FACTORS INFLUENCING KNOWLEDGE AND AWARENESS OF PROSTATE CANCER AMONG MEN IN SELECTED LOCAL GOVERNMENT AREAS OF ANAMBRA STATE, NIGERIA

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ABSTRACT
Prostate cancer is one of the most prevalent malignancies affecting men worldwide, with increasing prevalence in Nigeria. This study examined factors influencing awareness and knowledge of men towards prostate cancer in Anambra state, Nigeria. One research question and one hypothesis were used in assessing such factors implicated in 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 interviews (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. The study found that men in Anambra state had low awareness and limited knowledge of risk factors and other issues related to prostate cancer. Sociocultural factors were found to influence or 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: attitude, awareness, knowledge, prostate cancer, prostate screening test, sociocultural factors

INTRODUCTION

Prostate cancer is a significant public health concern globally, particularly among men aged 50 years and above. It is the most commonly diagnosed cancer in men and the second leading cause of cancer-related deaths globally (Global Cancer Observatory, 2021). Mayo Clinic (2024) described prostate cancer as the uncontrolled growth of cells in the prostate, a small walnut- shaped gland, below the bladder in the male reproductive system that produces seminal fluid that nourishes and transports sperm. It is cancer that occurs in the prostate.

Pernar *et al.* (2021) asserts that the real cause of prostate cancer is elusive, and noted that ageing, family history and race are considered non-modifiable risk factors. However, Rawla (2019) notes that physical inactivity; smoking, alcohol consumption and being overweight are controllable risk factors. On their part, Ariom *et al.* (2023) observed that symptoms of prostate cancer varies from person to person, and some of them include difficulty to start urinating, weak urine flow or interrupted flow, urination on a regular basis, especially at night, and difficulty in completely emptying the bladder during urination. There may also be painful urination or a burning sensation, erectile dysfunction, painful ejaculation, weight loss, blood in urine, urine dribbling, lower extremity swelling, among others (Ariom *et al.*, 2023).

In terms of prevalence, according to Sung et al (2021), prostate cancer is the third most common diagnosed malignancy in 2020 with 1,414,259 cases worldwide. Global Cancer Statistics (2020) estimated that the disease in 2020 alone caused 375,304 deaths among men of all ages worldwide. However, World Health Organization (WHO, 2021) reported the actual number of deaths recorded worldwide in 2020, due to prostate cancer should be about 375,000 deaths. This death toll is higher than approximately 360,000 deaths associated with prostate cancer that was recorded in 2018 (Bray *et al.*, 2018). More worrisome is fact that as Ugochukwu et al (2019) stated, the global burden of prostate cancer is expected to rise to 1.7 million new cases and 499,000 new deaths by year 2030.

Regarding the distribution of prostate cancer, World Cancer Research Fund (2022) notes that the disease incidence varies widely across different regions of the world, with the highest rates observed in North America, Australia, and Northern and Western Europe; and the lowest in Asia and sub-Saharan Africa. These variations are largely attributed to differences in screening practices, lifestyle factors, and genetic predispositions.

Ferlay *et al.*, (2018) contended that Nigeria, despite her lack of thorough cancer data base and dependence on self-reports, has prostate cancer ranked as the leading cancer among men, with increasing morbidity and mortality rates both in urban and rural areas. According to Global Cancer Observatory (GCO 2022), Nigeria recorded 18,019 new cases and 11,443 deaths from prostate cancer in 2022, indicating high incidence of about 30 prostate cancer cases per 100,000 men in Nigeria (GCO 2022). According to Akinremi (2011), the incidence and mortality rates of prostate cancer are increasing due to a combination of factors including late diagnosis, lack of awareness, and limited access to healthcare services, especially in Sub-Saharan African nations like Nigeria.

Furthermore, awareness, perceptions and knowledge about prostate cancer are crucial issues for its early detection, applicable response from men, access to services, and effective management. Unfortunately, studies like Murtola *et al.* (2016) have shown that there is significant gap in knowledge among men worldwide, about symptoms of prostate cancer, risk factors, available screening and treatment services. For instance, Murtola *et al.* (2016) highlighted how low levels of awareness and knowledge about prostate cancer among men,

negatively impacted on their decision-making regarding screening and treatment options in Europe and elsewhere. Alu *et al.*, (2018) similarly held that poor perceptions and low knowledge about prostate cancer and the availability of alternative therapies are the reasons for late presentation. They also argued that low levels of education and old age were directly related to poor knowledge about the disease.

On their part, Nwobi and Osuagwu (2018) contended that perceived cost of treatment, fear of diagnosis, cultural beliefs, and stigma associated with cancer, and lack of access to healthcare services are major barriers that contribute to late presentation and poor outcomes when care is sought. These situations are even compounded by misconceptions, among men diagnosed with prostate cancer, about the etiology of the disease. Three most common misconceptions include the assumption that it is linked to a history of sexually transmitted diseases, multiple sexual partners and excessive sexual activities.

