

URBAN CONDITIONS AND SCREENING BEHAVIOUR OF PROSTATE CANCER AMONG WORKING-CLASS MEN IN NORTH-WEST AND SOUTH-WEST NIGERIA

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Abstract

Prostate epidemic is currently the most diagnosed disease in men. However, the data require for the treatment and control of morbidities and deaths arising from this disease, including the evaluation of the knowledge and screening behaviour, especially among the working class men, are relatively scarce in Nigeria. This study sought to determine the level of awareness of prostate cancer and screening behavior among working class men (aged ≥ 40 years) in Nigeria using Chikun local government area, Kaduna State as case study. Three main data sources with sub-multiple approaches were adopted: (1) the desk-based research; (2) the online-empirical analysis using International Agency for Research on Cancer (IARC) online global dataset for different countries; and quantitative survey among randomly selected 126 Chikun men. Three level of analyses were adopted, namely univariate, bivariate and multivariate analyses. Only one hypothesis was tested using binary logistic regression. The awareness level regarding the symptoms of prostate cancer is low, and the prevalence rare equals 18% with larger burden among men aged ≥ 50 . The study concludes that there is general lack of knowledge about prostate cancer, and low awareness about available centres for screening. The authors recommend increase in cancer awareness campaign through regular and non-regular education, incentive driven health seeking behaviour and free screening.

Keywords: Urban conditions, Prostate cancer, men health, working men, sexual behaviour, coping strategy, Nigeria

1. INTRODUCTION

Human-wellbeing in the cities is interconnected with the physical environment, social health and it is essentially influenced by the range of underlying drivers of urban conditions (Ompad, Galea, Caiiffa, &

Vlahov, 2007; World Health Organization, Centre for Health Development, 2010). In every society, both gender health is intrinsically interwoven and vital to sustainable development. A man and woman that is sick cannot contribute maximally, if at all, to development. However, where men are persistently playing dominant role, and are by tradition, the breadwinners in the society, whatever affect their health could impair both family and entire societal wellbeing (Amoo, Omideyi, Omideyi, *et al.*, 2017; Amoo, Oni, *et al.*, 2017). Among the health concerns of men is prostate cancer, the most mostly diagnosed disease in men and which, worldwide, occupies foremost position among the killer diseases in men worldwide (Adeloye *et al.*, 2016; Al Olama, Ali, & Schumacher, 2018; Ayoade *et al.*, 2017; Jemal *et al.*, 2007). While its prevalence was previously described as low in Africa (Jemal *et al.*, 2007), emerging evidences are pointing towards increasing scale in Nigeria and sub-Saharan Africa in general, with no clue to its final end currently. Notwithstanding, the data on prostate epidemiology including survivors, knowledge and screening behaviour necessary for the treatment planning and control of prostate cancer are relatively not popular in the literature, especially among urban working-class men that are often the victims in Nigeria. This study examined the level of awareness of prostate cancer and screening behavior among working class men aged ≥ 40 years.

Using a 1980-1996 data, Ogunbiyi and Shittu (1999) indicated that the median age of patients was 67.5 years (actual mean age as 71.4 years) while the prevalence rate was 11% (Ogunbiyi & Shittu, 1999). A recent (2018) study indicated that 34.2% out of 345 prostate biopsies screened were diagnosed with the disease (Nnakenyi, Nnakenyi, Okafor, & Ugwumba, 2018). Hitherto, few other studies have indicated high burden of prostate cancer in Nigeria (Nnakenyi *et al.*, 2018; Odedina *et al.*, 2009; Ogunbiyi & Shittu, 1999). However, government's support centres for data on prostate cancer are not popularly in Nigeria, the access to or availability of support or screening centres are often shrouded with difficulties, which is like a generally pattern of low access to health services in developing countries compared to other setting (Peters *et al.*, 2008). In addition, evidences of regular health seeking behaviour on prostate cancer among the men as well as the level of their knowledge about the symptoms of prostate cancer are not always subject of open discussion in Nigeria (Al-Olama, Ali & Schumacher, 2018; Ayoade, Salami, Adekoya, Tade, Ebili, Olatunji, 2017), especially as it relates to Nigeria (Adeloye, David, Aderemi, Iseolorunkanmi, Oyedokun, Iweala *et al.*, 2016).

