A little less than half were graduates of tertiary institutions [91(45.0%)] with the most frequently occurring occupation being businessman 71 (35.1%). The majority of respondents 166 (82.2%) did not have any form of health insurance. More of the respondents had a monthly income between N18,000 and N49,000 [46 (22.8%)].

3.2 Knowledge of prostate cancer among respondents

Knowledge of prostate cancer among men in Obio Akpor was assessed on a 2-point scale where a score ≥ 12 implied good knowledge and a score <12 implied poor knowledge. The respondents recorded a mean score of 7.00, and the majority of them 172 (85.1%) had poor knowledge of prostate cancer. The most frequent source of information was the news media 90 (40.0%) and healthcare workers 38 (16.9%).

Table 1 Intention to screen in near future and prostate cancer knowledge score

Variable	Category	Good knowledge (%)		Poor knowledge (%)		χ^2	*p value*
		24	**(14.3)**	**144**	**(85.7)**		
Intention to screen	Yes	15	14.4	89	85.6	0.004	0.948
	No	9	14.1	55	85.9		

Table 2 Intention to screen in near future and prostate cancer screening knowledge score

Variable	Category	Good knowledge		Poor knowledge		χ^2	*p value*
		72	**(42.9%)**	**96**	**(57.1%)**		
Intention to screen	Yes	57	54.8	47	45.2	15.92	<0.001*
	No	15	23.4	49	76.6		

*$p < 0.005$ statistically significant

3.3 Knowledge of prostate cancer screening among respondents

Knowledge of prostate cancer screening was also assessed on a 5-point scale where a score < 3 implied poor knowledge and a score ≥ 3 implied good knowledge. The respondents recorded a mean score of 2.04, and most of them 122 (60.4%) had poor knowledge about prostate cancer screening (Table 2). More of the respondents got their knowledge of prostate cancer screening from the news media 72 (35.0%) and healthcare workers 62 (30.1%).

3.4 Intention to screen for prostate cancer among respondents

With regards to intention to screen for prostate cancer in the near future, men who had poor knowledge about prostate cancer 89 (85.6%) were more likely to report intention to screen compared with those who had good knowledge of prostate cancer 15 (14.4%). This association was however not statistically significant ($p = 0.948$) (Table 1).

More of the respondents with good knowledge of prostate cancer screening 57 (54.8%) expressed intention to screen for prostate cancer compared with those who had poor knowledge 47(45.2%). This association was statistically significant $p = < 0.001$ (Table 2).

4 Discussion

The results of this study showed that the majority of respondents had poor knowledge of prostate cancer disease and its screening test. Studies carried out in South West Nigeria similarly reported low knowledge among their respondents [12]. On the contrary, a study carried out in Italy reported a much higher knowledge of prostate cancer and its screening test. This may be because of the way in which knowledge was assessed in their study [16]. The findings of the current study imply that efforts to educate the public about prostate cancer screening need to be intensified.

A little more than half of the respondents had the intention to screen for prostate cancer. This is even lower than the findings of other studies carried out in Nigeria [10, 17] that recorded higher intentions by respondents to be screened. The low intention in the current study was mainly because respondents were not aware of the existence of a screening test for the disease. This implies that more effort needs to be made to increase awareness of the screening test and possibly facilities where it can be done. However, the findings of this study show better intention than another study done in Kenya [18] which revealed a lower intention of respondents to screen.

5 Conclusion

This study showed that the knowledge of prostate cancer and prostate cancer screening was poor among men in Obio Akpor Local Government Area, Rivers State. Though about half of the respondents were willing to screen for prostate cancer, this is low compared with the findings from studies done in other geopolitical zones in Nigeria.

Abbreviations

SPSS: Statistical Package for the Social Sciences; PSA: Prostate specific antigen.

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Not applicable.

Authors' contributions

All authors were involved in the conceptualization of the work. RAE, BAE, and UE carried out data collection and literature review. RAE did the data analysis. EOA and AT also did literature review and prepared the manuscript for publication. All authors read and approved the final manuscript.

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Availability of data and materials
The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Ethics approval and consent to participate
This study was approved by the Research Ethics Committee of the University of Port Harcourt Teaching Hospital in Nigeria on March 8, 2017; Reference Number of approval: UPTH/ADM/90/S.II/VOL.XI/378. All participants included in this study gave written informed consent to participate in this research. Participation was voluntary, and confidentiality was maintained throughout the study.

Consent for publication
All participants included in this research gave written informed consent to publish the data contained within this study.

Competing interests
The authors declare that they have no competing interests.

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