Anambra State, located in the South-Eastern region of Nigeria, may not be exempted from above challenges faced in the broader Nigerian context regarding prostate cancer. Despite the high prevalence of the disease, there seems to be substantial attitudinal issues, gap in awareness and knowledge about the disease, particularly in both rural and urban areas. This research examines attitudes, knowledge and perceptions of men in Anambra State towards prostate cancer, and the responses (such as screening dispositions and treatment preferences) they adopt toward the disease, as well as the implications of their response options for prostate cancer control agenda. These subjects have not been addressed in previous prostate cancer related research undertaken by other scholars, especially in the context of Anambra state, hence the quest of the present study to fill the gap.

RESEARCH QUESTION

From the statement of the problem, the research question hereby becomes apparent: 'What are the major factors that influence knowledge and awareness of prostate cancer among men in Anambra State?'

RESEARCH HYPOTHESIS

The hypothesis stated herein has been generated to serve as the study guide: 'Men with higher educational attainment are more likely to agree that personal factors (such as age, personal interest in health information, past health experiences, and perceived risk) influence their awareness and knowledge of prostate cancer, compared to those with lower educational attainment in Anambra State'.

REVIEW OF RELEVANT LITERATURE

Factors that Influence Knowledge and Awareness towards Prostate Cancer among Men

Prostate cancer is one of the most prevalent malignancies affecting men worldwide. Despite advancements in detection and treatment, disparities in awareness, screening behaviors, and health outcomes persist, largely driven by socio-demographic and sociocultural factors (American Cancer Society, 2016; Gift *et al.*, 2020). These factors (which are principally socio-demographic and sociocultural in character) significantly influence knowledge, attitudes, and responses to prostate cancer. They shape individuals' perceptions of the disease, influence health-seeking behaviors, and affect responses to treatment and prognosis.

Understanding how socio-demographic and sociocultural determinants affect knowledge and responses towards prostate cancer is critical for developing targeted interventions, especially for high-risk populations. Specifically, such factors include age, level of education, income

status, cultural belief systems, and community influences among others. They play key roles in shaping individuals' awareness and disposition of health-seeking behaviors.

Age is one of the factors that can influence knowledge and responses to prostate cancer among men. Gift *et al.* (2020) clarified that prostate cancer screening should start from 40 years of age and above. According to them, prostate cancer risk grows with age. Indeed, older men are more prone to get prostate cancer than younger men (under 40), who have a lower risk of being diagnosed with the disease.
The risk of prostate cancer rises rapidly after age 50, and according to analytic studies, about 6 in 10 cases of prostate cancer are found in men older than 65 who have lower overall survival. As a result, it is highly recommended to encourage older men (over 60) to get prostate-specific antigen (PSA) test screening frequently (Vickers *et al.*, 2010; Jayadevappa *et al.*, 2011).
According to American Cancer Society (2016), about 1 in 8 men will be diagnosed with prostate cancer during their lifetime. But each man's risk of prostate cancer can vary, based on his age, race etc. For example, prostate cancer is more likely to develop in older men. About 6 in 10 prostate cancers are diagnosed in men who are 65 or older, and it is rare in men under 40. The average age of men when they are first diagnosed is about 67.

Education is another factor that influences knowledge and responses toward prostate cancer among men. Studies like Patel *et al.* (2010) found that men with higher levels of education tend to be more informed about prostate cancer symptoms, risks, and the importance of screening. This may be linked to greater access to health information and higher health literacy.
Men with higher levels of education tend to have greater awareness of prostate cancer. This includes knowledge about the risks, symptoms, screening methods, and treatment options. Educated men are more likely to seek information through health-related websites, journals, or other credible sources, which may influence their decision-making process regarding early detection and treatment.
Education can shape men's attitudes toward prostate cancer screening. Those with lower educational levels might harbor fears or misconceptions about cancer diagnosis and treatment, leading to reluctance in undergoing screenings. Conversely, those with higher education often view screening as a necessary step toward maintaining health.

Income and Access to Healthcare: Economic disparities significantly impact access to healthcare services, including prostate cancer screening and treatment. Lower-income individuals often face barriers such as the cost of screening, lack of health insurance, and limited access to healthcare facilities, which affect their knowledge and response to the disease (Penson *et al.*, 2010). Geographic location further compounds these disparities, with rural populations often having less access to health education and screening services.
According to Rebbeck *et al.* (2013), men with higher levels of education and income tend to have better knowledge of prostate cancer, including risk factors, symptoms, and the importance of screening. Studies have consistently demonstrated that men with higher educational attainment and income are more likely to have greater knowledge of prostate cancer and engage in early screening practices.

Cultural Beliefs and Stigma: In many cultures, discussions surrounding prostate cancer and other reproductive health issues are often taboo. Apart from cultural belief that prostate cancer is an inevitable consequence of aging well documented across several cultural climes, there is also cultural stigma that can lead to delays in seeking medical advice or refusing screening due to fear of diagnosis or concerns about masculinity (Breen *et al.*, 2011). Specifically, in African American and Hispanic communities, where prostate cancer incidence and mortality rates are

higher, cultural beliefs about cancer being a death sentence may discourage proactive health behaviors (Maliski *et al.*, 2010).

