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What is known about Prostate Cancer? Response from Men Aged 50 Years and Above in Lindi Municipal, Tanzania

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Abstract

Background
The incidence of prostate cancer in Tanzania is among the highest recorded in Africa. Prostate cancer is also the most common cancer among men aged 50 years and above in Tanzania. Our study aimed to determine the awareness, knowledge, and attitudes among adult men with age 50 years and above regarding prostate cancer.

Methods
This was a cross-sectional study that included 250 adult men aged 50 years and above in Lindi municipal being purposively selected and we interviewed them by using a structured questionnaire. A stratified random sampling method was used for obtaining our participants. All men who had stayed for not less than one year in Lindi and willing to participate were enrolled in the study. These men were selected at households without screening whether or not they had taken prostate screening test or had been diagnosed with prostate cancer Quantitative data were cleaned and analyzed with SPSS version 20.

Results
Majority, 216(86.7%) of our study participants were aged 50–69 years and most of them, 142(56.8%) had primary education with 93.2% of them being married. Among the study subjects 7.2% had positive family history of cancer and 195(78%) were aware of prostate cancer with source of information being mass media (62.6%). Majority of them, 63.2%, did not know the risk age group. Few, 20.8% of our participants had good knowledge while majority, 95.2% had negative attitude toward prostate cancer. We found a statistically significant association between level of education, family history and level of knowledge regarding prostate cancer with $p < 0.005$.

Conclusion
This study revealed high level of awareness, but poor knowledge regarding prostate cancer and negative attitude toward prostate cancer among men with age ≥50 years in Lindi municipal Tanzania.

Key words*:* Awareness, knowledge, attitude, prostate cancer.

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Introduction

Prostate cancer is the most common type of cancer in men worldwide. Prostate cancer has been a major public health issue worldwide. It is the most commonly diagnosed cancer among men and second leading cause of cancer death in men in general with all men being at risk for prostate cancer. Prostate cancer is very rare in men younger than 40, but chances of having prostate cancer rises rapidly after the age of 50 years. An estimated 0.9 million cases and 0.26 million deaths of prostate cancer occur annually in the world. Prostate cancer is the number one cancer in both incidences and mortality in Africa, constituting 40,000 (13%) of all male cancer incidences and 28,000 (11.3%) of all male cancer-associated mortalities (1-2).

In East Africa, prostate cancer ranks third in both incidence and mortality, and leads to an estimated 9,000 (9% of all male cancers) cases and 7,300 (8.5% of all male cancer) deaths annually. It is important to note that prostate cancer incidences increased by 64.5% between 1990 and 2010 (1-2).

Prostate cancer can be asymptomatic or symptomatic. When asymptomatic at presentation, it is detected most commonly by an elevated serum prostate specific antigen (PSA) and abnormal digital rectal examination (DRE) findings of asymmetric areas of indurations or frank nodules, which are suggestive of prostate cancer. When symptomatic, prostate cancer can cause urinary urgency, nocturia, frequency, and hesitancy. These symptoms are also present in men with benign prostatic hyperplasia (BPH), and are more likely to be caused by BPH than cancer. New onset erectile dysfunction should always raise suspicion for prostate gland pathology since an enlarging gland may encroach upon prostatic tissue in which lies the neurovascular bundle involved in erectile function. Hematuria and hematospermia are uncommon presentations of prostate cancer but their presence in older men should prompt its consideration in the differential diagnosis. A small percentage of men present with symptoms of metastatic disease (bone pain or, rarely, spinal cord compression (3-4).

The specific causes of prostate cancer remain unknown but there are identifiable risk factors. The primary risk factors include ageing and family history, other factors associated with the cancer include hormonal imbalances (androgens), the living and working environment, lifestyle and diet such as animal fat, men's health seeking behavior, sexually transmitted infections and exposure to certain medication (5-6).

Prostate cancer can be prevented by having good awareness, knowledge and positive attitude towards cancer as these facilitate early detection through screening and timely treatment. Studies done among African men show that there is a low awareness and knowledge level on the disease. A study done in Kenya showed that a majority (87.5%) of the patients in Kenya present with advanced disease due to low awareness and a lack of early screening services. Perception on risk of prostate cancer has previously not been examined among Kenyan and even in Tanzanian men (7-8). Our study assessed the

awareness, knowledge, and attitudes toward prostate cancer among men aged 50 years and above in Lindi municipal, Tanzania.

