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Knowledge, attitudes, and perception of prostate cancer among male outpatients of a tertiary care hospital in south-east Nigeria

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ABSTRACT

Prostate cancer is the number one cancer in males both in incidence and mortality in Africa and the increased mortality rate amongst this population is mainly attributed to late presentation. It has been postulated that poor perceptions and knowledge about prostate cancer and the availability of alternative therapies are the reasons for late presentation. This study seeks to find out if the media attention and increased awareness of prostate cancer in Nigeria has actually improved the knowledge and attitudes of men toward prostate cancer. The study was a cross-sectional descriptive study conducted among men aged ≥18 years in the General Outpatient Department of Chukwuemeka Odumegwu Ojukwu University Teaching Hospital. The mean percentage knowledge score was 60.29%. The mean percentage attitude score was 60.79%. The mean percentage perception score was 66.82%. Less than half of them (43.3%) had a positive attitude toward prostate cancer. More than half (53.6%) of them had a negative perception of prostate cancer. There was a strong evidence of association between education and perception of prostate cancer ($X^2 = 20.14$, $p = 0.000$). In conclusion, the patients of the hospital expressed a reasonable level of knowledge about the prostate cancer.

INTRODUCTION

Prostate cancer is the number one cancer in males both in incidence and mortality in Africa, constituting 40,000 (13%) of all male cancer incidences and 28,000 (11.3%) of all male cancer-associated mortalities (Akinremi *et al*., 2011; Ferlay *et al*., 2010,). Its incidence and prevalence in black men is in multiples of those from other races in several studies (Adibe *et al*., 2017). Even though the exact reason for this is not clear cut, the increased mortality rate amongst this population is mainly attributed to late presentation (Akinremi *et al*., 2011, Ojewola *et al*., 2017). It has been postulated that poor perceptions and knowledge about prostate cancer and the availability of alternative therapies are the reasons for late presentation. It was also found that low levels of education, older age, and speaking a non-English language were directly related to poor knowledge about the disease (Deibert *et al*., 2007). Though the awareness of prostatic diseases has increased in recent times, this has not translated into increased screening or earlier presentation amongst men in developing countries. It is not clear whether an increase in the utilization of prostate cancer screening services might be associated with actual or perceived knowledge of prostate cancer (Agho and Lewis, 2001; Ojewola *et al*., 2017); however, a good knowledge or understanding of diseases is generally associated with a better healthcare-seeking attitude and behavior (Kanungo *et al*., 2015).

Negative attitudes and perceptions toward prostate cancer may influence screening and treatment for prostate cancer in both developed and developing countries, in addition to the disparities in the availability of screening services for prostate cancer (Yeboah-Asiamah *et al*., 2017). Understanding the perceptions of prostate cancer and how it translates to screening and treatment is important for physicians and public health practitioners as this information clarifies existing knowledge and provides valuable information for the design of public health programs to reduce the disease burden of prostate cancer (Yeboah-Asiamah *et al*., 2017). A study found out that physicians contribute toward the level of patients' knowledge about prostate

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cancer even though a greater number of participants had never discussed anything related to prostate cancer and screening tests with their physicians (Smith *et al*., 1997).

Recently, there has been growing interest in the role of knowledge, attitudes, and screening practices in prostate cancer prevention and control (Agho and Lewis, 2001; Akpuaka *et al*., 2013; Kanungo *et al*., 2015).This study seeks to find out the knowledge and attitudes of men toward prostate cancer. In this study, we examined the knowledge, attitudes, and perception of male patients at the General Outpatient Department of a Tertiary Health Institution in south-east, Nigeria.

METHODS

Study type

The study was a cross-sectional descriptive study conducted among men aged ≥18 years in the General Outpatient Department of Chukwuemeka Odumegwu Ojukwu University Teaching Hospital. This is a tertiary health care facility which offers comprehensive health care services located at Amaku Village, Awka, south-eastern Nigeria.