Health Beliefs and Perceptions of Risk: Cultural health beliefs often shape perceptions of susceptibility to prostate cancer and trust in the healthcare system. For instance, African American men are disproportionately affected by prostate cancer but may be less likely to trust medical institutions due to historical experiences of healthcare discrimination, leading to lower screening uptake (Merriman *et al.*, 2015). Additionally, some men may believe that prostate cancer is inevitable with aging and thus feel fatalistic about seeking early intervention.

Family and Community Influence: Sociocultural factors extend beyond the individual, with family and community playing significant roles in shaping health behaviors. Men who come from families or communities that promote open discussions about health and encourage preventive care are more likely to engage in prostate cancer screening (Oliver *et al.*, 2011). In contrast, communities that uphold traditional gender roles, where health-seeking is seen as a sign of weakness, may impede men's willingness to seek timely medical advice.

Empirical Literature Review: **Factors that Influence Awareness, Knowledge and Responses of Men toward Prostate Cancer**

Studies like Gift *et al.* (2020) and Ogusanya *et al.* (2017) among others point to the immense role of social demographic and sociocultural factors in shaping awareness, knowledge and responses to prostate cancer among men. Regarding the role of age, Gift *et al.* (2020) studied subscription pattern to prostate cancer screening in Kitwe Teaching Hosital, Zambia. They recommended that prostate cancer screening should start from 40 years of age and above. According to them, prostate cancer risk grows with age. Indeed, older men are more prone to get prostate cancer than younger men (under 40), who have a lower risk of being diagnosed with the disease. As risk of prostate cancer rises rapidly after age 50, with about 6 in 10 cases of prostate cancer found in men older than 65 who have lower overall survival, Jayadevappa *et al.* (2011) strongly recommended that older men (over 60) should get prostate-specific antigen (PSA) test screening frequently.

Although, older men, particularly those above 50, are at a higher risk of prostate cancer, yet awareness varies. Young men often have limited knowledge about the disease, perceiving it as an issue for older populations (Sarma & Schottenfeld, 2009). However, on their part, older men may have misconceptions, especially in regions where access to accurate health information is limited (Ogunsanya *et al.*, 2017).

Regarding sociocultural factors, studies like Patel *et al.* (2010) found that men with higher levels of education tend to be more informed about prostate cancer symptoms, risks, and the importance of screening. This may be linked to greater access to health information and higher health literacy. Penson *et al.* (2010) noted that economic disparities significantly impact access to healthcare services, including prostate cancer screening and treatment. A recent study reported that African and African American men were less likely than European and American men to seek prostate cancer screening due to financial barriers, lack of health insurance, and/or poor health-seeking behavior (Aluh*et al.*, 2018).

THEORETICAL FRAMEWORK - Health Belief Model (HBM)

Health Belief Model (HBM) was developed by a group of social psychologists Godfrey Hochbaum, Rosenstock Irwin and Howard Becker at the U.S public health services in the 1950`s. This is a psychological model that attempts to explain and predict health behaviours by focusing on the attitudes and personal beliefs of individuals. It was developed to help understand why people did or did not use preventive services offered by public health

departments in the 1950`s, and has evolved to address newer concerns (Becker, 1971).
Howard Becker (1971) looked at the causes of health seeking behaviour. He explained health seeking behaviour based on a belief system. He posits that people`s beliefs shape their health seeking behaviour. These beliefs are in turn shaped by the experiences the people have had in the past, their knowledge system and their socialization.
The Health Belief Model (HBM) consists of four variables namely: perceived susceptibility, perceived seriousness, perceived benefits of taking action and cues to action (Becker, 1971).
Perceived susceptibility: The individual's belief that they are at risk for a disease.
Perceived severity: The individual's belief that the disease has serious consequences.
Perceived benefits: The individual's belief that taking action will reduce their risk or severity of the disease.
Perceived barriers: The individual's belief that taking action will be difficult or costly.
Cues to action: The individual's exposure to information or events that motivate them to action.
Self-efficacy: The individual's belief that they can successfully take the necessary action.
Applying this theory to this study, it is believed that older men over 50 years old are more likely to perceive themselves as at risk due to the increased prevalence of prostate cancer with age. They perceive prostate cancer as severe due to its potential for causing death and can have significant impacts on quality of life, including erectile dysfunction, incontinence, and fatigue. They perceive early detection as beneficial, as it can increase the chances of successful treatment and reduce the risk of death from prostate cancer. Men may fear a diagnosis of prostate cancer, which can lead to anxiety and stress. Screening and treatment can be expensive, especially for men without health insurance.
HBM attempts to predict health-related behaviour by accounting for individual differences in beliefs and attitudes. Health belief model is suitable as theoretical thrust of this study because prevailing beliefs and socialization or learning from others play key roles in shaping attitudes, awareness dispositions, knowledge, perceptions and responses of men in Anambra state towards prostate cancer. However, the model may not fully account for other factors unrelated to health such as education, economic status etc., that also influence the behaviour of members of the public.

