# ASSESSMENT OF LEVEL OF AWARENESS AND KNOWLEDGE ABOUT PROSTATE CANCER AMONG MEN IN SELECTED LOCAL GOVERNMENT AREAS OF ANAMBRA STATE, NIGERIA

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## ABSTRACT

Prostate cancer remains one of the leading causes of cancer-related morbidity and mortality among men worldwide, with increasing prevalence in Nigeria. This study examined level of awareness and knowledge about prostate cancer among men in selected local government areas of Anambra state, Nigeria. One research question and one hypothesis were used in assessing such awareness and knowledge of men towards prostate cancer. The research design employed was cross-sectional survey. The target population for the study was adult males aged 18 years and above from whom a sample size of 1110 respondents was drawn through a combination of multistage and simple random sampling techniques. However, six interviewees and all participants in the three sessions of focus group discussions (FGD) conducted during the study were purposively selected. Instruments used for data collection were questionnaire, in-depth interview (IDI) guide and focus group discussion (FGD) guide. Quantitative data were processed using Statistical Package for Social Sciences (SPSS), Version 27, and analyzed with the aid of descriptive statistics such as frequency distribution tables, simple percentages, mean, median, as well as pie and bar charts. Qualitative data were first transcribed and thereafter analyzed using manual content analyses techniques; while relevant quotes were extracted and used to support or contrast findings arising from quantitative data. The study hypothesis was tested using chi-square ($x^2$) inferential statistics. The study found that low awareness and limited knowledge of risk factors, fueled by sociocultural factors impede on attitudes, awareness, knowledge and perception of men towards prostate cancer. The result also revealed that there is very little public health education and awareness programmes on prostate cancer in the study area, hence most men exhibit poor response dispositions to the disease. These response patterns such as denial and delayed screening gave rise to negative consequences including late diagnosis, reduced participation in screening programmes, and missed opportunities for timely intervention against prostate cancer. It was recommended that screening and awareness programmes should be scaled up, prioritizing older men, rural populations and low-income men. Also, more public health education campaigns and engagement of both traditional and religious leaders should be undertaken to sensitize men on prostate cancer screening and treatment. Furthermore, multilevel actions and integrated approach whereby prostate cancer control is brought into primary healthcare services should be encouraged.

**Keywords:** Assessment, knowledge, awareness, men, prostate cancer, Anambra state

## INTRODUCTION

Prostate cancer is a significant public health issue worldwide. The key concern of its control is on how to achieve early detection, adequate and appropriate management so as to improve survival rate. In Sub-Saharan Africa, the disease is often diagnosed at advanced stages due to lack of awareness and late presentation. Regarding Africa's most populous country, Ogunbiyi *et al.* (2000) reports that Nigeria faces significant public health challenges, particularly in rural areas where access to healthcare and educational resources is limited.

Nigeria lacks a thorough cancer data base with the result that information on prostate cancer incidence is often based on individual reports (Mohammed *et al.*, 2008). Meanwhile, with Nigeria's growing population and increasing life expectancy, she witnesses rise in non-communicable diseases, including prostate cancer. Despite the rising prevalence of prostate cancer among men in Nigeria, there is still limited understanding and inadequate responses towards disease, which continues to exacerbate the burden on individuals, families, and the healthcare system.

In Anambra State, prostate cancer is one of the most commonly diagnosed cancers among men, yet many men remain unaware of the disease's risk factors, symptoms, and the importance of early detection. The level of awareness and knowledge about prostate cancer among men in Anambra State is generally low. In a study conducted by Iremeka *et al.* (2017) in Anambra state, he found that only 25% of the respondents were aware of prostate cancer, and of those, only a small fraction had ever been screened for the disease.

This lack of knowledge is particularly worrisome given the fact that when prostate cancer is detected early, the victim has a high survival rate. However, cultural beliefs, low levels of education, and limited access to health information contribute to poor health-seeking behaviours and delayed diagnosis (Okoye *et al.*, 2019; Nwagbara *et al.*, 2020).

Moreover, according to Oranusi *et al.* (2012), majority of healthcare infrastructure in Anambra State are insufficiently equipped to manage the growing number of prostate cancer cases. Health services in the state are often under-resourced, with inadequate facilities for screening, diagnosis, and treatment of prostate cancer. This situation is further compounded by the socio-economic challenges faced by men, which hinder their ability to access and pay for healthcare services (Oranusi *et al.*, 2012).

