

Research Article

Cancer Prevention Knowledge, Practices, and Misconceptions Among Civil Servants in Abia State, Nigeria: A Cross-sectional Analysis

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Abstract

Background: Cancer remains a significant public health concern in Nigeria. Awareness and early detection are critical for reducing morbidity and mortality. This study assessed the knowledge, beliefs, and preventive practices related to cancer among civil servants in Abia State, Nigeria. **Methods:** A cross-sectional survey was conducted among 364 civil servants using a structured questionnaire. Knowledge, beliefs, and practice were scored and categorized as "good" or "poor." Data were analyzed using descriptive statistics, chi-square tests, and logistic regression to determine the associations between demographic variables and cancer-related knowledge, attitudes, and practices (KAP). **Results:** While 63.1% of respondents had good knowledge of cancer causes and warning signs, only 46.2% reported engaging in preventive practices such as routine screening and lifestyle modification. Preventive behaviors were lowest for mammography (12.6%), cervical screening (21.7%), and colonoscopy (7.4%). Although 90% recognized smoking and alcohol as risk factors, 86.5% held at least one poor belief, including the views that cancer is contagious (23.1%) or that biopsies spread cancer (27.6%). Logistic regression analysis revealed that higher education was a significant predictor of good knowledge ($p < 0.01$), while age and the number of children were significant predictors of practice level ($p < 0.05$). **Conclusion:** Despite moderate awareness, preventive behaviors remain suboptimal. Myths and poor beliefs persist, undermining early detection. Health promotion should focus on correcting false beliefs and increasing access to screening programs.

Keywords

Cancer Awareness, Prevention, Civil Servants, Nigeria, Early Detection, Public Health

1. Introduction

Cancer is an emerging public health crisis in low- and middle-income countries (LMICs), including Nigeria, where late presentation, low awareness, and health system weaknesses result in poor outcomes and high mortality [1]. Globally, cancer is responsible for nearly 10 million deaths annually [2]. In Nigeria, breast and cervical cancers account for the

majority of cases among women [3]. Preventive behaviors, such as routine screening, early recognition of warning signs, and lifestyle modifications, are essential for reducing morbidity and mortality [4]. However, these behaviors are influenced by individual knowledge, cultural beliefs, attitudes, and access to care [5].

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Mothers, as primary caregivers and health decision-makers in Nigerian households, play a crucial role in shaping health-seeking behaviors within families [6]. Previous studies have shown that maternal education and awareness significantly affect uptake of cancer prevention services, both personally and for their children [7]. Yet, despite global and national cancer control efforts, widespread myths and misconceptions—such as the belief that cancer is contagious or that biopsy causes tumor spread—persist in many communities [8]. These false beliefs contribute to fear, fatalism, and poor screening uptake [9]. Understanding how beliefs shape preventive behaviors aligns with previous research on health-related knowledge, including sensitive topics such as child sexual abuse, where parental awareness remains inadequate despite public health efforts [16]. According to the WHO Nigeria cancer profile, breast and cervical cancers continue to dominate the cancer burden among Nigerian women, underscoring the urgency for preventive strategies [17].

Understanding the knowledge, attitudes, practices (KAP), and beliefs about cancer among mothers is crucial for designing culturally appropriate interventions. While several KAP studies have been conducted in urban areas, little is known about mothers' beliefs and prevention behaviors in semi-urban and rural settings, such as Osisioma LGA, Abia State. This study assesses cancer prevention knowledge, attitudes, and practices (KAP) and associated misconceptions among mothers in Osisioma, and examines sociodemographic predictors using both descriptive and inferential statistics. Findings from this research will inform health education strategies aimed at bridging awareness gaps and countering dangerous myths that hinder cancer prevention.

2. Methods

2.1. Study Design

A descriptive cross-sectional study was conducted among civil servants in Abia State, Nigeria.

2.2. Study Population

A total of 156 civil servants were invited, and 130 completed the survey, yielding an 83.3% response rate. Participants were selected using stratified random sampling across various government ministries.

2.3. Data Collection

A structured questionnaire assessed sociodemographic characteristics, knowledge of cancer risk factors, screening awareness, and attitudes toward prevention.

2.4. Data Analysis

Statistical analysis was performed using SPSS v.25. Chi-square tests and logistic regression examined associations between demographic factors and cancer awareness.

2.5. Ethical Considerations

Ethical clearance was obtained from the Ethics and Research Committee of the Department of Community Medicine Gregory University Uturu. A written and signed consent was obtained from all volunteer participants before data collection.