MATERIALS AND METHODS

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 hypothesis was tested using chi-square (x^2) inferential statistics.

RESULTS/FINDINGS

During the data collection process, a total of 1,110 copies of the questionnaire were distributed to the respondents. Out of this number, 1,088 copies, representing a 98.02% return rate, were correctly completed and returned for analysis. However, 22 copies, representing a 1.98% attrition rate, were either not returned or were incorrectly filled and therefore excluded from the final analysis. Thus, the quantitative analysis in this study is based on the 1,088 correctly

completed questionnaire copies.

Table 1: *Distribution of respondents' socio-demographic characteristics*

Socio-Demographic Variables	Frequency	Percent
Age Categories		
20 - 30 Years	230	21.1%
31 - 41 Years	178	16.4%
42 - 52 Years	237	21.8%
53 - 63 Years	226	20.8%
64 - 74 Years	217	19.9%
Total	**1,088**	**100.0%**
MaritalStatus		
Single	225	20.7%
Married	683	62.8%
Divorced	65	6.0%
Separated	53	4.9%
Widowed	62	5.7%
Total	**1,088**	**100.0%**
Education		
No formal education	54	5.0%
FLSC	101	9.3%
SSCE/WASSCE	385	35.4%
Diploma/OND/NCE	245	22.5%
HND/B.Sc	234	21.5%
M.Sc/PhD	69	6.3%
Total	**1,088**	**100.0%**
Religion		
Christianity	979	90.0%
Islam	31	2.8%
African Traditional Religion	56	5.1%
Atheist/Agnostic	12	1.1%
Others	10	0.9%
Total	**1,088**	**100.0%**
Occupation		
Civil Servant	317	29.1%
Trader/Business	311	28.6%
Farmer	156	14.3%
Artisan	142	13.1%
Retired	98	9.0%
Unemployed	42	3.9%
Others	22	2.0%
Total	**1,088**	**100.0%**
Monthly Income		
<70,000	290	26.7%
70,000 - 120,000	263	24.2%
120,001 - 170,000	229	21.0%

170,001 - 220,000	158	14.5%
220,001 - 270,000	104	9.6%
> 270,000	44	4.0%
Total	**1,088**	**100.0%**
Place of Residence		
Urban	664	61.0%
Rural	424	39.0%
Total	**1,088**	**100.0%**

Field Survey, 2025

The study sample comprised men across diverse age groups**,** with a fairly balanced distribution. The largest proportion of respondents fell within the 42–52 years (21.8%) and 20–30 years (21.1%) age brackets, indicating a mix of younger, middle-aged, and older men. This spread is relevant for prostate cancer awareness, as risk increases with age, particularly for men over 50. The representation of younger men suggests an opportunity to ascertain and promote early awareness and preventive practices.

Analysis of Research Question: What are the major factors that influence knowledge and awareness of prostate cancer among men in Anambra State?

Table 2: *Distribution of responses on the impact of personal factors on prostate cancer awareness*

Response Options	Frequency	Percent
No	534	49.1
Yes	554	50.9
Total	**1,088**	**100.0**

Source: Field Survey, 2025

Data analysed and presented in Table 2 show that 554 (50.9%) indicated that personal factors affect or limit their knowledge and awareness of prostate cancer, while 534 (49.1%) reported that such factors do not influence their awareness. This reflects an almost even distribution of responses, with a slight majority acknowledging the influence of personal factors on their prostate cancer awareness

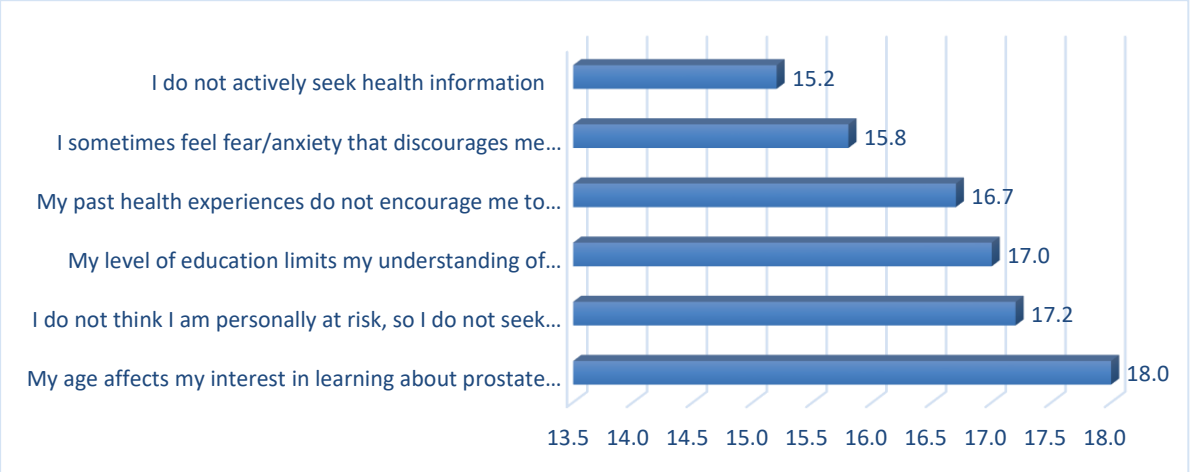


Figure 1: Distribution of Respondents on the Personal Factors that limit their knowledge about prostate cancer