Also, there seems to be very limited awareness campaigns and community-based initiatives aimed at educating men about prostate cancer in order to improve their attitudes, knowledge and perceptions, and to encourage early screening. This gap in public health efforts is evident in the high rate of late-stage presentation among patients, which significantly reduces the chances of successful treatment outcomes (Eze *et al.*, 2017). Furthermore, there are very limited recent studies that focused specifically on the subject of attitudes, awareness, knowledge and responses of men in Anambra state towards prostate cancer.

Given the above challenges and research gaps, there is a critical need for a comprehensive study to unravel the issues. This study therefore assessed the extent, situation or level of awareness and knowledge of men in selected local government areas of Anambra state about prostate cancer.

## RESEARCH QUESTION

From the statement of the problem, the understated sole research question becomes apparent: How informed and knowledgeable are men in Anambra State about prostate cancer?

## RESEARCH HYPOTHESIS

The hypothesis stated below has been generated to serve as the study guide: 'Younger men are more likely to be well informed and knowledgeable about prostate cancer than their elderly counterparts in Anambra State, Nigeria'.

## REVIEW OF RELEVANT LITERATURE

### Theoretical Review: Level of Knowledge and Awareness of Prostate Cancer among Men

Prostate cancer is a significant public health concern globally and particularly in Sub-Saharan Africa where awareness and medical responses are often limited due to various sociocultural and economic factors. Awareness and knowledge about prostate cancer are crucial for early detection and effective management. However, studies have shown that there is a significant gap in knowledge about prostate cancer symptoms, risk factors, and screening methods among men worldwide.

According to Ojewola *et al.* (2017), awareness of prostate cancer among men in Nigeria remains low; this contributes to late presentation and poor prognosis of the disease. Hall *et al.* (2015) in their study in the United States found that many men are not adequately informed about prostate cancer screening guidelines as well as the benefits and risks associated with screening. Similarly, a study conducted by Murtola *et al.* (2016) in Europe highlighted issues

of low levels of awareness and knowledge about prostate cancer among men, which can negatively impact on their decision-making regarding screening and treatment options.

In Nigeria, the level of knowledge and awareness of prostate cancer among men has been the subject of multiple studies. However, research findings consistently show that a significant proportion of men in Nigeria have limited knowledge about the disease, its symptoms, and risk factors. For instance, according to Oluwole *et al.* (2021), knowledge of prostate cancer among men in Nigeria is generally inadequate, which negatively affects screening uptake and early detection efforts. On their part, Onyeodi *et al.* (2022), reported that 24.8% of their study participants had no knowledge of risk factors for prostate cancer. Also, men in Nigeria, particularly in the southeastern regions often present late to hospitals, resulting in advanced stages of the disease and poorer prognoses (Mohammed *et al.*, 2017). This pattern of late presentation is primarily attributed to low levels of awareness, lack of access to health information, and cultural factors that hinder positive health-seeking behaviors. However, Oladimeji *et al.* (2010) identified sources of awareness of prostate cancer among men in Nigeria to include friends, relatives, the mass media, and workplace and health workers.

This lack of awareness leads to delayed health-seeking behavior. A study by Nyblade *et al.* (2021) demonstrated that men often mistake early prostate cancer symptoms for benign conditions like urinary tract infections, contributing to late-stage diagnosis and worse outcomes. Interestingly, Smith *et al.* (1997) pointed out that physicians contribute toward the level of patients' knowledge about prostate cancer. This is sequel to their observation that a greater number of participants in their study never had the privilege to discuss or be informed of anything related to prostate cancer and screening tests with their physicians.

This low level of awareness is worrisome as early detection is crucial for effective treatment. The level of knowledge and awareness of prostate cancer among men remains low, contributing to late diagnosis and poor health outcomes.

**Empirical Review: Level of Knowledge and Awareness of Prostate Cancer among Men**

A study on 'Men's Knowledge and Beliefs about Prostate Cancer: Education, Race, and Screening Status' were conducted by Winterich *et al.* (2009). In the study, in-depth interviews were conducted with 65 African-American and white men with diverse educational backgrounds, aged 40–64. It found that education, not race or screening status, was associated with knowledge about the prostate gland, prostate cancer symptoms and screening tests, and

fear of prostate cancer. The exception was knowledge about the Prostate Specific Antigen (PSA) blood test which was associated with education and screening status. Education, not race, is associated with prostate cancer and screening knowledge. The study concluded that interventions should focus on all men with low education to correct their misinformation about prostate cancer and to engage them in shared decision making about screening.

