Predictors of Knowledge and Practice of Prostate Cancer Screening among Commercial Motorcyclists in Ilesa Town in Southwestern Nigeria

Wasiu Olalekan Adebimpe, Deborah Fashina
Department of Community Medicine, University of Medical Sciences, Ondo, 1Department of Community Medicine, College of Health Sciences, LAUTECH, Osogbo, Nigeria

Abstract

Background: In Nigeria, prostate cancer is the most commonly diagnosed cancer among men. Nigeria men are ignorant of the risk factors for the disease despite rising prevalence, despite the country’s movement toward a demographically aging population. For a measurable change in behaviors, it is important to assess existing knowledge to inform policy and programmatic decisions. Objective: This study was undertaken to determine the predictors of knowledge and practice of prostate cancer screening among commercial motorcyclists in Ilesa town of Nigeria. Materials and Methods: A descriptive cross-sectional study was carried out among 400 eligible commercial motorcycle riders selected using the multistage sampling method. Research instrument used were semi-structured pretested interviewer-administered questionnaire. Data were analyzed using the SPSS software version 17.0. Results: Mean age of respondents was 39.5 ± 2.4 years. Fifty-seven percent and 27.6% were aware of prostate cancer and prostate cancer screening, respectively, with the mass media being the source of information. Fifty-seven percent had poor mean knowledge while 63.0% had good mean attitude toward prostate cancer screening. Although only 3% have gone for prostate cancer screening before, about 95% were willing to go for prostate cancer screening test. Age, marital status, and education status were all significantly associated with good knowledge and practice of prostate cancer screening (P < 0.05). Predictors of good knowledge and practice of prostate cancer screening were being educated, age <45 years, being married and being in polygamous setting. Conclusion: Moderate awareness and knowledge, good attitude, and poor practice of prostate cancer screening were found among studied respondents. This calls for stakeholders in cancer care to create more awareness, organize sensitization programs, and implement community-based programs that would increase access to screening for prostate cancer.

Keywords: Ilesha town, knowledge, attitude, and practice, Okada riders, prostate cancer, screening

INTRODUCTION

Cancer of the prostate is gaining ground nowadays regarding awareness creation and adoption of healthier attitude to its detection. It is now the second most common cause of cancer death in men worldwide, and the number one mortality associated cancer among Nigerian men. It is also the most commonly diagnosed cancer among Nigerian men regarding mortality and morbidity.

Most published data on prostate cancer were pockets of hospital based findings documenting periodic prevalence figure such as a prevalence rate of 182.5 per 100,000 male admissions in the hospital, and 1046 per 100,000 men of age 40 years and above, the exact burden of the disease may not be known.

Cancer of the prostate is amenable to screening, and this may reduce mortality from the disease almost by half. Factors associated with poor screening practices include ignorance of the disease, inadequate diagnostic facilities even in urban areas and poverty, all leading to late presentations in the clinics.

In addition to the fact that most commercial motorcyclists are men, a study by Hoffman, who discovered excessive and extremely low-frequency electromagnetic field radiation...
penetrating up from the motorcycle seat. Since the prostate is the closest gland to the motorcycle seat, the electromagnetic energy may penetrate the rider’s groin and torso. With prolonged exposures, such radiation could disrupt biological function, including those of immune system. In addition, the suppression of the production of the natural “anti-cancer” hormone “melatonin,” can stimulate progressive growth of existing cancer cells,

sample size estimation

The sample size was calculated using Fischer’s formula- 

\[ n = \frac{Z^2(PQ)}{d^2} \]

and using a P figure of 0.5. The calculated sample size of 384.2 was rounded up to four hundred 400 to account for attrition.

Materials and Methods

Study area

Ilesa, which is the study area has a human population of about 250,000, going by a projection of the 2006 national population census. The topography of Ilesha like in many other southwestern states makes the use of motorbikes inevitable in penetrating hard to reach areas and other areas where cars or buses could not penetrate. There is a tertiary, a secondary and numerous Primary Health Care and private health facilities within the town where one can access prostate cancer screening.

Study design

This was a community-based descriptive cross-sectional study.

Study population

The target population were registered commercial motorcyclists who were mostly adult males aged between 18 and 60 years.

Sample size estimation

The sample size was calculated using Fischer’s formula- 

\[ n = \frac{Z^2(PQ)}{d^2} \]

and using a P figure of 0.5. The calculated sample size of 384.2 was rounded up to four hundred 400 to account for attrition.

Sampling technique

A multistage sampling method was adopted in sample selection. Stratified random sampling technique was adopted in Stage 1 of the sampling methodology. Commercial motorcycle riders popularly called “Okada” riders in Ilesa belong to three associations namely, Amalgamated Commercial Motorcycle Riders Association of Nigeria (ACOMORAN, with 2500 members), Motorcycle Transport Union of Nigeria (MTUN, with 1850 members) and EXPRESS (with 2000 members). Two of the three strata based on the existing three stratifications were selected, and these include ACOMORAN and EXPRESS. Questionnaires were proportionally allocated to them based on the number of membership of their association.