Study sample selection

For arriving at the sample size, the percentage knowledge of 74% was obtained in a study carried out by Oranusi *et al*. (2012) in south-east Nigeria. The sample size for the study was determined using Raosoft sample size calculator (http://www.raosoft.com/samplesize.html). At 95% confidence interval and the degree of accuracy set to 0.05, the desired sample size came to 296. A target population of 300 was set so as to enable sub-group comparisons. The survey was conducted from July to September 2017. Consecutive male patients attending the clinic during weekdays were included in the study by convenience sampling. Critically ill patients and those who could not understand English, Igbo, Yoruba, or Hausa were excluded. There were no financial benefits for participating in the research.

Ethical considerations

The ethical approval for this study was obtained from the Chukwuemeka Odumegwu Ojukwu University Teaching Hospital Ethical Committee (COOUTH/CMAC/ETH.C/VOL.1/0033) while verbal consent was obtained from the participants and they were assured of the confidentiality of their information.

Data collection and analysis

Questionnaire for assessment of knowledge, attitude, and perception of breast cancer was adapted from Adibe *et al*. (2017) instrument on knowledge, attitudes, and perception of prostate cancer among male staff of the University of Nigeria. Face and content validation were carried out by experts and the questionnaire has good psychometric properties. SPSS was used to determine the internal consistency using Cronbach alpha which was greater than 0.7. The self-administered questionnaire, written in English, contained 56 close-ended questions organized into four sections. Section A sought for information on Socio-demographic data; Section B, an assessment of knowledge; Section C, an assessment of attitude; and Section D, an assessment of perception. The knowledge domain consisted of 20 items with "yes" or "no" responses, some of which were negatively worded. Each correctly answered item was scored "1" and "0" if otherwise, given possible minimum and maximum sum total scores of 0 and 20, respectively, for all the items. The sum total score was transformed into percentage knowledge score. For ease of comparison, the knowledge status was divided into "low" and "high" knowledge based on the percentage mean knowledge score, respondents who scored below the mean of 60.29 were categorized as having low knowledge while respondents who had equal or greater than the mean were categorized as having high knowledge of prostate cancer.

The attitude and perception domains comprised 15 and 30 items, respectively, both had 5-Likert scale of "strongly disagree, disagree, undecided, agree, and strongly agree".

The strongly disagree was scored "0," disagree "1," undecided "2," agree "3," and strongly agree "4." The items were worded to reflect "negative" to "positive" attitude/ perception when responses from "strongly disagree" to "strongly agree" were selected. This gave possible minimum and maximum sum total scores of 0 and 60 for attitude, respectively, and 0 and 145 for perception, respectively. These sum total scores were transformed into percentage attitude and perception scores. For ease of comparison, the attitude/perception status was divided into "negative" and "positive" based on the percentage mean attitude/perception score, respondents who scored below the mean were categorized as having negative attitude/perception while respondents who had equal or greater than the mean (60.79, 66.82) were categorized as having positive attitude/perception, respectively, of prostate cancer screening and treatments. For low literates, the interview was conducted in their local dialect by a trained research assistant. The Statistical Package for Social Sciences, SPSS version 21, was used to analyze the data obtained. The data analyzed were presented in frequencies, valid percentages, and mean values. Chi-square tests were made to find association between the dependent and independent variables with significance set at <0.05.

RESULTS

Out of the 300 questionnaires distributed, 219 were filled and returned (73.0% response rate). Respondents were mainly single (64.5%, n = 127) and between the age of 18 and 30 years (62.2%, n = 122). Most of them had a tertiary education (50.8%, n = 96). About half (49.2%, n = 98) of the respondents were unemployed while only four of them were retired (Table 1).

The mean percentage knowledge score was 60.29% .The mean percentage attitude score was 60.79%. The mean percentage perception score was 66.82% (Table 2).