Gebru *et al.* (2023) conducted a study titled 'Awareness of prostate cancer and its associated factors among male patients attending care in the Urology Unit at TikurAnbessa Specialized Hospital, Addis Ababa, Ethiopia'. It adopted a cross-sectional study. A sample size of 241 male patients at TikurAnbessa Specialized Hospital from February to April 2021 participated in the study. The findings of this study indicate that male patients have a relatively low level of awareness of prostate cancer risk factors, symptoms, and screening and prevention options. The study recommended that there should be more public awareness initiatives to educate men in Ethiopia on the risk factors, symptoms, screening and prevention of prostate cancer.

## THEORETICAL FRAMEWORK

Health Belief Model and Social Learning Theory complement each other as theoretical frameworks for this study. The adoption of the two theories is to take full advantage of their strengths and applicability in explaining the subject of prostate cancer among men in Anambra state. At the same time, combining the two theories as theoretical framework bridges their individual weaknesses, if one only is adopted. Health belief model and social learning theory are suitable as theoretical thrust of this study because prevailing beliefs and socialization or learning from others play key roles in shaping attitudes, knowledge, perceptions and responses of men in Anambra state towards prostate cancer.

## MATERIALS AND METHODS

The study was conducted in Anambra state, located in the southeastern part of Nigeria. The state has 21 local government areas, 330 wards and 178 communities (ASMCET, 2024). The research design employed was cross-sectional survey. The target population for the study was adult males aged 18 years and above from whom a sample size of 1110 respondents was drawn through a combination of multistage and simple random sampling techniques. However, six interviewees and participants in the three sessions of focus group discussions (FGD) conducted in the course of the study were purposively selected. Instruments used for data collection were questionnaire, in-depth interview (IDI) guide and focus group discussion (FGD) guide.

Quantitative data were processed using Statistical Package for Social Sciences (SPSS), Version 27, and analyzed with the aid of descriptive statistics such as frequency distribution tables, simple percentages, mean, median, as well as pie and bar charts. Qualitative data were first transcribed and thereafter analyzed using manual content analyses techniques; while relevant quotes were extracted and used to support or contrast findings arising from quantitative data. The study hypotheses were tested using chi-square ($x^2$) inferential statistics.

## FINDINGS/RESULTS

### Research question: How informed and knowledgeable are men in Anambra State about prostate cancer?

Responses obtained from the questionnaire items 8 - 25 were used to answer this research question. The aim was to determine the extent to which respondents possess accurate knowledge of prostate cancer risk factors, symptoms, screening procedures, and treatment options. The findings are presented in the composite table below.

**Table 1:** *Distribution of responses on awareness and knowledge of prostate cancer*

| Item | No | Yes | Not Sure |
|---|---|---|---|
| Medical research has shown that men aged 50 years and above have a higher risk of developing prostate cancer. Do you know about this information? | 363 (30.6%) | 333 (27.9%) | 392 (33.2%) |
| Do you know that having a father or brother with prostate cancer increases a man's risk? | 371 (31.3%) | 362 (30.5%) | 355 (29.9%) |
| Have you heard that high-fat diets and lack of exercise can increase the risk of prostate cancer? | 344 (28.9%) | 377 (31.9%) | 367 (31.0%) |
| Research has shown that smoking and heavy drinking can contribute to prostate cancer. Is this something you've heard or know about? | 347 (29.2%) | 378 (32.0%) | 363 (30.6%) |
| Do you know that difficulty in passing urine can be an early warning sign of prostate problems? | 365 (30.8%) | 336 (28.2%) | 387 (32.8%) |
| Some people mention that blood in urine or semen may indicate prostate cancer. Is this something you've come across before? | 369 (31.1%) | 362 (30.5%) | 357 (30.1%) |
| Frequent urination, especially at night, is often linked to prostate issues. Have you heard about this? | 378 (32.0%) | 371 (31.3%) | 339 (28.5%) |
| Pain in the lower back, waist, or hips is also sometimes mentioned as a symptom. Is this information familiar to you? | 351 (29.5%) | 366 (30.9%) | 371 (31.3%) |
| Have you ever heard that prostate cancer can be detected early through screening tests? | 371 (31.3%) | 370 (31.2%) | 347 (29.2%) |
| Are you aware that a blood test known as PSA can help detect prostate cancer? | 344 (28.9%) | 381 (32.2%) | 363 (30.6%) |
| Do you know about Digital Rectal Examination (DRE) as a screening method for prostate cancer? | 358 (30.2%) | 369 (31.1%) | 361 (30.4%) |
| According to health experts, men aged 50 years and above should go for regular prostate checks. Is this something you're aware of? | 336 (28.2%) | 369 (31.1%) | 383 (32.4%) |
| Do you know that early detection through screening can make treatment more successful? | 377 (31.9%) | 367 (31.0%) | 344 (28.9%) |
| Are you aware that prostate cancer can be treated successfully if detected early? | 380 (32.1%) | 336 (28.2%) | 372 (31.4%) |
| Have you heard that surgery, radiotherapy, and medication are treatment options for prostate cancer? | 334 (28.0%) | 367 (31.0%) | 387 (32.8%) |
| Can men live normal and healthy lives after successful prostate cancer treatment? | 359 (30.3%) | 353 (29.7%) | 376 (31.8%) |
| Have you heard that relying only on herbal or spiritual treatment may delay recovery from prostate cancer? | 354 (29.8%) | 342 (28.7%) | 392 (33.2%) |
| Are you aware that reporting early to a qualified medical doctor greatly improves treatment outcomes? | 365 (30.8%) | 341 (28.6%) | 382 (32.3%) |