ACOMORAN – 2500 × 400/6350 = 223
EXPRESS – 2000 × 400/6350 = 177

Each union has 4 routes, and 2 routes were selected at random employing simple balloting in stage 2. Questionnaires were equally allocated to routes. Each route has their own independent meeting day. A sampling frame or list of names of all members was made through their respective association.

A systematic sampling method of one in three names on the list was drawn on their monthly meeting day and period, and this was employed in sample selection in stage 3. Selected respondents who were not around at the meeting were followed to their house addresses provided.

Research instrument

Used in this study was semi-structured pretested interviewer-administered questionnaires, administered by six-trained research assistants who could speak the local language. A back-translated Yoruba version of the questionnaire was also made available to data collectors for use when situation arises. The questionnaire was divided into five sections. Section A contained items that provided information on biodata of respondents, section B contained questions that explored the knowledge of respondents on prostate cancer screening, Section C addressed the attitude of respondents toward prostate cancer screening, Section D assessed the practice of prostate cancer screening of respondents while Section E explored the readiness of respondents on the uptake of prostate cancer screening.

Data management and analysis

All items in the questionnaire were pre-coded for ease of analysis. After data cleaning and validation through double entry and looking for outlier values, statistical analysis for the study was done using The Statistical Package for Social Sciences (SPSS) software version 17.0 (SPSS Inc, Chicago, IL, USA). The analysis was done at three levels: Simple descriptive statistics or univariate analysis was done to give the general socio-demographic characteristics and socioeconomic status of the Okada riders. The analysis provided the frequency and percentages of respondents and their basic features. The 13 questions related to knowledge was scored accordingly with Score 1 given to right knowledge (or correct answer) for those with “Yes” response and Score 0 given to wrong knowledge (or incorrect answer) for those with “No” response. Total score on knowledge was computed and mean score determined. Respondents with scores equal to and above the mean were classified as having adequate knowledge while those below the mean score were classified as having inadequate knowledge. Similar scoring was carried out for the 13 attitude questions. The Chi-squared test and binary logistic regression was also done to demonstrate an association between major outcome variables and other sociodemographic variables of interest.

Ethical consideration

Written informed consent was obtained from every respondents.
The Ethical Committee of LAUTECH teaching hospital Osogbo gave the approval for the overall conduct of this research.

**RESULTS**

The mean age of respondents was 39.5 ± 2.4 years, with age group of 35–44 years having the highest (50.5%) proportion. About 173 (43.3%) had completed secondary education, 283 (70.8%) were married while 262 (65.5%) of them were in monogamous setting [Table 1]. Figure 1 shows a bar chart on the awareness of prostate and prostate cancer screening. About 57% were aware of prostate cancer while 43% were not. Likewise, 27.6% were aware of prostate cancer screening while 72.4% were not. Figure 2 showed mean knowledge, attitude, and practice scores of prostate cancer screening among respondents. About 43% had good knowledge score, 63.0% had good attitude score, 13.0% had good practice or screening score while 95% were willing to go for prostate cancer screening at the next available opportunity. About 47.9% of the respondents said that fear of the unknown is responsible for their nonutilization of prostate screening, 47.6% of them said its due to lack of money, 33% said it is due to their ignorance, while 29% said it was due to a fear of the procedure, 4% of them said they have personal reasons that have prevented them from accessing prostate cancer screening.

Table 2 shows that no statistically significant association was found between knowledge, practice of prostate cancer screening and education status, age, marital status, and types of marriage ($P > 0.05$). On binary logistic regression for knowledge, respondents with formal education were 2.7 times more likely to have good knowledge of prostate cancer screening compared to those with no formal education, though this observation was found not to be statistically significant (odds ratio [OR] 2.69, 95% confidence interval [CI] 0.662–1.098, $P = 0.094$). Respondents with age 45 years and above were 1.5 times less likely to have good knowledge of prostate cancer screening compared to those with age <45 years, though this observation was found not to be statistically significant (OR 0.78, 95% CI 0.4759–1.2973, $P = 0.174$). Respondents who were ever married were 1.7 times more likely to have good knowledge of prostate cancer screening compared to those who were single, and this observation was found to be statistically significant (OR 1.71, 95% CI 1.0517–2.8004, $P = 0.017$). Respondents in polygamous marriage settings were about 5.6 times more likely to have good knowledge of prostate cancer screening compared to those in monogamous setting, and this observation was also found to be statistically significant (OR 5.65, 95% CI 3.0293–10.5479, $P = 0.001$). Thus, predictors of good knowledge of prostate cancer screening were being educated, age < 45 years, being married and being in a polygamous setting.