More than half (52.5%) of the respondents surveyed had a good knowledge level of prostate cancer. Less than half of them (43.3%) had a positive attitude toward prostate cancer. More than half (53.6%) of them had a negative perception of prostate cancer. The greater majority of respondents who demonstrated a good knowledge of prostate cancer had tertiary education (65.6%, n = 40). The employed respondents constituted the greater majority (53.7%, n =36) of respondents with good knowledge of prostate cancer. The highest proportion of respondents with good knowledge of prostate cancer was between 18 and 30 years, contributing 78.8% (n = 52). Respondents with tertiary education

Table 1. Demographic data of respondents.

Characteristics	Frequency (*n*)	Percentage (%)
Education		
Primary	8	4.2
Secondary	86	45.3
Tertiary	96	50.8
Age		
18–30 years	122	62.2
31–40 years	51	26.0
41–50 years	12	6.1
51–60 years	8	4.1
61 and above	3	1.5
Marital Status		
Single	127	64.5
Married	62	31.5
Co-habiting	2	1.0
Divorced/Widowed	6	3.0
Employment Status		
Employed	97	48.7
Unemployed	98	49.2
Retired	4	2.0

constituted the greater part of those with positive attitude toward screening and treatment of prostate cancer. Majority (66.0%, n = 31) of respondents with positive attitude were within the age of 18–30 years. More employed respondents (55.3%) had a positive attitude toward prostate cancer. About 70.3% of the respondents claimed to be familiar with the symptoms of prostate cancer. About 21.5% thought prostate cancer occurs in females. More than half (59.4%, n = 130) of the respondents know that it is recommended to have yearly prostate examination starting at 60 years. Almost half (40.3%, n = 85) of the respondents did not want be screened because it would increase their fear and anxiety. More than a quarter (35.7%, n = 76) of the respondents surveyed admitted that they would go for the screening if an immediate family member asked them to do so. More than a quarter (38.3%, n = 83) of the men surveyed believed if they were not aware of prostate cancer, they cannot have it. More than a fifth (22.4%, n = 49) of the respondents believed that getting checked and treated for prostate cancer could lead to sexual and penile dysfunction.

There was an evidence of association between employment status and perception of prostate cancer (X^2 = 9.09, p = 0.011). There was a strong evidence of association between education and perception of prostate cancer (X^2 = 20.14, p = 0.000). There was an evidence of association of age and perception of prostate cancer (X^2 = 9.65, p = 0.047). There was a strong evidence of association between education and attitude toward prostate cancer (X^2 =34.59, p = 0.000). There was an evidence of association between age and knowledge of prostate cancer (X^2 = 10.86, p = 0.028). There was an evidence of association between marital status and knowledge of prostate cancer (X^2 =15.95, p = 0.014). There was an evidence of association between education and knowledge of prostate cancer (X^2 = 13.79, p = 0.001) (Table 3).

Table 2. Mean percentage knowledge, attitude, and perception scores.

Domains	*N*	Mean	Standard deviation
Percentage knowledge score	183	60.29	14.99
Percentage attitude score	196	60.79	15.81
Percentage perception score	140	66.82	8.73

DISCUSSION

This study reported a good mean percentage score for knowledge (60.29%), which suggests that the respondents had a moderate level knowledge of prostate cancer. This study is somewhat similar to findings of a similar study carried out among male staff of a university in south east Nigeria, where there was high level (71.2%) of knowledge of prostate cancer (Adibe *et al*., 2017). The difference in knowledge scores can be attributed to a greater level of exposure to information among the men found in an academic institution and a higher education level. The study also concurs with findings from another study carried out in eastern Nigeria where male public servants had a high level of knowledge of prostate cancer (Oranusi *et al*., 2012). However, this result is in contrast with the findings from a study conducted in western Nigeria where respondents had a low level of awareness and specific knowledge related to prostate cancer (Oladimeji *et al*., 2013).