**Source: Field Survey, 2025.**

The analysis of men's awareness and knowledge of prostate cancer reveals a generally low level of understanding across multiple dimensions, including risk factors, symptoms, screening, and treatment. Responses indicate that less than one-third of participants possess accurate knowledge on most items, while a substantial proportion remain uncertain. When asked whether they were aware that older age increases the likelihood of prostate cancer, only 27.9% of respondents answered correctly, whereas approximately one-third either denied the association (30.6%) or reported being unsure (33.2%). A similar pattern was observed regarding hereditary risk, with 30.5% acknowledging that having a father or brother with prostate cancer increases susceptibility, compared to 31.3% who believed it does not, and 29.9% who were unsure. Awareness of lifestyle-related risk factors such as high-fat diets, lack of exercise, smoking, and heavy drinking showed slightly better, but still limited knowledge levels, with correct responses ranging from 31% to 32%, yet uncertainty remained high at 30% to 31%.

The qualitative findings reinforce these results, providing context for why knowledge remains low. Many men demonstrated confusion regarding hereditary, age-related, and lifestyle risks. For example, regarding hereditary risk**,** a participant stated:

> I thought prostate cancer only happens to older men in my family. I didn't know that having a father or brother with the disease increases my own risk. It is always good to hear from the right source of information… Most men often hear and believe stories from neighbors or friends, not from doctors. (IDI, P2, Aged 62, Prostate Cancer Patient/Trader)

On the question of age-related risk**,** another participant noted:

> I always assumed prostate cancer only affects very old men. Nobody explained that men who are not too old could also be affected…, so most men believe it's not something to worry about until you are very old. (FGD Session 1, AWKP3, Aged 58, Trader)

Regarding lifestyle-related risks**,** an interviewee had this to say:

> I didn't know that smoking, alcohol, or eating fatty foods could increase the risk of such disease, until I got affected. During the screening and treatment process, the doctor advised me to completely quit any smoking habit. (IDI, P5, Aged 50, Prostate Cancer Patient/Transporter)

Similar opinion was shared by another participant in one of the FGD sessions. According to him,

> People in my village always say that prostate cancer is due to age and heredity, but they don't always mention issues of diet or exercise. In this community, there is little health education, so most men are left uncertain about lifestyle risks.(FGD Session 1, AWKP5, Aged 55, Farmer)

These findings collectively suggest that limited formal health communication and reliance on informal sources contribute to low awareness of prostate cancer risk factors among men.

Knowledge of prostate cancer signs and symptoms followed a similarly modest pattern. Questions regarding early warning signs such as difficulty in passing urine, blood in urine or semen, frequent urination at night, and lower back or hip pain revealed that only about 28% to 31% of men recognized these symptoms. Nearly equal proportions were unsure, with "Not sure" responses consistently hovering around 30% to 33%. These findings suggest that many men may be unable to recognize potential warning signs of prostate cancer, which can contribute to delayed care-seeking and missed opportunities for early diagnosis.

Qualitative narratives illuminate why men often fail to recognize early symptoms. Many men interpreted early warning signs as normal aging or minor discomforts, delaying care-seeking.

