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Awareness and practice of prostate cancer screening among middle age men in a rural community in North-Central, Nigeria

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Abstract

Prostate cancer (PCa) is the most commonly diagnosed cancer in middle aged men in Nigeria; yet prostate cancer screening is not a common practice, thus resulting in late presentation of patients to the hospital when little or no cure can be administered. This study seeks to assess the awareness and practice of prostate cancer screening among middle age men in a rural community in Kwara State. A community based cross-sectional study was conducted among 158 respondents using purposive sampling technique. The instrument for data collection was a self-structured questionnaire and the response rate was 98.1%. Data collected were analyzed using both descriptive and inferential statistics with level of significant set at 5% (0.05). The data were presented in tables and chart.

The result revealed that the majority of the respondents were between age 55-65years. Only 34.8% of respondents were aware about prostate cancer (PCa) screening and their main source of information was mass media. All the respondents (100%) have never gone for prostate cancer screening before and the major reasons identified for poor practice of PCa screening were lack of awareness (45.8%), unavailability of the screening tests(28.4%) misconceptions about screening test 24 (15.5%) and cost of screening 13 (8.4%). However, majority (85.2%) of respondents were willing to go for prostate cancer screening if recommended by health care professionals.

The study concluded that respondents demonstrated poor awareness and practice of PCa screening, despite willingness to screen if recommended. Therefore, there is need for healthcare providers to sensitize the public and provide counselling for high-risk individuals on PCa screening in order for them to make informed choices and improve uptake of the screening; and this will in turn help curb the burden of prostate cancer in this population

Keywords: Awareness and practice, Middle age men, Prostate cancer screening.

Introduction

Prostate cancer (PCa) is the second most commonly diagnosed cancer in men globally, with an estimate of 1.6 million new cases annually (Fitzmaurice, Allen, Barber, Barregard, Bhutta, Brenner, & Fleming, 2017; Bray, Ferlay, Soerjomataram, Siegel, Torre, Jemal, 2018). It is the third leading cause of death with about 366,000 deaths annually and 3.1% of the total cancer-related deaths globally (Bray, et al., 2018).

According to the American Cancer Society (2016) all men are at risk of developing prostate cancer (PCa) from age 50years and above. However in recent times, patients present with prostate cancer at increasingly younger ages especially among the African American men (Sperling, Lepor, & Lamm, 2019; Lavery, Kirby, & Chowdhury, 2016; Ogundele & Ikuerowo, 2015; Ikuerowo, Omisanjo, Bioku, Ajala, Mordi, & Esho, 2013). PCa is predominantly common among men of African descent compared to other races and it is the leading cause of mortality among middle aged men in resource poor settings (Ogundele &Ikuerowo, 2015; Rebbeck, Devesa, Chang, Bunker, Cheng, Cooney, et al. 2013; Baade, Youlden and Krnjacki 2009; Ajape, Babata, & Abiola, 2010)

Prostate cancer (PCa) is the most common cancer in men in Nigeria and it constitutes 11–12% of all male cancers (Ogundele &Ikuerowo, 2015; Ogundipe & Obinna, 2008). In resource poor settings like Nigeria where there is no active screening program and efficient national cancer mortality database, it difficult to assess the true burden of PCa (Oranusi, Mbieri, Oranusi, & Nwofor, 2012). However, studies in Nigeria emphasize the increasing prevalence of the disease and most cases are usually diagnosed late when patients are less likely to receive curative treatment (Ikuerowo et al., 2013; Olapade-Olaopa, Obamuyide &Yisa 2008).

Screening to identify prostate cancer in its preclinical and locally confined state, when it might be cured by radical surgery or radiotherapy, is a concept that has proved attractive to urologists, oncologists, and the public (Ogundele & Ikuerowo, 2015; American Cancer Society, 2016). Early screening for prostate cancer enhances treatment outcomes and thus increase survival rate associated with prostate cancer (Barry, &Simmons, 2017).