While one of the means of curbing the menace of prostate cancer is through the knowledge of the symptoms, screening and treatment, men are often recalcitrant about their health and hardly seek medical attention until almost late (Amoo, Omideyi, *et al.*, 2017b; Amoo, Oni, *et al.*, 2017b). Men's health seeking behaviour could determine their use health services, which could be influenced by cost of services, education, distance to health facilities and of course, cultural beliefs aided by African men masculinity syndrome (**Musoke, Boynton, Butler & Musoke, 2014; Lubega, Musinguzi, Omiel & Tumuhe, 2015**). Health seeking behaviour is also contingent upon their understanding and interpretation of the cause of their sickness (**Lubega, Musinguzi, Omiel & Tumuhe, 2015; Galdas, 2000; Boman, 2010; Awusabo-Asare, 1997**). Where such is lacking, it is doubtful if immediate solution could be expected for such diseases or sicknesses. Galdas (2004) reported that women visited their general practitioners 143 million times in 1990, while the men visited only 67 million times (Galdas, 2004). These statistics shows that women patronises health centre two times that of the men. Notwithstanding, the challenges inherent in men's seeking for help on their health, the specific burden of prostate cancer can be difficult to quantified (Adeloye *et al.*, 2016).

2. METHODS

Three main data sources with sub-multiple approaches were adopted: (1) the desk-based research; (2) the online-empirical analysis using International Agency for Research on Cancer (IARC) online global dataset for different countries; and quantitative structured interview among 126 men were randomly selected from two urban areas randomly picked from North west and South west geo-political zones in Nigeria. A ballot system was adopted in selecting the two major towns from each of the urban cities, where majority of men were working class people. Three level of analyses were adopted, namely univariate, bivariate and multivariate analyses. Only two hypotheses were tested using binary logistic regression.

3. RESULTS

3.1. Socio-economic Profile of Respondents

The socio-demographic profiles are described as analysed using descriptive statistics. Most of the respondents are in their late forties (45-49 years), 42.9% in age bracket 40-44; 48.4% were men and 8.7% were in the age range 50 and above (Table 1). Almost all respondents (94.4%) were educated.

Table 1. Selected sociodemographic characteristics of working class men in Chikun LGA

Selected variables	Frequency	%	Selected variables	Frequency	%
Age group			Working Status		
40-44	54	42.9	Employee	65	51.6
45-49	61	48.4	self-employed	48	38.1
50 & above	11	8.7	Unemployed	13	10.3
Total	126.0	100.0	Total	126.0	100.0
Educational level			Religion affiliation		
No schooling	7	5.6	Christianity	73	57.9
Up to primary	13	10.3	Islam	44	34.9
Up to secondary	48	38.1	Others	9	7.1
Up to tertiary	32	25.4	Total	126.0	100.0
Total	126	100.0			
Marital Status			Tribe		
Single/never married	11	8.7	Hausa	69	54.8
Married/cohabitation	82	65.1	Igbo	37	29.4
Separated/divorced	7	5.6	Yoruba	12	9.5
Total	126	100.0	Others	8	6.3
Number of children			Total	126.0	100.0
1-4 children	54	42.9			
5 & above	46	36.5	Zone of Origin		
Total	126	100.0	North East	12	9.5
Place of Residence			South East	37	29.4
Rural	22	17.5	South West	40	31.7
Urban	78	61.9	South-South	37	29.4
Total	126	100.0	Total	126.0	100.0

Source: Author Field work, 2017

3.2. Profile of men that have experienced or experiencing prostate cancer

The characteristics of men who reported ever had prostate cancer were provided in Table 2. The result shows that the less than half of the men with prostate cancer (44.4%) are aged ≥ 50 . In total, 18 persons from the total respondents were diagnosed with prostate cancer. The total numbers of people without prostate cancer was 82. From this, it shows that majority of the population within age groups have no prostate cancer. Examining the marital status of the respondents, the proportion of married men who had prostate cancer was 83%, separated or divorced (11.1%), single (5.6%) see table 2