The quantitative analysis presented in Figure 1 revealed that slightly more than half of respondents (50.9%) indicated that personal factors influence their awareness of prostate cancer. Follow-up data further showed that these limiting factors were distributed across education (17.0%), age (18.0%), lack of information-seeking (15.2%), discouraging past experiences (16.7%), fear or anxiety (15.8%), and low perceived risk (17.2%). Qualitative insights from both In-Depth Interviews (IDIs) and Focus Group Discussions (FGDs) reinforce and contextualize these findings, offering deeper understanding of why and how personal factors shape men's awareness.

Consistent with the 17% who indicated that education limits understanding, one prostate cancer patient explained,

> *Ehmm!..., yes, for instance, sometimes when they bring these health brochures or pamphlets, I don't fully understand the medical terms… my level of schooling makes it harder for me to grasp this kind of information.***(IDI, P2, Aged 62, Prostate Cancer Patient/Trader).**

This was supported in the FGDs, where a participant stated: *"The information is too technical. If they can explain it in our local way, more of us will pay attention"***(FGD session 3, ONP5, Aged 51, Civil Servant).**

Age-related disinterest, endorsed by 18% of survey respondents, was echoed by a health worker who remarked, *"Many older men feel they are already set in their ways. They often say, 'At my age, what difference will this information make?"***(**IDI, P1, Aged 48, Community Health Officer**).** Similarly, one FGD participant shared, *"Young men like to ask questions, but at our age, we just leave things the way they are"* **(FGD session 3, ONP3, Aged 55, Security Officer).**

The quantitative finding that 15.8% of respondents experience fear or anxiety that discourages learning was also reflected in the qualitative narratives. As one patient noted, *"Anything about cancer scares me… sometimes I prefer not to know because it makes me anxious"* **(**IDI, P4, Aged 50, Prostate Cancer Patient/Business Owner**).** An FGD participant added, *"We hear that cancer means death, so some of us avoid talking about it to keep our minds calm"* **(FGD session 3, ONP4, Aged 59, and a Community Chief).**

Low perceived risk, endorsed by 17.2% of respondents was likewise captured in the qualitative component. A health worker explained, *"Many men here believe prostate cancer only affects people with a family history or those living in the cities"* **(**IDI, P3, Aged 55, Civil servant/ Health worker**).** In one FGD session, a participant similarly stated, *"I don't think it concerns me. Nobody in my family has had it, so I don't bother myself about it"* **(FGD Session 2, EKWP5, Aged 61, Transporter).**

Together, the triangulated findings from the survey, IDIs, and FGDs reveal that men's awareness of prostate cancer is shaped by a complex interplay of educational limitations, age-related attitudes, emotional responses, past experiences, and perceived vulnerability. These insights underscore the need for culturally adapted, psychologically sensitive, and age-appropriate strategies to improve prostate cancer awareness in the studied communities.

Table 3: *Respondents' perceptions of socio-cultural factors affecting knowledge and awareness of prostate cancer*

Response Options	Frequency	Percent
No	534	49.1
Yes	554	50.9
Total	**1088**	**100.0**

Source: Field Survey, 2025

Data in Table 3 show that 554 (50. 9%) respondents indicated that socio-cultural factors affect or limit their knowledge and awareness of prostate cancer**,** while 534 respondents (49.1%) reported that such factors do not influence their awareness**.** These results demonstrate an almost even split in perceptions, with a slight majority stating that socio-cultural influence such as cultural beliefs, religious views, community norms, stigma surrounding men's health discussions, and traditional health practices limit their awareness. These substantial proportion (50.9%) who affirmed socio-cultural influence highlights the continued relevance of cultural and community dynamics in shaping men's engagement with prostate cancer information.