For nocturia/frequent urination, one participant explained:

> I thought waking up many times at night to urinate was just old age catching up with me. I never imagined it could be a serious illness. I ignored it for months until severe back pain forced me to seek medical care.(IDI, P2, Aged 62, Prostate Cancer Patient/Trader).

Regarding difficulty passing urine, another participant noted:

> I had difficulty passing urine for months but didn't think it was serious. Only when the pain became unbearable and I developed blood in my urine did I go to the hospital.(FGD Session 1, AWKP4, Aged 56, Trader)

Participants also highlighted lower back or hip pain as an unrecognized symptom:

> Sometimes I experience pain in my lower back and hips, but I never thought it could be prostate cancer. Most men ignore it and continue using herbal remedies until it becomes unbearable.(IDI, P5, Aged 50, Prostate Cancer Patient/Transporter)

Concerning blood in urine or semen, a health practitioner explained succinctly: "Even small signs, like blood in urine, are ignored. Men here usually wait weeks or months, thinking it is normal aging, and only seek help when it's severe." (IDI, P1, Aged 48, Community Health Officer). This statement reflects a pattern of symptom normalization and delayed health-seeking behaviour, where early warning signs are misattributed to ageing. Such delays contribute to late presentation and poorer prostate cancer outcomes, underscoring the need for targeted male-focused health education to promote early detection and timely care.

Finally, regarding general symptom recognition**,** a participant stated:

> I knew nothing about the warning signs. We assume these are old age problems, so men avoid the clinic until symptoms become severe. It's frustrating because by the time help

> is sought, the disease may have progressed.(FGD session 1, AWK P2, Aged 57, Retired Civil Servant).

Together, these insights illustrate that low recognition of early symptoms contributes to delay in care-seeking**,** corroborating the quantitative findings.

Awareness of screening procedures, including prostate cancer's detectability through early testing, PSA blood tests, and Digital Rectal Examination (DRE), was also limited. Approximately 31% of respondents had heard that prostate cancer can be identified early through screening. Awareness of the PSA test was similarly modest, with 32.2% answering affirmatively, while 30.6% remained uncertain. Familiarity with DRE was only slightly better, with 31.1% responding "Yes," yet more than 30% were unsure. In addition, only about one-third of the respondents knew that men aged 50 years and above should engage in routine prostate checks. These findings collectively highlight gaps in knowledge about essential screening methods, which are critical for early detection and improved prognosis.

Qualitative findings align with these results, highlighting both low knowledge and socio-cultural barriers that hinder screening uptake.

Regarding PSA testing**,** one participant expressed surprise about the concept:

> Honestly, this is my first time hearing about PSA tests. I never knew men could be checked early for prostate cancer unless something was already seriously wrong. I always thought you only find out once symptoms are unbearable or pain develops. (FGD Session 2, EKP1, Aged 58, a Cleric)

Another participant however, expressed the view that he had heard about it, but lacked the knowledge about what it stands for or its functions with regards to prostate cancer screening. Accordingly to him:

> I heard about PSA tests through my wider readings, as well as through radio health sensitization programme. However, I am not certain what it involves, because, I have not actually opted for such screening. So I cannot tell you for certain that I am fully aware about its processes; but I have heard about it. (IDI, P3, Aged 55, Civil Servant)

This response highlights partial awareness without actionable understanding, perhaps due to the fairly exposed nature of the participant, where access to information through media and personal reading exists but is not accompanied by clear, practical guidance. This disconnect suggests that information exposure alone is insufficient to drive screening behaviour, underscoring the need for more targeted health communication that translates awareness into informed and timely uptake of PSA testing.

In terms of DRE awareness, another participant stated:

> I never heard about DRE or routine checks. Even if hospitals recommend them, many men avoid them because of embarrassment and fear, so they only go when symptoms are severe. (IDI, P4, Aged 50, Prostate Cancer Patient/Business Owner)

Participants also emphasized general screening challenges:

> Honestly, I don't know any tests. I thought you only find out about prostate cancer when it starts to hurt. Nobody in my family ever talked about screening, and it feels like a private issue that men don't discuss openly. (FGD session 3, ONP3, Aged 55, Security Officer)

> Screening is rarely done in our communities. People only go to the hospital when pain is severe, so awareness is low and many men miss the chance for early diagnosis.(FGD session 2, EKP3, Aged 60, Retired Soldier)

> Most men are afraid of medical procedures and think tests like PSA are unnecessary until symptoms are severe. They also worry about stigma if seen undergoing a test, reducing screening uptake.(IDI, P1, Aged 48, Community Health Officer)

These qualitative insights highlight that cultural norms, fear, and limited communication exacerbate low screening awareness, supporting the quantitative findings.