Methods

This was a cross-sectional study looking at levels of awareness, knowledge and attitude toward prostate cancer among men 50 years and above conducted in Lindi, Tanzania. The population of Lindi urban as per the 2012 census (TNBS, 2012) was 78,841(0.0018%) of the total Tanzania population) with men accounting for about 47.6% of the population. A stratified random sampling method was used for obtaining respondents with Lindi municipal being purposively selected as the study area. All men who had stayed for not less than one year in Lindi and willing to participate were enrolled in the study. These men were selected at households without screening whether or not they had taken prostate screening test or had been diagnosed with prostate cancer. Data were collected through questionnaires with structured questions. Analysis of the collected data was done by Statistical Package for the Social Sciences (SPSS) version 20.0.

Ethical considerations

Approval to conduct the study was obtained from the Senate Research and Publications Committee at the Muhimbili University of Heath and Allied Sciences (MUHAS) and permission to conduct the study obtained from Lindi municipal management. Verbal informed consent was obtained before beginning the interview sessions. No identification was used in the tool.

Results

A total of 250 men aged at least 50 years participated in this study, majority were in the age range 50-69(86.7%), the mean age was (60±8.5) years. Most of them had primary education 142(56. 8%). About 7.2% of respondents had positive family history of cancer (refer table 1).

The common risk factors for prostate cancer reported from the respondents in this study were cigarette smoking 57(22.8%), alcohol drinking 40 (16%) and farming with chemical fertilizer, 29(11.6%) (Table 2).

Table 3 below shows that 78% of respondents were aware of prostate cancer and 22% had never heard prostate cancer. Their common source of information was news media whereas radio 62.6% and Television 10.8% of were the leading sources while 7.1% of the total responses indicated the source of awareness as health workers**.**

Table 1. Social demographic characteristics of the study population (N=250)

Social demographic	Status	Number and percentage
Age group	50-69	216(86.7%)
	70-86	32(12.9%)
	90 -100	1(0.4%)
Level of education	No formal education	57(22.8%)
	Primary education	142(56.8%)
	Secondary education	30(12%)
	University/college	21(8.4%)
Marital status	Single	5(2%)
	Married	233(93.2%)
	Separated	8(3.2%)
	Widowed	4(1.6%)
Occupation	House father	10(4%)
	Peasants	159(63.6%)
	Employed	50(20%)
	Un employed	31(12.4%)
Family history of cancer	Yes	18(7.2%)
	No	232(92.8%)

Table 2: Assessment of risk factors for prostate cancer among participants

Risk factors	Yes (%)	No (%)
Farming with chemical fertilizer	29 (11.6%)	221(88.4%)
Chemical related factories	5(2%)	245(98%)
x-ray department	2(1.8%)	248(99.2%)
Mean duration for working places 13.5±8.1		
Risk factors	Yes	No
Alcohol drinking	40 (16%)	210(84%)
Cigarette smoking	57(22.8%)	193(77.2%)

Table 3: Awareness about prostate cancer of participants

Awareness of prostate cancer (N=250)	Yes	No
	195(78%)	55(22 %)
Sources of awareness of prostate cancer (N=194)		
Friend	16 (8.2%)	
Books	17 (8.7%)	
Television	21(10.8%)	
Radio	122(62.6%)	
Health workers	15(7.1%)	
Relative	5(2.1%)	

According to this study only 57(22.8%) knew the symptoms of prostate cancer the remaining 193 (77.2%) respondents did not have knowledge on symptoms. Difficult/frequency urination was the symptom mentioned by majority, 27(47.4%) followed by blood in urine 17(29.8%), as shown in Table 4.

Table 4: Knowledge on symptoms and risk age of prostate cancer

Know the symptoms of prostate cancer (N=250)	Yes	No
	57(22.8%)	193(77.2 %)
Knowledge on symptoms of prostate cancer (N=57)		
Difficult/frequency urination	27(47.4%)	
Blood in urine	17 (29.8%)	
Bone pain	2(3.5%)	
Painful sex	4(7%)	
Loss of sex drive	7(12.3%)	
Infertility	0(0%)	
Know who can get prostate cancer (N=250)	Men below	5(2%)
	Men above 50	87(34.8%)
	I don't know	158 (63.2%)

Majority, 163 (65.2%) knew that prostate cancer is curable, but only 43.6% of them knew that it is curable at early stage and 31(59.6%) of them mentioned surgery as treatment method for prostate cancer, Table 5.