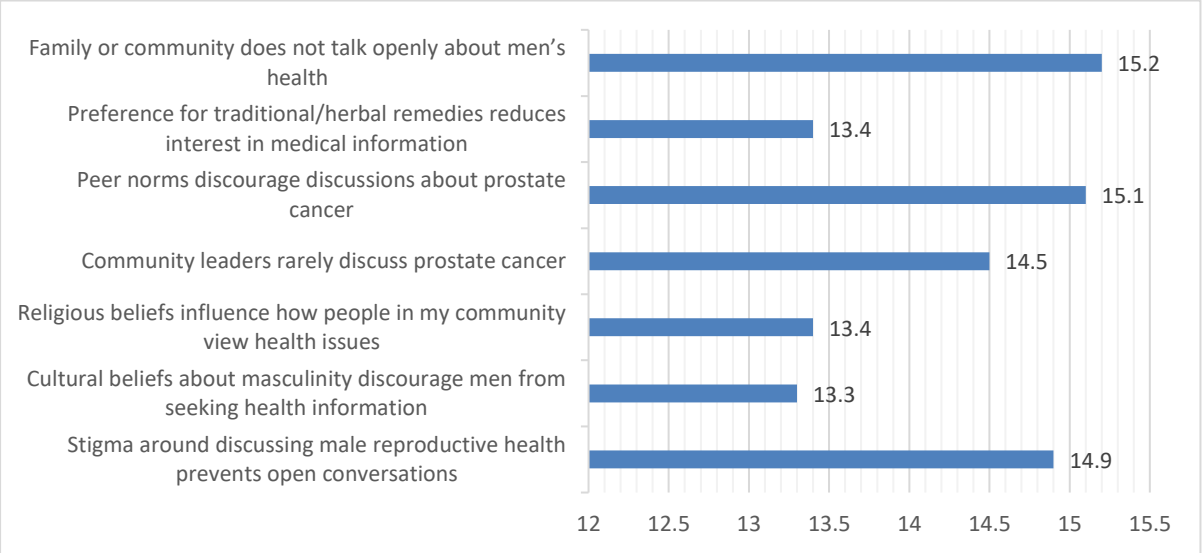


Figure 2: Distribution of Respondents on the Socio-cultural Factors that Limit their Knowledge about Prostate Cancer

The data indicate that several socio-cultural factors limit awareness of prostate cancer. The most commonly reported barriers were family and community silence (15.2%), peer norms discouraging discussion (15.1%), and stigma surrounding male reproductive health (14.9%). These findings suggest that the lack of open conversation within social networks is a primary factor reducing awareness.

Other factors were reported slightly less frequently, including community leaders rarely discussing prostate cancer (14.5%), religious beliefs influencing perceptions of health (13.4%), preference for traditional or herbal remedies (13.4%), and cultural beliefs about masculinity (13.3%). Overall, the findings highlight that both social and cultural influences contribute to limited prostate cancer awareness, with the strongest barriers stemming from silence and stigma within family and peer contexts.

These findings are further illuminated by qualitative data collected through in-depth interviews (IDIs) with patients and health workers, as well as focused group discussions (FGDs) with men aged 50 years and above.

Participants in the FGDs emphasized the role of social silence and stigma in shaping health behaviors. One participant stated, "We rarely talk about these issues among ourselves; it is considered inappropriate for men to discuss their private health matters. Even joking about it

feels uncomfortable, so many of us stay silent until it becomes serious" (FGD Session 2, EKP5, Aged 61, Transporter). Another participant noted, "Even in our families, conversations about men's health are avoided. People usually feel ashamed to ask questions about prostate problems. This makes it hard for men to know when to seek care" (FGD session 2, EKP4, Aged 54, Craftsman).

Insights from IDIs with patients and health workers echoed these sentiments. A prostate cancer patient shared this detail:

> When I was diagnosed, I realized that most men in my community have no knowledge of prostate cancer. Nobody talks about it openly, and men often ignore symptoms until the disease has progressed, which makes treatment more difficult. (IDI, P5, Aged 50, Prostate Cancer Patient/Transporter)

A health worker added,

> Community leaders rarely address men's health issues. Without their engagement, it is challenging to promote awareness or encourage men to get screened. People trust leaders, so silence at this level affects everyone. (IDI, P1, Aged 48, Community Health Officer)

Cultural and religious influences were also reflected in qualitative accounts. One FGD participant explained,

> Many men feel that visiting the hospital is unnecessary because we trust in traditional remedies and prayers. Even when we know about medical services, these cultural and religious expectations often prevent timely health-seeking. (FGD session 3, ONP4, Aged 59, Community Chief)

Additionally, notions of masculinity were highlighted, as echoed in the statement of one FGD participant:

> In our communities, men are expected to be strong, to endure pain, and not worry so much when faced with certain challenging situations such as poor health condition. Admitting illness is sometimes seen as weakness, which prevents many from seeking help for prostate issues early. (FGD session 3, ONP5, Aged 51, Civil Servant)

Overall, triangulation of the quantitative and qualitative data demonstrates that socio-cultural barriers are multidimensional. Quantitative data provide the scope of the barriers, while qualitative narratives reveal how stigma, culture of 1silence, cultural norms, and traditional beliefs operate in everyday social contexts to restrict prostate cancer awareness. The combined evidence emphasizes the importance of addressing both social and cultural influences to improve health education and encourage proactive health-seeking behavior among men.

TEST OF RESEARCH HYPOTHESIS

Hypothesis: Men with higher educational attainment are more likely to agree that personal factors (such as age, personal interest in health information, past health experiences, and perceived risk) influence their awareness and knowledge of prostate cancer, compared to those with lower educational attainment in Anambra State.