Several screening processes have been identified to detect the cancer at the early and asymptomatic stage, the most common screening process for prostate cancer includes: Prostate Specific Antigen (PSA) test and Digital Rectal Examination (DRE). The Prostate Specific Antigen (PSA) test is used to detect any abnormality in the blood PSA level, the PSA is a protein produced by the prostate gland and it is present in little quantity in the blood. Therefore, an elevated blood PSA level indicates an abnormality in the functioning of the prostate gland. The Digital Rectal Examination (DRE) is used to detect any abnormal increase in the size of the prostate gland. Although both tests are used for screening for prostate cancer, they are not used to confirm the presence of the cancer (Ellsworth 2019). Other tests are usually carried out to confirm a diagnosis of prostate cancer, usually a magnetic resonance imaging (MRI) scan and trans-rectal ultrasound (TRUS) biopsy (Cancer Council, 2019).

According to Loud and Murphy (2017); the goal of cancer screening and early detection is to treat cancer by detecting it or its precursor lesion at an early phase, prior to the onset of symptoms, when treatment of cancer is most efficient. However in Nigeria setup, majority of the patients usually present to the hospital with the disease in the advanced stage (Ogundele & Ikuerowo, 2015; Ikuerowo et al., 2013).

Despite the fact that prostate cancer Screening is an effective method for the detection of prostate cancer early, previous studied have shown poor practice of the screening process and certain barriers have been linked to this poor practice (Ismail, Zainuddin, Hamedon, Juni, Mohd, & Muhamad, 2018; Loud & Murphy, 2017). One of the major barriers is the lack of awareness of men about the screening method (Loud & Murphy 2017). This study therefore seeks to assess the awareness and practice of prostate cancer screening among middle age men in a rural community in North-Central Nigeria.

Research hypotheses

H_0: There is no significant association between the age of men and their awareness about prostate cancer screening.

H_0: There is no significant association between the age of men and their willingness to practice prostate cancer screening.

Methods and Materials

A community based cross-sectional study was conducted to obtain information from middle age men on the awareness and practice of prostate cancer screening in Edidi community, Kwara State. Edidi is one of the ancient Igbomina communities in today's Isin Local Government Area of Kwara state, Nigeria. It is a Yoruba speaking town situated between Oro and Oke onigbin communities. The people are liberal to both indigenes and non indigenes. The community is greatly dominated by Christians and Muslims. The sample size was 158 which was calculated using Fisher's formula: Sample size (S)= $\frac{(z2)pq}{d2}$ Using test statistic (z) of 1.96 at 95% confidence interval, estimated proportion of an attribute in a population (p) is 0.50, q is 1-p, and the desired level of precision (d)=0.05. Purposive sampling technique was used to select the 158 middle age men who were between 40 and 65 years in the community and were willingness to participate in the study. The response rate was 98.1%. The instrument for data collection was a self-structured questionnaire. The instrument was divided into two sections. Section A contains items for eliciting demographic variables of the respondents such as their age, religion, occupation etc. Section B was designed to elicit information on awareness of prostate cancer screening; while Section C elicited information on practice of prostate cancer screening among respondents. Face and content validity of the instrument was done by experts who are nursing researchers, while the internal consistency of the instrument was measured using Cronbach Alpha, which showed a score of 0.88. This indicates that the questionnaire is reliable. The data collected were collated and analyzed using Statistical Package for Social Sciences (SPSS) version 23 and findings were presented using both descriptive and inferential statistics. Descriptive statistics such as frequencies, percentages and bar chart, to summarize the demographic data and the data generated for the research objectives. Inferential statistics was used to test the hypotheses formulated at 0.05level of significance. Letter of introduction and request for permission was presented to the paramount ruler and chiefs of the community in order to obtain permission to conduct the research in the community after a explaining the purpose of the study. All respondents were duly informed about purpose of the research and the fact that they have a choice to participate or not. Also, they were assured that all information provided by them will be kept confidential and their anonymity were ensured as no name was required on the questionnaires. The collection of data took a period of six weeks considering the appointment

and the schedule of the community members as well as the availability of the respondents at the time of study.