Table 5: Knowledge on Prevention and Treatment Methods of Prostate Cancer

Know prostate cancer is curable	Yes	No
	163(65.2%)	87(34.8%)
Know at what stage is it curable (N=163)		
Early stage	72(43.6%)	
Any time of treatment	8(5.2%)	
Late stage	4(2.4%)	
I don't know	79(48.8%)	
	Yes	No
Know Treatment methods	59(23.6%)	191(76.4%)
Treatment Methods	**Number**	**Percent %**
Radiotherapy	5	8.4%
Surgery	31	59.6%
Radiotherapy and Surgery	4	6.7%
Chemotherapy/drugs	3	5.08%
Surgery, drugs and radiotherapy	16	30.8%

Fifty point seven percent had poor knowledge while 28.5% had intermediate knowledge and only 20.8% had good knowledge regarding prostate cancer, Figure 1.

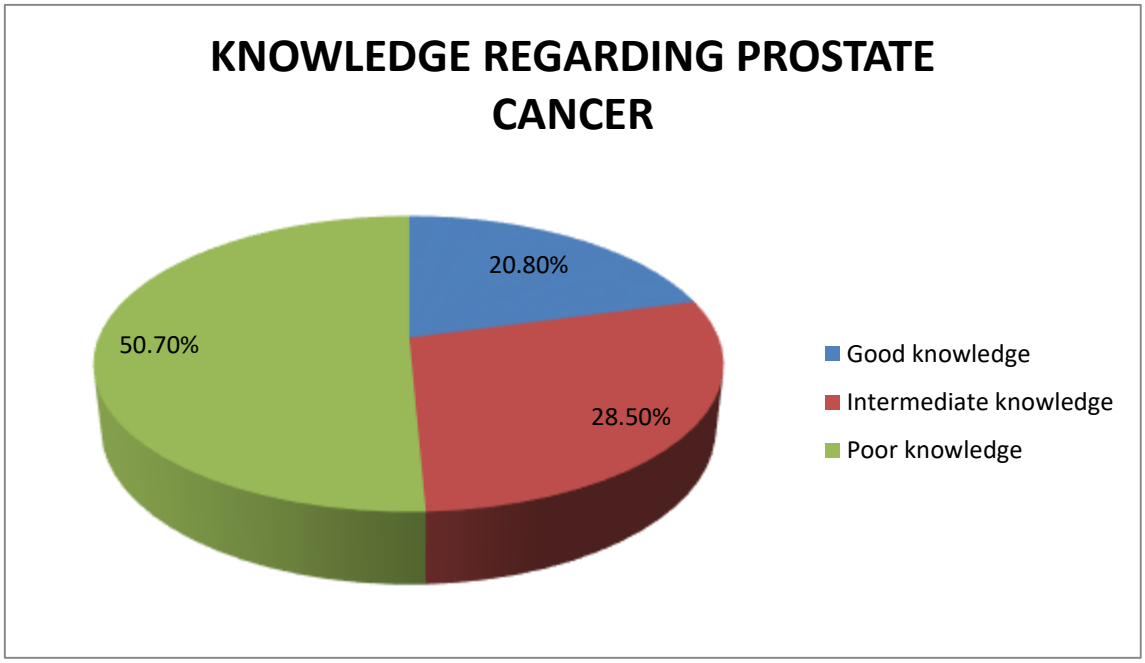

Figure 1: Knowledge regarding prostate cancer

A significant association was found between level of education and level of knowledge regarding exercise ($p<0.05$). Another significant association was found between family history of cancer and level of knowledge regarding prostate cancer since. $p<0.05$.

No significant association was found between level of knowledge regarding prostate cancer and level of attitude toward prostate cancer since ($p=0.388$) Also no significant association was found between family history of cancer and level of attitude toward prostate cancer ($p=0.88$.)

Table 6: Associations between social demographic characteristic and level of knowledge

		Level of knowledge on prostate cancer				P Value
		Good knowledge	Moderate knowledge	Poor knowledge	Total	
Age group	50-69	47 (90.4%)	67(92.9%)	104(81.9%)	216(86.7%)	0.210
	70-89	5(9.6%)	5(7.1%)	22(17.3%)	32(12.9%)	
	90 and above	0(0%)	0(0%)	1(0.8%)	1(0.4%)	
	Total	52(100%)	71(100%)	127(100%)	250(100%)	