Table 2. Men ever diagnosed with prostate cancer and their distribution by age and marital status

Age and marital distribution	Ever diagnosed	Never diagnosed	Total	χ^2	Sig	R
Age group	4 (22.2%)	26 (31.7%)	30 (30%)	0.648	0.723	-0.075
40-44	4 (22.2%)	26 (31.7%)	30 (30%)	0.648	0.723	-0.075
45-49	6 (33.3%)	25 (30.5%)	31 (31%)			
50 and above	8 (44.4%)	31 (37.8%)	39 (39%)			
Total	18 (100%)	82 (100%)	100.00%			
Marital Status						
Single/never married	1 (5.6%)	10 (12.2%)	11 (11.0%)	1.772	0.621	-0.021
Married/cohabitation	15 (83.3%)	67 (81.7%)	82 (82.0%)			
Separated/divorced	2 (11.1%)	4 (4.9%)	6 (6.0%)			
Total	18(100%)	82 (100%)	100.0			

3.3. Level of awareness and symptoms of prostate cancer

The result further indicated more than half of the men interviewed (70.6%) majority of men have heard about prostate cancer and the sources of information varied. Higher proportion of men (33.3%) have heard about prostate cancer from the health practitioners, 35.70% heard through mass media while only 20.6% indicated from relatives as the source of their information. Relatively, one out of every 20 men indicated they know of someone who have experienced or is experiencing prostate cancer but majority (77.0%) indicated otherwise (Table 3).

In terms of the symptoms, no medical examination was conducted, however, the reports in this section were based on self-reported symptoms by the respondents. The result revealed that one out of every five men interviewed exhibited one or more symptoms of prostate cancer. Further information indicated the presence of other diseases among men in the study location. While 4% of the men have experienced or currently experiencing burning or painful urination and painful ejaculation, 11.1% frequently urinate in the night, and 4.6% have experienced erection challenges (Table 3). It was also brought to fore in the analysis, that only 34.1% knows about screening or where to access such facilities. Frequency of urination was also tested. Question raised requested to indicate how often they visit convenience. In this regards, 31.0% almost half of men knows where they can go to access screening facilities. While 31.0% urinate 1-2 times within one hour, 19% urinate more than 2 times within one/two hours (Table 3).

Table 3. Level of awareness and symptoms of prostate cancer

Ever heard about prostate cancer	Number	%	Know someone with prostate	Number	%
Yes	89	70.6	Yes	29	23.0
No	37	29.4	No	97	77.0
Total	126	100.0	Total	126	100.0
Source of information			Know screening		
Mass media	45	35.7	Yes	43	34.1
Health practitioner	42	33.3	No	83	65.9
Relatives/friends	26	20.6	Total	126	100.0
Other sources	13	10.3	Urinate within two hours		
Total	126	100.0	Not at all	63	50.0
Burning/pain during urination			1-2 times	39	31.0
Often	5	4.0	3 and above	24	19.0
not often	24	19.0	Total	126	100.0
not at all	97	77.0	Ever noticed blood in urine		
Total	126	100.0	Often	5	4.0
Difficulty urinating/ stopping it			not often	17	13.5
Often	5	4.0	not at all	104	82.5
not often	23	18.3	Total	126	100.0
not at all	98	77.8	Someone died due to Prostate		
Total	126	100.0	Yes	31	24.6
Frequent urge to urinate at night			No	95	75.4
Often	14	11.1	Total	126	100.0
not often	41	32.5	Painful ejaculation		
not at all	71	56.3	Often	5	4.0
Total	126	100.0	not often	29	23.0
			not at all	92	73.0
Difficulty in getting erection			Total	126	100.0
Often	26	20.6			
not often	21	16.7	Literacy level		
not at all	79	62.7	Literacy level	31	24.6
Total	126	100.0	Illiterates	95	75.4