![Figure 1: Awareness of prostate cancer and prostate cancer screening](image)

![Figure 2: Knowledge, attitude, and practice scores of prostate cancer screening](image)
For practice of prostate cancer screening, respondents with formal education were 1.8 times more likely to have good practice of prostate cancer screening compared to those with no formal education, though this observation was found to be statistically significant (OR 1.88, 95% CI 2.0040–5.9130, \( P = 0.014 \)). Respondents with age 45 years and above were 0.9 times less likely (meaning no difference) to have good practice of prostate cancer screening compared to those with age <45 years, though this observation was found not to be statistically significant (OR 0.09, 95% CI 0.0255–0.3637, \( P = 0.001 \)). Respondents who were ever married were 1.6 times more likely to have good practice of prostate cancer screening compared to those who were single, and this observation was found not to be statistically significant (OR 0.09, 95% CI 0.1328–2.8651, \( P = 0.290 \)). Respondents in polygamous marriage settings were about 1.2 times more likely to have good practice of prostate cancer screening compared to those in monogamous setting, and this observation was also found to be statistically significant (OR 1.21, 95% CI 0.0745–0.8522, \( P = 0.011 \)). Thus, predictors of good practice of prostate cancer screening were being educated, being married and being in a polygamous setting.

**Discussion**

In our study, only a little above half have heard about prostate cancer and less than one-third have heard about prostate cancer screening while the remaining have not heard about it. This supports similar studies conducted by other studies within and outside Nigeria,\(^1,^2,^1^2\) that reported good awareness about prostate cancer among over half of respondents. Similar but much lower awareness figures were reported in another study\(^1^3\) that reported about one-tenth awareness about prostate cancer screening. Poor awareness was also reported in some other studies.\(^3,^1^4\) Good awareness is a pointer to a respondent looking for more information on the subject matter including the availability of screening practices, venues as well as preventive measures. In addition, poor awareness was said to be responsible for reasons why the majority of men usually present in the hospital with the disease at the advanced stage.\(^5\) The same poor awareness and knowledge of prostate cancer screening among our respondents could support a report that the higher morbidity and mortality in Nigerian men also due to its being diagnosed at a much older age than men in developed countries.\(^1^6\)
The most common source of information on prostate cancer in this study was the mass media, this supports a similar Ugandan study\textsuperscript{(17)} in which the most common source of information was also the mass media. This may not be unconnected with the easy and unhindered access and availability of the internet to citizens of most countries, most especially the young economically productive age group. Being aware is a known indicator of one seeking for more detailed information and a move toward having positive attitude and good practice. Hence, the fairly high awareness and moderate knowledge score of prostate cancer and screening is still a good indicator of progress toward prevention and control of prostate cancer. In this study, about two-thirds of our respondents had a favorable attitude to prostate cancer screening. In a comparative study, a fair attitude toward prostate cancer screening was reported.\textsuperscript{(15)} However, a Brazilian study reported that respondents have poor attitude toward the prostate cancer screening.\textsuperscript{(18)} A fairly higher attitude to prostate cancer screening among our respondents could be due to the rising involvement of NGOs creating awareness on cancers Generally in Nigeria. It may also not be unconnected with the high knowledge score among respondents and variability in the age group of respondent’s selected for the two comparing studies.

Only few (less than one-fifth) of our respondents have been screened for prostate cancer. This is lower when compared to another study in which almost one-quarter reported that they have been screened: \textsuperscript{(19)} The poor screening practice in our study is not a good indicator for prostate cancer control because screening would provide access to early management of potential cancer cases. However, the poor practice may not be unconnected with generally poor availability of prostate screening equipments and facilities in most of our health institutions. In facilities where they are available, they are either too costly or they are being provided in response to a special mass screening or sensitization programs usually organized by NGOs. However, majority of the respondents in our study said they were ready to go for the prostate cancer screening if it’s free, this is corroborated by a study in South Africa,\textsuperscript{(20)} whereby little less than two-thirds of the respondents showed an intention to do the screening—which is good for eventual action taking and cancer control. In this study, older age and higher education level were predictors of awareness, knowledge, and attitude. This supports several other studies within and outside Nigeria.\textsuperscript{(13,17,21,22)} Older men probably would have experienced more urinary symptoms and also exaggerated fear of impotence most especially after prostatectomy, those who are highly educated would have been so enlightened on cancer of the prostate which could be an indicator of utilization of hospital services related to prostate cancer care. It is, therefore, important that sustained awareness creation and sensitization seminars be organized, most especially for men’s group. Authors hereby concluded that moderate awareness and knowledge, good attitude, and poor practice of prostate cancer screening were found among studied respondents. This calls for stakeholders in cancer care to create more awareness, organize sensitization programs, and implement community-based programs that would increase access to screening for prostate cancer.

**Conclusion**

Moderate awareness and knowledge, good attitude, and poor practice of prostate cancer screening was found among studied respondents. The major predictors of education level and older age found in this study calls for stakeholders in cancer care to create more awareness, organize sensitization programs and implement community-based programs that would increase access to screening for prostate cancer, most especially the older population in the community many of which, are also commercial motorcyclist.

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**Conflicts of interest**

There are no conflicts of interest.

**References**

Adebimpe and Fashina: Prostate cancer screening among commercial motorcyclists in Ilesa, Nigeria