Level of education	Never attend school	11(21.2%)	14(19.7%)	32(25.2%)	57(22.5%)	0.00
	primary education	24(46.2%)	30(42.3%)	88(69.3%)	142(56.8%)	
	Secondary education	11(21.2%	13(18.3%)	16(4.7%)	30(12%)	
	University/college	6(11.5%)	14(19.7%)	1(0.8%)	21(8.4%)	
	Total	52(100%)	71(100%)	127(100%)	250(100%)	
Family history of cancer	YES	4(7.7%)	11(15.5%)	3(2.4%)	18(7.2%)	0.003
	NO	48(92.3%)	60(54.5%)	124(97.6%)	232(92.8%)	
	Total	52(100%)	71(100%)	127(100%)	250(100%)	

Table 7: Association between knowledge, family history of cancer and level of attitude

		Level of attitude		Total	P Value
		Positive	Negative		
Level of knowledge on prostate cancer	Good knowledge	4(33.3%)	48(19.5%)	52 (20.5%)	0.388
	Moderate knowledge	4(33.3%)	67(28.3%)	71(28.5%)	
	Poor knowledge	4(33.3%)	123(51.3%)	127(50%)	
	Total	12(100%)	238(100%)	250(100%)	
Family history of cancer	YES	1(8.3%)	17(7.2%)	18(7.2%)	0.88
	NO	11(91.7%)	221(92.8%)	232(92.8%)	
	Total	12(100%)	238(100%)	250(100%)	

Discussion

From this study, awareness of prostate cancer was high, as 78% of participants were aware of prostate cancer. This is higher compared to findings reported in a study that was done among university staff in Nigeria which revealed that 65.6% of participants were aware of prostate cancer. The findings differ from what was reported in Kenya in which 87% of participant were not aware of prostate cancer and another study that was done in an urban population in Nigeria 78.8% were not aware of prostate cancer. The observed differences could be due to studies being from different populations and geographical area (7-8).

This study revealed that 62.6% of respondents received information about prostate cancer from mass media (radio) similar to the findings in Uganda and Canada. However, they are

different from findings from another study in Canada among African American men that reported of health workers especially doctors as another common source of information about prostate cancer (10-11, 16).

The present study found poor knowledge about prostate cancer among 50.7% of participants. This value is higher compared to that reported from a similar study that was conducted among Nigerian men aged 50 years or more which was less than 40%. A study done in Ghana to assess knowledge and attitude toward prostate cancer among 160 male teachers aged 45–60 years in the Sunyani Municipality found 58.8% of participants had good knowledge. The observed difference could be due to differences in population characteristics and geographical locations (8, 14).

Majority of our participants, 63.2% did not know the age group that is commonly affected by prostate cancer. This observation differs from findings reported in Uganda in which majority, 62.6% knew the age group affected by prostate cancer. We found poor knowledge in 76.2% of our participants for the symptoms of prostate, which is similar but higher compared to the study done in Uganda in which 89.7% did not know any symptoms of prostate cancer (12-14).

Our study found level of education and family history of cancer were significantly associated with the level of knowledge on prostate cancer. In a study by Ebuehi et al in Nigeria awareness and knowledge regarding prostate cancer were also found to be positively associated with the level of education. On the contrary in a study done in Uganda there was no significant association between age and level of knowledge of respondents (11, 18). Negative attitude towards prostate cancer was high (95.2%), which was similar to results reported in Uganda. Also another study in Nigeria by Ebuehi et al found 96.5% had negative attitude towards prostate cancer (8, 11, and 18).

Majority (95.0%) of participants agreed that prostate cancer screening is beneficial and 72.1% had positive attitude toward prostate cancer screening although the majority (90%) had never been screened. There was no association between the social demographic, family history of cancer of the participants and attitudes toward undergoing prostate cancer screening (14).

Conclusion

Community awareness regarding prostate cancer is high but knowledge is poor also there is negative attitude toward prostate cancer among men aged 50 years and above in Lindi municipal Tanzania. It is therefore important to provide sufficient information about prostate cancer symptoms, risk, screening and treatment to the general population.

Competing Interests

The authors declare no competing interests.

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Authors' Contributions

SF designed the study, collected data, performed data analysis and wrote the report with a manuscript. OVN participated in the study design and manuscript preparation.