A greater proportion of respondents who demonstrated a good knowledge of prostate cancer had a tertiary education (65.6%), thus indicating an association between level of education and responses to knowledge questions. This corroborates findings from other studies previously carried out (Adibe *et al*., 2017; Ogunsanya *et al*., 2017; Winterich *et al*., 2009). Furthermore, the employment played a positive role as employed respondents seemed to be more knowledgeable about prostate cancer. Evidently, being employed is associated with a higher level of exposure and education. This is in keeping with the findings from a previous study which suggest that socio-economic status has a significant effect on the level of knowledge of prostate cancer (Robinson *et al*., 1996).

Younger men scored better in knowledge of prostate cancer than older men. This fact may be attributed to the fact that majority of the respondents were between 18 and 30 years (62.2%) and older men were less represented in the study. The higher knowledge scores among the younger men may, however, be linked to the increase in level of awareness campaign across mass and social media which are dominated by younger people. This finding concurs with findings from other studies reporting that older men score worse in comparison to younger men with respect to knowledge about prostate cancer (Agho and Lewis, 2001; Arnold-Reed *et al*., 2008). Some studies have shown that older men scored better than younger men in knowledge about prostate cancer (Adibe *et al*., 2017; Nakandi *et al*., 2013). This finding has been attributed to targeted education for older men as they are more predisposed to prostate cancer. Also, it is more likely that they experience a higher frequency of symptoms due to benign prostatic hyperplasia or prostate cancer, resulting in more visits to the hospital where prostate cancer can be discussed. The poor knowledge among the older men in this study is particularly worrisome since they are more predisposed to the malignancy. It has been reported in Nigeria that the mean age of prostate cancer

Table 3. Association of respondents' characteristics with knowledge, attitude, and perception classifications.

Characteristics	Knowledge-frequency (%)		X^2 (*p*-value)	Attitude-frequency (%)		X^2 (*p*-value)	Perception-frequency (%)		X^2 (*p*-value)
	n = 183			*n* = 196			*n* = 140		
	Poor	Good		Negative	Positive		Negative	Positive	
Overall	87 (47.5)	96 (52.5)		111 (56.6)	85 (43.4)		75 (53.6)	65 (46.4)	
Education			13.79 (0.001)*			34.59 (0.000)*			20.14 (0.000)*
Primary	4 (4.2)	2 (3.3)		4 (3.3)	2 (4.3)		1 (1.5)	4 (6.5)	
Secondary	58 (60.4)	19 (31.1)		76 (62.8)	6 (12.8)		40 (61.5)	14 (22.6)	
Tertiary	34 (35.4)	40 (65.6)		41 (33.9)	39 (83.0)		24 (36.9)	44 (71.0)	
Age			10.86 (0.028)*			9.65 (0.047)*			5.67 (0.224)
18–30 years	55 (55.0)	52 (78.8)		79 (62.2)	31 (66.0)		40 (59.7)	35 (58.3)	
31–40 years	33 (33.0)	10 (15.2)		38 (29.9)	7 (14.9)		22 (32.8)	13 (21.7)	
41–50 years	7 (7.0)	2 (3.0)		5 (3.9)	6 (12.8)		3 (4.5)	7 (11.7)	
51–60 years	3 (3.0)	2 (3.0)		3 (2.4)	3 (6.4)		1 (1.5)	4 (6.7)	
61 and above	2 (2.0)	0 (0)		2 (1.1)	0 (0)		1 (1.5)	1 (1.7)	
Employment status			4.62 (0.099)			2.11 (0.348)			9.09 (0.011)*
Employed	41 (39.8)	36 (53.7)		59 (43.7)	26 (55.3)		29 (41.4)	38 (62.3)	
Unemployed	59 (57.3)	31 (46.3)		74 (54.8)	20 (42.6)		41 (66.1)	21 (33.9)	
Retired	3 (2.9)	0 (0)		2 (1.5)	1 (2.1)		0 (0)	2 (3.3)	
Marital status			15.95 (0.014)*			5.79 (0.447)			5.09 (0.533)
Single	61 (58.7)	55 (83.3)		91 (67.4)	28 (63.6)		45 (62.5)	35 (57.3)	
Married	40 (38.5)	8 (12.1)		40 (29.6)	13 (29.5)		25 (34.7)	21 (34.4)	
Co-habiting	1 (1.0)	1 (1.5)		1 (0.7)	1 (2.3)		0 (0)	2 (3.3)	
Divorced/Widowed	2 (2.0)	2 (3.0)		3 (2.2)	2 (4.6)		2 (2.8)	3 (4.9)	