Knowledge about prostate cancer treatment and management was similarly inadequate. Only 28.2% of men knew that the disease can be successfully treated if detected early, while nearly one-third were unsure. Awareness of the main treatment options, such as surgery, radiotherapy, and medication, fell at 31%, and more than 32% reported uncertainty. Misconceptions surrounding treatment were also evident. For example, while health experts warn against relying solely on herbal or spiritual remedies due to the risk of delayed recovery, only 28.7% of respondents recognized this, whereas 33.2% were unsure. Moreover, just 29.7% understood that men can live normal, healthy lives after successful prostate cancer treatment, reflecting considerable gaps in knowledge that may negatively influence treatment decisions and attitudes toward care-seeking. Even knowledge of the benefits of early reporting to a qualified medical doctor was limited, as only 28.6% of respondents were aware that early medical consultation improves treatment outcomes.

Qualitative data reveal misconceptions, cultural beliefs, and delayed care-seeking**,** further explaining these low levels of awareness.

Regarding herbal/spiritual remedies**,** one participant stated:

> I spent six months using herbal mixtures and visiting traditional healers because I didn't trust hospitals. Only when the pain became unbearable did I finally go to a doctor. Before then, I really thought herbal remedies could cure me.(IDI, P4, Aged 50, Prostate Cancer Patient/Business Owner)

On embarrassment and delayed care-seeking, another participant noted:

> Men here avoid talking about anything involving their private parts. It's embarrassing, so most wait until the pain is unbearable before seeking help. Even among friends,

> nobody shares symptoms, making it hard to know when to see a doctor.(FGD session 1, AWKP6, Aged 59, Driver)

Regarding awareness of medical treatment options**,** one participant commented:

> I didn't know surgery or radiotherapy could cure prostate cancer. I thought herbal remedies were safest, and most men I know believe the same. Until someone explained medical options, I thought there was no hope with hospitals.(FGD Session 2, EKP1, Aged 58, a Cleric)

On fear and cultural beliefs influencing treatment, another participant reported:

> Even when men know treatment exists, fear of hospitals and cultural beliefs prevent early help-seeking. Many rely on traditional practices for months, worsening their condition and reducing successful treatment chances.(FGD Session 3, ONP6, Aged 62, Village Health Worker)

Regarding benefits of early reporting, a participant noted:

> "Most men don't understand that early reporting to a doctor improves outcomes. Many wait until emergencies, making treatment more complicated and stressful. Communities need education to change these dangerous delays. (IDI, P6, Aged 53, Nurse)

Together, these findings illustrate that low knowledge and misconceptions regarding treatment can adversely affect care-seeking behavior, reinforcing the survey results.

Overall, the qualitative data enrich the quantitative patterns, showing that low awareness and knowledge arise from a combination of poor health communication, socio-cultural stigma, misconceptions, and practical barriers such as access and affordability. The convergence of both data sources reinforces the conclusion that men's awareness and knowledge of prostate cancer remain inadequate, highlighting the urgent need for targeted interventions to improve early detection and care-seeking behaviour.

## TEST OF STUDY HYPOTHESIS

**Hypothesis:** Younger men are more likely to be well informed and knowledgeable about prostate cancer than their elderly counterparts in Anambra State, Nigeria.

In order to test this hypothesis, the raw survey data were first transformed. Awareness and knowledge of prostate cancer was measured using four domains: awareness and knowledge of risk factors, signs and symptoms, screening and detection, and treatment and management. Each domain was originally measured using multiple response options (i.e., Yes, No, and Not Sure), which was then recoded into dichotomous variables, where "Yes" (correct knowledge) was coded as 1 and "No/Not sure" (lack of knowledge) was coded as 0.