Source: Authors' framework, 2017

3.4. Logistic regression illustrating the influence of selected socio-demographic factors on experience of prostate cancer

The Logistic regression analysis illustrates the degree of responsiveness of prostate cancer experience to selected demographic profile of men in the study location. The independent variables are age, educational attainment, working status, religion affiliation, usual place of residence, and marital status. Among these variables, all educational categories demonstrated significant relationship with the tendency to have prostate cancer. The result for this indicated that men without formal education are 2.083 times more likely to have prostate cancer compared to men with tertiary education (which is the reference category). The men with primary and secondary education are 0.562 and 0.839 times less likely to be susceptible to prostate cancer compared to men with higher education (Table 4). However, lower age group (40-44 years) is negatively related to the experience of prostate cancer while the preceding higher ages 40-49 is positively associated with having prostate cancer among the men in the study location.

Table 4: Logistic regression analysis illustrating the influence of selected socio-demographic factors on experience of prostate cancer

Selected socio-demographic	B	S.E.	Wald	Sig.	Exp(B)
Age group					
50 & above	RC				
40-44	-.316	.738	.184	.668	0.729
45-49	.269	.643	.175	.067	1.309
Marital Status					
Others	RC				
Never married	-1.690	1.395	1.468	.226	0.184
Married	-.822	.975	.710	.399	0.440
Usual Place of Residence					
Urban					
Rural	-.366	.773	.225	.636	0.693
Religion					
Islam	RC				
Christianity	.484	.576	.705	.401	1.622
Education attainment					
Tertiary education	RC				
No schooling	.734	.702	1.094	.026	2.083
Primary	-.577	.873	.436	.009	0.562
Secondary	-.176	.792	.049	.024	0.839
Working status					
Unemployed/unpaid workers	RC				
Employee	-.463	.810	.327	.567	0.629
Self-employed	-1.527	1.075	2.019	.155	0.217
Constant	-.359	1.314	.075	.785	0.698
Overall Percentage = 82.0%			-2 Log-likelihood (87.312)		
Cox & Snell R Square (0.067)			Nagelkerke R Square (0.110)		

Source: Fieldwork 2018

All the marital status demonstrated negative association with experience of prostate cancer although none of the marital categories is statistically significant. The result of the analysis from the usual place of residence indicated that men who reside in rural areas have negative responsiveness to having prostate cancer. That is, they are 0.693 times less likely to have prostate cancer compared to men in urban areas. Further analysis revealed that all categories of working experience (employed or self-employed) are negatively correlated with the experience of prostate cancer compared to individual men without jobs (Table 4).

4. DISCUSSION

The study used current evidences from the men to assess the prevalence, knowledge, and health seeking behaviour of men towards prostate cancer that is number killer disease among men as distinct from few available studies that used retrospective data or hospital records (Adeloye et al., 2016; Al Olama et al., 2018; Jedy-Agba et al., 2012; Odedina et al., 2009; Ogunbiyi & Shittu, 1999). The triangular approach utilized in combination with simple analytical methods used also enhance the scientific reliability of the results from this study and simplicity for understanding and communication to wider relevant stakeholders.

The prevalence level computed demonstrated an increase in the prevalence rate compared with the 1999 and perhaps pre-2018 findings (Adeloye et al., 2016; Ogunbiyi & Shittu, 1999). Although, the low level of awareness concerning the symptoms as observed in the study could not be worse than the preceding years, but it is a very vital insight that majority of men are relatively oblivious of various important facts about their health. The mean age observed in this study is, though at variance with past studies ((Jedy-Agba et al., 2012; Ogunbiyi & Shittu, 1999), it is an indication that age of susceptibility is declining.

5. CONCLUSION AND RECOMMENDATIONS

The study concludes that the overwhelming awareness about prostate cancer which has not been translated into attendance of the screening could be enhanced if knowledge about the centre is boosted. Improvement in education among the men is also vital as crucial factor for reducing the likelihood of men's susceptibility to

prostate cancer. The authors recommend increase in awareness of the screening centres through health promotion education and information by various health stakeholders; and initiation of strategies that could improve men health seeking behaviour in Nigeria.