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List of Abbreviations

TNBS Tanzania Bureau of National Statistics
DRE Digital Rectal Examination
PSA Prostate Specific Antigen
BPH Benign Prostatic Hyperplasia
SPSS Statistical Package for Social Scientists
MNH Muhimbili National Hospital

Reference:

1. Bray F, Ferlay J, Soerjomataram I, Siegel RI, Torre LA, Jemal A. **Global cancer statistics 2018: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries.** CA CANCER J CLIN 2018; 68:394–424.
2. Lozano R, Naghavi M, Foreman K, Lim S, Shibuya K, Aboyans, V, Abraham J, Adair T, Aggarwal R, Ahn S.Y, AlMazroa, M.A. **Global and regional mortality from 235 causes of death for 20 age groups in 1990 and 2010: a systematic analysis for the Global Burden of Disease Study 2010**. *The Lancet*, *380*(9859), pp.2095-2128.
3. Weiner, A. B., Patel, S. G., Etzioni, R., & Eggener, S. E. **National trends in the management of low and intermediate risk prostate cancer in the United States**. *The Journal of Urology*, (2015); *193*(1), 95-102.
4. Paulo, M. Y. (2011). ***The study on profile of urological malignancies among patients admitted to urological surgical wards at Muhimbili National Hospital* (Doctoral dissertation, Muhimbili University of Health and Allied Sciences).**
5. Hsing A. W, Chokkalingam A. P. **Prostate cancer epidemiology**. *Front Biosci*, 2006; *11*(5), 1388-413.
6. Kalantzi, O. I., Martin, F. L., Thomas, G. O., Alcock, R. E., Tang, H. R., Drury, S. C,Jones, K. C. **Different levels of polybrominated diphenyl ethers (PBDEs) and chlorinated compounds in breast milk from two UK regions.** *Environmental Health Perspectives 2004*; *112*(10), 1085.
7. Ngugi P. M, Magoha, G. A**. The management of early prostate cancer: a review**. *East African medical journal*, 2007;*84*(9 Suppl), S24-30.
8. Oladimeji, O, Bidemi Y. O, Olufisayo, J. A. Y, Sola, A. O. **Prostate cancer awareness, knowledge, and screening practices among older men in Oyo State, Nigeria**. *International Quarterly of Community Health Education*.2010;*30*(3), 271-286.
9. Forrester-Anderson, I. T. **Prostate cancer screening perceptions, knowledge and behaviors among African American men: focus group findings**. *Journal of health care for the poor and underserved*.2005; *16*(4), 2230.
10. Goel, V, Mercer S. L, Levy I. G, Ashbury F. D, Iverson D. C, Iscoe, N. A. **Prostate cancer screening in the midst of controversy: Canadian men's knowledge, beliefs, utilization and future intentions**. *Can J Public Health*.1997;*88*(5), 327-32.
11. Saleh A. M, Fooladi M. M, Petro-Nustas W, Dweik, G, Abuadas, M. H. **Enhancing knowledge, beliefs, and intention to screen for prostate cancer via different health educational interventions: a literature review.** *Asian Pacific Journal of Cancer Prevention*. 2015;(16), 7011-7023.
12. Nakandi H, Kirabo M, Semugabo C, Kittengo A, Kitayimbwa P, Kalungi S, Maena, J. **Knowledge, attitudes and practices of Ugandan men regarding prostate cancer.** *African Journal of Urology*. 2013;*19*(4), 165-170.
13. Bostick R. M, Sprafka J. M, Virnig B. A, Potter, J. D. **Knowledge, attitudes, and personal practices regarding prevention and early detection of cancer**. *Preventive Medicine*. 1993;*22*(1), 65-85.

14. Steele CB, Miller DS, Maylahn C, Uhler RJ, Baker CT. **Knowledge, attitudes, and practices among older men regarding prostate cancer**. *AmJ Public Health* 2000; 90(10):1595–600.
15. Blocker, D. E., Romocki, L. S., Thomas, K. B., Jones, B. L., Jackson, E. J., Reid, L., & Campbell, M. K. **Knowledge, beliefs and barriers associated with prostate cancer prevention and screening behaviors among African-American men**. *Journal of the National Medical Association*.2006;*98*(8), 1286.
16. Ajape AA, Babata A, Abiola OO. **Knowledge of prostate cancer screening among native African urban population in Nigeria**. *Nigerian Quart J Hosp Med* 2010; 20(2):94–6.
17. Ebuehi, O. M., Ekanem, E. E., & Ebuehi, O. A. T. **Knowledge and practice of emergency contraception among female undergraduates in the University of Lagos, Nigeria**. *East African Medical Journal*. 2006;*83*(3), 90.
18. Oladimeji O, Bidemi Y, Olufisayo JA, Sola A. **Prostate cancer awareness, knowledge and screening practices among older men in Oyo State, Nigeria**. *Int Q Community Health Educ* 2010;30 (3):