Age variable was equally recoded into two groups to facilitate comparison: younger men and older men. Cross-tabulations were then generated between age group and each knowledge

domain. The chi-square test of independence was employed to examine whether statistically significant differences existed in the distribution of knowledge across the two age categories for each domain

Table 2: *Chi-square analysis of differences in prostate cancer knowledge domains across age groups in Anambra State, Nigeria*

| | Lack of Knowledge | Knowledgeable | Total | χ2 | Df | Sig. |
|---|---|---|---|---|---|---|
| **Knowledge of risk factors** | | | | | | |
| **Younger Men** | **248 (22.8%)** | **160 (14.7%)** | **408 (37.5%)** | | | |
| **Older Men** | **402 (36.9%)** | **278 (25.6%)** | **680 (62.5%)** | **.295** | **1** | **.587** |
| **Total** | **650 (59.7%)** | **438 (40.3%)** | **1088 (100.0%)** | | | |
| **Knowledge of signs and symptoms** | | | | | | |
| **Younger Men** | **230 (21.1%)** | **178 (16.4%)** | **408 (37.5%)** | | | |
| **Older Men** | **433 (39.8%)** | **247 (22.7%)** | **680 (62.5%)** | **5.715** | **1** | **.017** |
| **Total** | **663 (60.9%)** | **425 (39.1%)** | **1088 (100.0%)** | | | |
| **Knowledge about screening and Detection** | | | | | | |
| **Younger Men** | **172 (15.8%)** | **236 (21.7%)** | **408 (37.5%)** | | | |
| **Older Men** | **312 (28.7%)** | **368 (33.8%)** | **680 (62.5%)** | **1.433** | **1** | **.231** |
| **Total** | **484 (44.5%)** | **604 (55.5%)** | **1088 (100.0%)** | | | |
| **Knowledge about treatment and management** | | | | | | |
| **Younger Men** | **184 (16.9%)** | **224 (20.6%)** | **408 (37.5%)** | | | |
| **Older Men** | **330 (30.3%)** | **350 (32.2%)** | **680 (62.5%)** | **1.205** | **1** | **.272** |
| **Total** | **514 (47.2%)** | **574 (52.8%)** | **1088 (100.0%)** | | | |

The results of the chi-square analyses revealed that there was no statistically significant difference between younger and older men in their knowledge of prostate cancer risk factors ($\chi^2 = 0.295$, $p = 0.587$), screening and detection ($\chi^2 = 1.433$, $p = 0.231$), or treatment and management ($\chi^2 = 1.205$, $p = 0.272$). These findings suggest that knowledge levels in these domains were broadly similar across the two age groups.

However, a statistically significant difference was observed in knowledge of the signs and symptoms of prostate cancer ($\chi^2 = 5.715$, $p = 0.017$). Examination of the distribution indicated that older men were more knowledgeable than younger men in this domain. This result runs contrary to the stated hypothesis, which anticipated higher knowledge levels among younger men.

Overall, the findings indicate that age differences in prostate cancer knowledge were largely minimal, with the exception of knowledge related to signs and symptoms, where older men demonstrated greater awareness. Thus, the hypothesis that younger men are more likely to be knowledgeable about prostate cancer is only partially supported and largely rejected.

## DISCUSSION OF FINDINGS

### Level of Awareness and Knowledge of Prostate Cancer among Men in Anambra State

The findings of this study indicate that the level of awareness and knowledge of prostate cancer among men in Anambra State is uneven and characterized by considerable uncertainty across key domains, including risk factors, symptoms, screening procedures, and treatment options. While some respondents demonstrated partial awareness, such as recognizing urinary difficulties or frequent urination as possible warning signs, a substantial proportion either expressed incorrect knowledge or reported being unsure. This pattern suggests that awareness is largely fragmented rather than comprehensive.

This finding is consistent with previous studies findings, particularly Iremeka *et al.* (2017) and Eze *et al.* (2017), which reported low levels of prostate cancer awareness and poor screening uptake in Anambra State. Iremeka*et al.* (2017), for instance, found that although some respondents had heard of prostate cancer, only a small fraction possessed detailed knowledge or had ever undergone screening. The present study reinforces this evidence by demonstrating that awareness remains shallow and insufficient to support informed decision-making.

However, a critical counter-interpretation must be considered. Some studies reviewed in Chapter Two suggest that awareness levels are gradually improving due to increased media exposure and public health messaging, particularly in urban settings (Eze *et al.*, 2017). From this perspective, the fragmented awareness observed in the present study may not necessarily reflect stagnation but rather a transitional stage in awareness diffusion, where men possess surface-level information but have not yet internalized it sufficiently to influence behaviour. This raises the possibility that the issue is not absolute lack of awareness but the quality, depth, and framing of information dissemination.