Results

Table 1: Socio- demographic profile of respondents (n=155)

Variable	Response	Frequency	Percentage
Age	35-44	46	29.7
	45-54	47	30.3
	55-65	62	40.0
Religion	Islam	51	32.9
	Christianity	104	67.1
Ethnicity	Yoruba	128	82.6
	Hausa	1	0.7
	Igbo	5	3.2
	Others	21	13.5
Marital status	Single	11	7.1
	Married	136	87.7
	Widower	7	4.5
	Divorced	1	0.7
Occupation	Employed	29	18.7
	Businessman	13	8.4
	Unemployed	10	6.5
	Retiree	2	1.3
	Farmer	83	53.5
	Others	18	11.6
Level of education	No formal education	52	33.5
	Primary	64	41.3
	Secondary	23	14.9
	Diploma	5	3.2
	University	11	7.1

Table 1 shows that majority of the respondents 62 (40%) were between 55-65years, 47 (30.3%) were between 45-54years while 46 (29.7%) were between 35-44years. Most of the respondents 104 (67.1%) practice Christianity while others 51(32.9%) Islam and no respondent practice traditional religion. Majority of the respondents 128 (82.6%) were Yoruba, 21 (13.5%) were of other tribes, 5 (3.2%) were Igbo, while 1 (0.7%) was Hausa. Most of the respondents 136 (87.7%) were married, 11 (7.1%) were single, 7 (4.5%) were widowed and 1 (0.7%) was divorced. Majority of the respondent 83 (53.5%) were farmers, 29 (18.7%) were employed, 18 (11.6%) had other occupations, 13 (8.4%) were businessmen, 10 (6.5%) were unemployed and 2 (1.3%) were retiree. Most of the respondents 64 (41.3%) had primary level of education, 52 (33.5%) had no formal education, 23 (14.9%) had secondary level of education, 11 (7.1%) attended the university and 5 (3.2%) had diploma.

Table 2: Awareness of Prostate Cancer Screening of Respondents (n=155)

Variable	Response	Frequency	Percentage
Have you ever heard of prostate cancer screening	Yes	54	34.8
	No	101	65.2
Do you know about the types of prostate cancer screening	Yes	5	3.2
	No	150	96.8
If yes, what type	Prostate Specific Antigen (PSA) test	2	1.3
	Both	3	1.9
Do you know where the screening tests are done	Yes	12	7.7
	No	143	92.3
At what age should prostate cancer screening test begin	Below 35 years	1	0.6
	35-65years	8	5.2
	Above 65years	3	1.9
	I don't know	143	92.3

Table 2 shows that 101 (65.2%) respondents have never heard of prostate cancer screening while 54 (34.8%) have heard about the screening. Majority of the respondents150 (96.8%) do not know about the types of prostate cancer screening while 5 (3.2%) knew about the types of prostate cancer screening. 3 (1.9%) respondents knew about both prostate specific antigen test (PSA) and digital rectal examination (DRE), 2 (1.3%) knew prostate specific antigen (PSA) test only, while no respondent knows about other types of screening process for prostate cancer. Majority of the respondents 143 (92.3%) do not know where the screening tests are done while 12 (7.7%) knew where the screening tests are done. Majority of the respondents 143 (92.3%) do not know the age prostate cancer screening test begins, 8 (5.2%) said the screening test should begin between age 35-65years, 3 (1.9%) said prostate cancer screening test should begin above 65years of age while 1 (0.6%) respondent said it should begin below 35 years of age.