In testing this hypothesis, data relating to the independent variable (educational attainment) were recoded into two categories - lower educational attainment and higher educational attainment. These categories were then cross-tabulated with the dependent variable (i.e., level of agreement that personal factors influence awareness and knowledge of prostate cancer), as measured by questionnaire item 26.

Table 4: *Chi square test showing the relationship between educational attainment of men and their agreement that personal factors influence their awareness and knowledge about prostate cancer*

Educational Attainment Level	Personal factors influence awareness and knowledge of prostate cancer		Total	χ2	Df	Sig.
	No	Yes				
Lower Educational Attainment	266 (24.4%)	274 (25.2%)	540 (49.6%)			
Higher Educational Attainment	268 (24.6%)	280 (25.7%)	548 (50.4%)	.014	1	.907
Total	534 (49.1%)	554 (50.9%)	1088 (100.0%			

The results of the chi square test showed that no statistically significant association between educational attainment and respondents' agreement that personal factors influence their awareness and knowledge of prostate cancer ($\chi^2 = 0.014$, $df = 1$, $p = 0.907$). The proportions of respondents who agreed with the statement were nearly identical among men with higher educational attainment (25.7%) and those with lower educational attainment (25.2%).Consequently, the findings do not support the stated alternate hypothesis, suggesting that perceptions regarding the influence of personal factors on prostate cancer awareness and knowledge are similar across educational levels among men in Anambra State.

DISCUSSION OF FINDINGS

Factors Influencing Knowledge and Awareness of Prostate Cancer

The study identified a combination of personal, socio-cultural, and structural factors influencing men's knowledge and awareness of prostate cancer. Quantitative findings revealed an almost even split in respondents' perceptions regarding the influence of personal factors, while nearly half acknowledged the role of socio-cultural influences such as stigma, masculinity norms, religious beliefs, preference for traditional remedies, and community silence.

These findings strongly corroborate findings from studies by Aluh*et al.* (2018), Ogunsanya*et al.* (2016b), and Ugochukwu*et al.* (2019), which identified fear, embarrassment, cultural beliefs, and low perceived risk as major barriers to prostate cancer awareness and screening. The prominence of family and community silence and peer norms discouraging discussion in the present study reinforces the argument that prostate cancer is socially constructed as a private and stigmatised condition, limiting open information exchange.

At the same time, a critical counter-position emerges from the literature. Some studies emphasise structural constraints, such as limited health infrastructure, cost of screening, and weak primary healthcare referral systems, as more decisive barriers than socio-cultural beliefs alone (Oranusi*et al.*, 2012). From this perspective, cultural explanations risk over-emphasising individual attitudes while underplaying the role of systemic inadequacies. The present findings suggest that while socio-cultural factors are significant, their influence is magnified in contexts where institutional support for preventive care is weak.

Importantly, the absence of a statistically significant relationship between educational attainment and men's agreement that personal factors influence awareness challenges

assumptions implied in some reviewed studies that higher education necessarily translates into greater health awareness. While studies such as Aluh*et al.* (2018), Ogunsanya*et al.* (2016b), and Ugochukwu*et al.* (2019) associate low education with poor awareness and screening behaviour, the present findings suggest that higher education does not automatically neutralise the influence of socio-cultural norms and emotional responses. A counter-interpretation, however, is that education may still exert an indirect effect by shaping access to information sources and healthcare networks, even if it does not directly translate into heightened personal risk perception.

From a theoretical perspective, this finding supports the framework's emphasis on social mediation, showing that individual-level resources such as education are filtered through cultural, emotional, and structural contexts in shaping awareness.

SUMMARY OF FINDINGS

This study examined factors influencing awareness, knowledge and perceptions or response patterns 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 was largely reactive, with many men engaging with prostate cancer information only after the onset of symptoms rather than as preventive health behaviour. 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.

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 of 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 among men in Anambra State is low and insufficient to produce meaningful behavioural change. There is low level of effective engagement with prostate cancer prevention, screening, and treatment services among men.

This study also demonstrates that men's responses to prostate cancer are not solely determined by individual knowledge or attitudes but are influenced or 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 awareness and knowledge deficits, socio-cultural barriers, and systemic weaknesses in healthcare provision. All these, when complemented by awareness campaigns and knowledge drives will translate into measurable reductions in late diagnosis and mortality often associated with prostate cancer.

RECOMMENDATIONS

Based on the findings and conclusion reached in this study, the following are recommended and aligned with the research questions/specific objective of this study.

1. Public health education initiatives should be reoriented toward comprehensive and practical awareness and 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. Given the identified disjuncture between positive attitudes and low screening uptake, interventions should incorporate psychosocial and behavioural components. 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. In light of structural barriers such as cost and limited service availability, prostate cancer screening 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. Prostate cancer related services should be mainstreamed into non-communicable disease policies at both state and national levels. A coordinated, multi-sectoral approach involving health authorities, community leaders, religious institutions, and the media is essential. Routine monitoring and evaluation mechanisms should be established to assess the effectiveness of interventions over time.