The findings further suggest that men's engagement with prostate cancer information is largely reactive rather than preventive. This interpretation aligns with previous research evidence reviewed showing high rates of late-stage presentation and delayed diagnosis (Eze *et al.*, 2017; Oranusi *et al.*, 2012). Nevertheless, an alternative explanation is that reactive engagement may be shaped less by ignorance and more by structural barriers such as cost, limited access to screening facilities, and competing livelihood priorities, which were also highlighted in the reviewed literature. Within the study's theoretical framework, this suggests that knowledge alone is insufficient to trigger preventive action in the absence of enabling structural conditions.

## SUMMARY OF FINDINGS

This study assessed the level of awareness and knowledge of men, and their implications for prostate cancer control in Anambra State, Nigeria, using cross sectional survey design. Quantitative data were generated from 1,088 valid copies of questionnaire, complemented by in-depth interviews and focus group discussions; implying a mixed-methods approach for optimum results.

The findings indicate that awareness of prostate cancer among men in Anambra State exists but is fragmented and insufficiently internalised. While some respondents demonstrated surface-level awareness, particularly regarding common symptoms such as urinary difficulties, knowledge of risk factors, screening procedures, and treatment options remained limited. Awareness was largely reactive, with many men engaging with prostate cancer information only after the onset of symptoms rather than as preventive health behaviour.

The study further found that knowledge and awareness are shaped by a combination of socio-cultural, informational, and structural factors. Educational attainment, exposure to media messages, and interaction with health professionals influenced awareness levels. However, deeply entrenched socio-cultural beliefs, masculinity norms, fear or stigma and misinformation significantly constrained men's willingness to engage openly with prostate cancer issues. Qualitative evidence revealed that concerns about shame, loss of social respect, and perceived threats to masculinity discouraged discussion and early health-seeking behaviour.

## CONCLUSION

Based on the empirical evidence generated by this study, it is concluded that prostate cancer awareness and knowledge, in their current form, is insufficient to produce meaningful behavioural change.

This study demonstrates that men's responses to prostate cancer are not solely determined by individual knowledge or attitudes but are embedded within broader socio-demographic inequalities, cultural constructions of masculinity, and institutional limitations in healthcare delivery. While awareness initiatives have succeeded in normalising the discourse on prostate cancer to some extent, they have failed to adequately confront fear, stigma, cost barriers, and access constraints that shape men's health-seeking behaviour.

Importantly, the findings challenge the implicit assumption in public health interventions that increased awareness will naturally lead to increased utilization of screening services. Instead, this study establishes that awareness without access, affordability, and institutional capacity reproduces existing inequalities and limits the effectiveness of prostate cancer control efforts.

The study therefore concludes that sustainable improvement in prostate cancer outcomes in Anambra State requires an integrated public health strategy that simultaneously addresses knowledge deficits, socio-cultural barriers, and systemic weaknesses in healthcare provision. Without such an approach, gains made through awareness campaigns alone are unlikely to translate into measurable reductions in late diagnosis and mortality.

**RECOMMENDATIONS**

Based on the findings and conclusion reached in this study, the following are recommended and aligned with the research question addressed in this study.

1. Given the finding that prostate cancer awareness is largely superficial, it is recommended that public health education initiatives be reoriented toward comprehensive and practical knowledge dissemination. Health promotion programmes should emphasize detailed information on risk factors, early symptoms, screening procedures, and treatment options, using culturally appropriate messages and local languages to enhance comprehension among men with lower educational attainment.
2. In response to the observed socio-demographic disparities in knowledge, targeted and equity-focused interventions are recommended. Screening and awareness programmes should prioritize older men, rural populations, and men of lower socio-economic status. Subsidized or free screening services should be institutionalised to reduce financial barriers and narrow socio-economic gaps in access.
3. Community-based counseling, peer-led education, and engagement with respected male figures should be utilized to address fear, stigma, and harmful norms surrounding masculinity and illness. Healthcare workers should also receive training to deliver confidential, respectful, and male-friendly services.

4. To enhance access and awareness spread, prostate cancer screening and related services should be integrated into primary healthcare services. Mobile screening units should be deployed to underserved areas, and referral systems strengthened to ensure continuity of care from screening to diagnosis and treatment.
5. Well coordinated, multi-sectoral approach involving health authorities, community leaders, religious institutions, and the media is essential in order to deepen awareness, knowledge and positive responses towards prostate cancer. Routine monitoring and evaluation mechanisms should be established to assess the effectiveness of interventions over time.

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