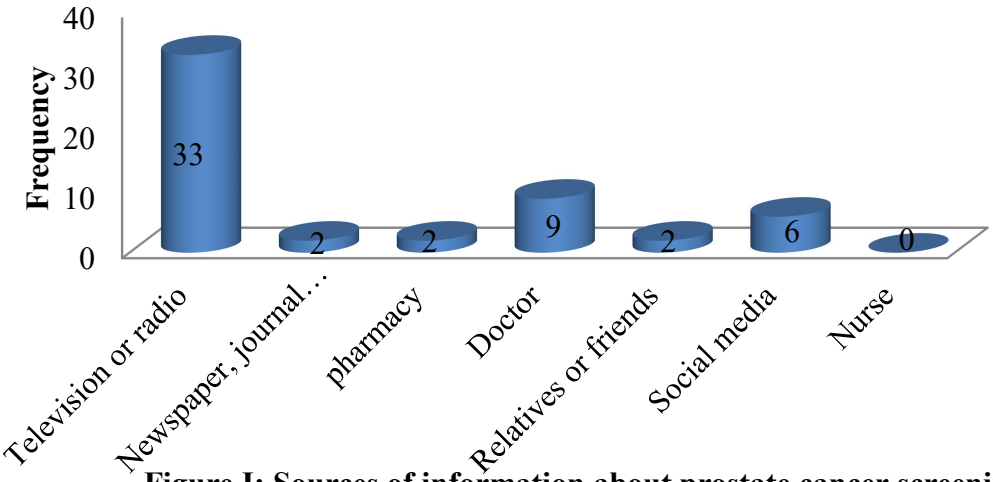


Figure I: Sources of information about prostate cancer screening

Fig 1 shows that 33 (21.3%) respondents heard about the screening from television or radio, 9 (5.8) heard about it from the doctor, 6 (3.9%) heard about it from social media, 2 (1.3%) heard about it from newspaper, journal or magazine, 2 (1.3%) heard about it from pharmacy, 2 (1.3%) heard about it from friends or relatives and no respondent heard about prostate cancer screening from a nurse.

Table 3: Practice of prostate cancer screening among Respondents (n=155)

Variable	Response	Frequency	Percentage
Have you gone for any type of screening for prostate cancer before	No	155	100
	Yes	0	0.0
Why have you not gone for the screening before	I don't need it	24	15.5
	I don't know about it	71	45.8
	The test is unavailable	44	28.4
	I don't have money for screening	13	8.4
	I don't have time	1	0.6
	No reason	2	1.3
1f the test is readily available for free, would you participate?	Yes	58	37.4
	No	97	62.6
will you go for prostate cancer screening If recommended by health professionals	Yes	132	85.2
	No	23	14.8

Table 3 shows that all the respondents have never been screened for prostate cancer at one time or the other before the period of data collection. Majority of the respondents 71 (45.8%) have never perform prostate cancer screening before because they do not know about it, 44 (28.4%)

said the test is unavailable, 24 (15.5%) said they don't need it, 13 (8.4%) said that they don't have money for screening, 2 (1.3%) had no reason for not performing prostate cancer screening before while 1 (0.6%) said he had no time for the screening. Majority of the respondents 97 (62.6%) said that they would not participate in prostate cancer screening if it is available for free while 58 (37.4%) said they will. Majority of the respondents 132 (85.2%) were willing to go for prostate cancer screening if it is recommended by health professionals while 23 (14.8%) were not willing.

Table 4: Statistical illustration of the association between age of respondents and their awareness about prostate cancer screening (n=155)

Variable	**Responses**	**Awareness about prostate cancer screening**			**Chi-Square X^2**	**df**	**P-Value**	**Remark**
		Good	**Poor**	**Total**				
Age	35-44	23	23	46	6.689[a]	2	0.357	Not
	45-54	14	33	47				Significant
	55-65	17	45	62				H_o accepted
	Total	54	101	155				

Table 4 shows that there is no significant association between the age of respondent and their awareness about prostate cancer screening with P-value=0.357> 0.05. Since the P-value is greater than the significance value (0.05), the null hypothesis was therefore accepted.

Table 5: Statistical illustration of the association between age of respondents and their willingness to practice prostate cancer screening (n=155)

Variable	Responses	Willingness to practice prostate cancer screening			**Chi-Square X^2**	df	P-Value	Remark
		Willing	Not willing	Total				
Age	35-44	21	25	46	3.287[a]	2	0.193	Not
	45-54	13	34	47				Significant
	55-65	24	38	62				H_o accepted
	Total	58	97	155				

Table 5 shows that there was no significant association between age of respondents and their willingness to practice prostate cancer screening with P-value=0.193> 0.05. Since the P-value is greater than the significance value (0.05), the null hypothesis was there for accepted.

Discussion of Findings

Results from the study revealed that majority of the respondents were between 55-65years of age with a minimum age of 40 and a maximum age of 62, and a mean age of 50 years. This age range has also been implicated as the risk age of prostate cancer (American Cancer Society, 2016).