REFERENCE LIST

- Adeloye, D., David, R. A., Aderemi, A. V., Iseolorunkanmi, A., Oyedokun, A., Iweala, E. E., ... Ayo, C. K. (2016). An estimate of the incidence of prostate cancer in Africa: a systematic review and meta-analysis. *PloS One*, 11(4), e0153496.
- Al Olama, A., Ali, S., & Schumacher, F. (2018). Prostate cancer meta-analysis of more than 140,000 men identifies 63 novel prostate cancer susceptibility loci.
- Amoo, E. O., Omideyi, A. K., Fadayomi, T. O., Ajayi, M. P., Oni, G. A., & Idowu, A. E. (2017a). Male reproductive health challenges: appraisal of wives coping strategies. *Reproductive Health*, 14(1), 90.
- Amoo, E. O., Omideyi, A. K., Fadayomi, T. O., Ajayi, M. P., Oni, G. A., & Idowu, A. E. (2017b). Male reproductive health challenges: appraisal of wives coping strategies. *Reproductive Health*, 14(1), 90.
- Amoo, E. O., Oni, G. A., Ajayi, M. P., Idowu, A. E., Fadayomi, T. O., & Omideyi, A. K. (2017a). Are Men's Reproductive Health Problems and Sexual Behavior Predictors of Welfare? *American Journal of Men's Health*, 11(3), 487–497.
- Amoo, E. O., Oni, G. A., Ajayi, M. P., Idowu, A. E., Fadayomi, T. O., & Omideyi, A. K. (2017b). Are Men's Reproductive Health Problems and Sexual Behavior Predictors of Welfare? *American Journal of Men's Health*, 11(3), 487–497.
- Ayoade, B., Salami, B., Adekoya, A., Tade, A., Ebili, H., & Olatunji, A. (2017). An audit of Cancer in the Surgical Wards of a tertiary healthcare facility in a resource-limited setting. *Annals of Health Research*, 3(2), 132–139.
- Jedy-Agba, E., Curado, M. P., Ogunbiyi, O., Oga, E., Fabowale, T., Igbinoba, F., ... Koechlin, A. (2012). Cancer incidence in Nigeria: a report from population-based cancer registries. *Cancer Epidemiology*, 36(5), e271–e278.
- Jemal, A., Siegel, R., Ward, E., Murray, T., Xu, J., & Thun, M. J. (2007). Cancer statistics, 2007. *CA: A Cancer Journal for Clinicians*, 57(1), 43–66.
- Nnakenyi, E. F., Nnakenyi, I. D., Okafor, O. C., & Ugwumba, F. O. (2018). Prevalence of high-grade prostatic adenocarcinoma in a black African population.
- Odedina, F. T., Akinremi, T. O., Chinegwundoh, F., Roberts, R., Yu, D., Reams, R. R., ... Kumar, N. (2009). Prostate cancer disparities in Black men of African descent: a comparative literature review of prostate cancer burden among Black men in the United States, Caribbean, United Kingdom, and West Africa (Vol. 4, p. S2). Presented at the Infectious agents and cancer, BioMed Central.
- Ogunbiyi, J. O., & Shittu, O. B. (1999). Increased incidence of prostate cancer in Nigerians. *Journal of the National Medical Association*, 91(3), 159.
- Ompad, D. C., Galea, S., Caiaffa, W. T., & Vlahov, D. (2007). Social determinants of the health of urban populations: methodologic considerations. *Journal of Urban Health*, 84(1), 42–53.
- Peters, D. H., Garg, A., Bloom, G., Walker, D. G., Brieger, W. R., & Rahman, M. H. (2008). Poverty and access to health care in developing countries. *Annals of the New York Academy of Sciences*, 1136(1), 161–171.
- World Health Organization. Centre for Health Development. (2010). *Hidden Cities: unmasking and overcoming health inequities in urban settings*. World Health Organization.