REFERENCES

Akinremi, T. O. (2011). Cancer in Nigeria: The way forward. *African Journal of Medicine and Medical Sciences, 40*(3), 245–249.

Aluh, D. O., Anyachebelu, O. C., Azubuike, E. A., &Abdulmuminu, I. (2018). Knowledge, attitudes, and perception of prostate cancer among male outpatients of a tertiary care hospital in south-east Nigeria. *Journal of Applied Pharmaceutical Science, 8*(11), 64–68.

American Cancer Society. (2016). *Key statistics for prostate cancer*. https://www.cancer.org/cancer/prostate-cancer/about/key-statistics.html

Ariom, S. M., Mbanuzuru, A. V., & Obi-Okar, A. C. (2023). Prostate cancer: Knowledge, perception and rate of screening among male artisans in Nnewi-North Local Government Area, Anambra State, Nigeria. *International Journal of Research and Scientific Innovation, 10*(11), 1–10.

Center, M. M., Jemal, A., & Ward, E. (2012). International trends in prostate cancer incidence rates. *Cancer Epidemiology, Biomarkers & Prevention, 21*(10), 1421–1425.

Eke, N., and Sapira, M. K. (2002). Prostate cancer in Port Harcourt, Nigeria. *Nigerian Journal of Surgical Research, 4*(1–2), 34–44.

Ferlay, J., Soerjomataram, I., Dikshit, R., *et al.* (2015). Cancer incidence and mortality worldwide. *International Journal of Cancer, 136*(5), E359–E386.

Ferlay, J., Ervik, M., Lam, F., *et al.* (2024). *Global Cancer Observatory: Cancer Today*. International Agency for Research on Cancer. https://gco.iarc.who.int/today

Global Cancer Observatory. (2021). *Cancer today*. International Agency for Research on Cancer.

Global Cancer Observatory. (2022). *Nigeria: Cancer statistics at a glance*.

Gift, S., Kasongo, N., & Mwanakasale, V. (2020). Knowledge and practice towards prostate cancer screening. *African Journal of Urology, 26*, 70..

Jayadevappa, R., Chhatre, S., Johnson, J. C., &Malkowicz, S. B. (2011). Ethnicity and prostate cancer outcomes. *Health Policy, 99*, 97–106.

Maladze, N., Maphula, A., Maluleke, M., &Makhado, L. (2023). Knowledge and attitudes towards prostate cancer. *International Journal of Environmental Research and Public Health, 20*, 5220.

Mayo Clinic. (2024). *Prostate cancer*. https://www.mayoclinic.org

Markman, M. (2022). *Prostate cancer types*. https://www.cancercenter.com

Murtola, T. J., Sälli, S. M., Talala, K., *et al.* (2016). Prostate cancer trends in Finland. *ActaOncologica, 55*(9–10), 1146–1152.

National Cancer Institute. (2021). *Cancer definition*. https://www.cancer.gov

Ngowi, B. N., Mremi, A., Mbwambo, O. J., *et al.* (2024). Prostate cancer knowledge in Tanzania. *Cancer Treatment and Research Communications, 39*, 100811.

Nwobi, C. A., & Osuagwu, C. C. (2018). Economic implications of prostate cancer care. *African Journal of Health Economics, 7*(2), 12–19.

Obiora, U., Aghaji, C., &Ugwu, A. (2018). Knowledge and screening practices. *Journal of Men's Health, 15*(2), 81–89.

Ogunsanya, M. E., Brown, C. M., Odedina, F. T., *et al.* (2017). Knowledge of prostate cancer. *American Journal of Men's Health, 11*(4), 1008–1018.

Pernar, C. H., Ebot, E. M., & Wilson, K. M. (2018). Epidemiology of prostate cancer. *Cold Spring Harbor Perspectives in Medicine, 8*, a030361.

Rawla, P. (2019). Epidemiology of prostate cancer. *World Journal of Oncology, 10*, 63–89.

Rebbeck, T. R., Haas, G. P., & Stephenson, R. A. (2013). Prostate cancer disparities. *Prostate Cancer, 2013*, 560857.

Sung, H., Ferlay, J., Siegel, R. L., *et al.* (2021). Global cancer statistics 2020. *CA: A Cancer Journal for Clinicians, 71*(3), 209–249.

Ugochukwu, U. V., Odukoya, O. O., Ajowu, A., &Oyewola, R. (2019). Prostate cancer screening knowledge. *Pan African Medical Journal, 34*, 168.

Umeh, I. B., Ogbuagu, N. C., Okafor, C., *et al.* (2023). Cost-benefit analysis of PSA testing. *Nigerian Journal of Medicine, 31*, 1–10.

Vickers, A. J., Cronin, A. M., Bjork, T., *et al.* (2010). PSA concentration and mortality. *BMJ, 341*, c4521.