The awareness of prostate cancer screening among respondents is poor, as only 34.8% of the respondents are aware of the screening. Similarly, research studies conducted in Osun, Lagos and Rivers State have documented poor awareness of prostate cancer screening among Nigerian men (Enemugwem, Eze, Ejike, Asuquo, & Tobin, 2019; Adebimpe & Fashina, 2018; Ogundele &Ikuerowo, 2015). This is contrary to the findings from two studies conducted in southeastern part of Nigeria and in Uganda where 56.7% and 52.1% of the participants were aware of PCa screening respectively (Nakandi, Kirabo, Semugabo, Kittengo, Kitayimbwa, Kalungi, et al, 2013; Oranusi, et al., 2012). In another study conducted in Italy, a higher percentage (72.7%) of the participants where were aware of PCa screening (Morlando, Pelullo, & Di Giuseppe, 2017).

Despite the fact that health education is one of the essential responsibilities of all health-care professionals especially nurses and doctors; this current study revealed that no respondent heard about prostate cancer screening from a nurse and only 9 (5.8%) heard about it from the doctor, their main source of information about the PCa screening was from television/radio which is a form of mass media. This finding is at variance with the study conducted in Italy by Morlando, Pelullo, & Di Giuseppe, (2017), where more than half (51.1%) of the respondents heard about PCa screening through their physicians. However Similar to the finding of this study, Adebimpe and Fashina (2018) reported mass media as the major source of information about the PCa screening test. Therefore, it is germane that health-care professionals especially nurse and doctors should disseminate health information on PCa screening to increase public awareness especially among population at risk. The study also showed that majority of the respondents are not aware of the types of screening methods available and less than 10% are aware about when and where the screening tests are to be done. This resonates with the findings by Makori (2015), in which low level of awareness were reported among respondents on prostate cancer screening methods and frequency of screening.

The study also revealed poor practice of prostate cancer screening among respondents as none of the respondents have ever undergone prostate cancer screening and the major reason been lack of awareness of the screening. . This is similar to a study conducted in Sokoto by Awosan et al., (2018) where none of the men have ever had prostate cancer screening test done. Other research studies have also documented poor practice of prostate cancer screening test (Enemugwem, et al, 2019; Morlando, Pelullo, & Di Giuseppe, 2017; Oranusia, et.al, 2012)

Less than 40% of the respondents would participate in prostate cancer screening if it is readily available for free, but greater percentage, (> 80%) of the respondents would go for prostate cancer screening if it is recommended by health care professionals. It is indicative that respondents have confidence and trust in their health care providers. Therefore, it is imperative that health care professionals provide adequate information on prostate cancer screening that will increase awareness and promote clients' willingness to participate in prostate cancer screening.

In this study, the major reasons identified by respondents for poor practice of PCa screening were lack of awareness (45.8%), unavailability of the screening tests(28.4%) misconceptions about screening test

24 (15.5%) and cost of screening 13 (8.4%). This is similar to the study done by Loud & Murphy (2017) where low levels of knowledge and awareness, negative attitude towards screening, cost involved in screening, misconceptions about prostate cancer and the embarrassment that comes with being aware of the disease were reported to affect the practice of prostate cancer screening.

Conclusion

This community based cross-sectional study has shown that all the respondents have never gone for PCa screening due to lack of awareness and unavailability of PCa screening test. Poor dissemination of information and health education regarding the screening was observed among health care professional. In addition, majority of the respondents claimed that they would go for prostate cancer screening if it is recommended by health care professionals. The study concluded that respondents demonstrated poor awareness and practice of prostate cancer screening, despite willingness to screen if recommended. Based on these findings, it is therefore recommended that health care providers should organize periodic public enlightenment programmes on Pca Screening, as well as educate and counsel high-risk populations on PCa screening in order for them to make informed choices about their screening which will in turn help in early detection and prompt treatment of the disease. Also, free prostate cancer screening tests should be provided for middle age men to improve the uptake of the screening test. Government should provide affordable and accessible prostate cancer screening test for all men especially middle age men in rural communities. This will help to improve uptake of the screening and curb the burden of prostate cancer in this population.

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