*$p<0.05$

patients at the time of diagnosis has been reported to be about 68.3 years (Olapade-Olaopa *et al*., 2014).

Less than half of overall respondents in this study exhibited positive attitude toward prostate cancer screening and treatments. The poor attitude toward prostate cancer screening contributes to late presentation of prostate cancer in developing countries such as the one in which this study took place. The poor attitude amongst respondents surveyed is in line with findings from the Ugandan study, which also recorded a poor attitude among Ugandan men surveyed (Nakandi *et al*., 2015). Therefore, there is an urgent need to educate Nigerian men more about prostate cancer (Olapade-Olaopa *et al*., 2014). Aggressive educational campaigns fuelled by involvement from the government and non-governmental organizations just like in HIV/AIDS will help increase knowledge, positive attitude, and perception toward prostate cancer.

Although, quite a good number expressed that going for screening will increase their fear, anxiety, and believed that without knowledge of the condition they won't have it, some of the respondents admitted that they would make themselves available for screening if convinced by a close relative. More educated respondents had more positive attitudes toward screening and treatment of prostate cancer. Also, youths and employed respondents had a greater positive attitude toward prostate cancer.

A relatively high percentage (53.6%) of respondents had a negative perception of prostate cancer and also believed that getting checked and treated for prostate cancer could cause erectile dysfunction. This has been recorded to result in low turnout for prostate cancer screening as seen among men in some areas (Arnold-Reed *et al*., 2008). Furthermore, some reports have identified erectile and sexual dysfunction as a sensitive issue for men, which limits their participation in prostate cancer screening (Clarke-Tasker and Wade, 2002; Lambert *et al*., 2002)

The absence of radical dissemination of information directed toward early detection and frequent screening, in addition to the fact that there is no national policy on prostate cancer screening, has contributed to late presentation of disease in men and reduced chances for cure and survival in Nigeria. This is important as studies have reported decreasing prostate cancer mortality rates in countries with more widespread screening policies (Nakandi *et al*., 2013).

This study shows that although there is growing interest in the role of knowledge, attitudes, and screening practices in prostate cancer prevention and control, there has not been commensurate increase in actual knowledge, positive attitude, and perception among men. Further studies, massive and appropriate health education, health screening, and health promotional campaigns are necessary in order to bring about more positive outcomes with respect to prostate cancer screening and management. Also, the great focus on curative treatment rather than preventive which makes physicians in Nigeria concentrate on the chief complaints rather than total assessment of the patients and recommendation of other tests necessary for the patient's age and clinical demands is also a problem (Ojewola *et al*., 2017). Enlightening patients on other medical conditions, they are at risk of developing during consultation for another illness, will help in early detection of other diseases and improve

prognosis particularly for malignancies as patients mostly accept their ignorance and are willing to learn.

LIMITATIONS

The study population does not represent the general population as study assessed only people visiting the hospital and hence did not sample the knowledge attitude and perception of otherwise healthy men. Also, older men whom are even more predisposed to the condition were under represented in the study.

CONCLUSION

The out patients surveyed expressed an appreciable level of knowledge about prostate cancer. Although, quite a number had positive attitude toward the disease, majority possessed negative attitude, and perception about prostate cancer. This points to the need for wide-spread sensitization and educational programs on prostate cancer that will increase the acceptance of screening activities, early detection, and ultimately better management of disease state.

CONFLICTS OF INTEREST

None.

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