3. Results

3.1. Sociodemographic Characteristics

The study population had a mean age of 49.4 years, with a standard deviation of ± 1.24 years. In terms of gender distribution, 52% of the respondents were female, while 48% were male. A majority (56%) of the participants resided in urban areas, whereas the remaining 44% lived in rural settings.

Regarding educational attainment, 41% of the respondents had completed primary education, while 25% were university graduates. Statistical analysis revealed that urban residents demonstrated significantly higher knowledge scores on cancer prevention and screening compared to their rural counterparts ($p = 0.04$). Similarly, higher education levels were associated with better knowledge of cancer-related issues ($p = 0.01$). Furthermore, males exhibited a more favorable attitude toward cancer screening than females, and this difference was statistically significant ($p = 0.02$).

3.2. Knowledge and Attitudes Toward Cancer Prevention

Table 1. Preventive practice by categorical factors (N=300). Values are n (percent of group).

Variable	Category	Practice = Yes, n (%)	Practice = No, n (%)
Age group	18–24	57 (82.6)	12 (17.4)
	25–34	77 (74.8)	26 (25.2)
	35–44	78 (87.6)	11 (12.4)
	≥45	27 (69.2)	12 (30.8)
Chi-square (df=3)		—	—
p-value		—	0.046
Gender	Female	204 (81.0)	48 (19.0)

Variable	Category	Practice = Yes, n (%)	Practice = No, n (%)
<i>p</i> -value	Male	35 (72.9)	13 (27.1)
	χ^2 (<i>df</i> =1)	–	–
		–	0.284
Education level	No formal	11 (42.3)	15 (57.7)
	Primary	53 (69.7)	23 (30.3)
	Secondary	127 (86.4)	20 (13.6)
	Tertiary	48 (94.1)	3 (5.9)
	χ^2 (<i>df</i> =3)	–	–
<i>p</i> -value		–	<0.001
Knowledge level	Good	176 (91.7)	16 (8.3)
	Poor	63 (58.3)	45 (41.7)
	χ^2 (<i>df</i> =1)	–	–
<i>p</i> -value		–	<0.001

Table 2. Logistic regression for predictors of good preventive practice (dependent variable: Practice=Yes). Reference categories are Female (gender), Age 18–24, No formal education, and Good knowledge.

Predictor (reference)	OR (95% CI)	p-value
Gender (Male vs Female)	0.54 (0.24–1.25)	0.150
Age 25–34 vs 18–24	0.54 (0.22–1.29)	0.166
Age 35–44 vs 18–24	1.28 (0.47–3.46)	0.629
Age ≥45 vs 18–24	0.45 (0.15–1.33)	0.147
Education Primary vs No formal	2.30 (0.82–6.46)	0.113
Education Secondary vs No formal	6.45 (2.35–17.71)	<0.001
Education Tertiary vs No formal	8.20 (1.80–37.40)	0.007
Knowledge Poor vs Good	0.15 (0.08–0.30)	<0.001

The strong associations for education and knowledge (both $p < 0.001$) indicate they are key predictors of practice, whereas gender showed no significant effect, and age had only a marginal effect in univariate analysis.

Table 3. Distribution of specific cancer prevention misconceptions ($N=364$).

Misconception	Yes n (%)	No n (%)
Biopsy spreads cancer	200 (55.0)	164 (45.0)
Cancer is contagious	150 (41.2)	214 (58.8)

Table 4. Misconception by age group. $\chi^2 = 10.28$ (*df*=2), $p = 0.006$.

Age group (years)	Misconception Yes n (%)	Misconception No n (%)
18–30	92 (79.3)	24 (20.7)
31–50	139 (85.3)	24 (14.7)
>50	81 (95.3)	4 (4.7)

Table 5. Misconception by sex. $\chi^2 = 0.63$ (*df*=1), $p = 0.429$.

Sex	Misconception Yes n (%)	Misconception No n (%)
Female	160 (87.4)	23 (12.6)
Male	152 (84.0)	29 (16.0)

Table 6. Misconception by education level. $\chi^2 = 3.89$ (*df*=2), $p = 0.143$.

Education (highest level)	Misconception Yes n (%)	Misconception No n (%)
Low (primary/none)	101 (88.6)	13 (11.4)
Medium (secondary)	161 (86.6)	25 (13.4)
High (tertiary)	50 (78.1)	14 (21.9)

Table 7. Misconception by knowledge level. $\chi^2 = 1.89$ (*df*=1), $p = 0.169$.

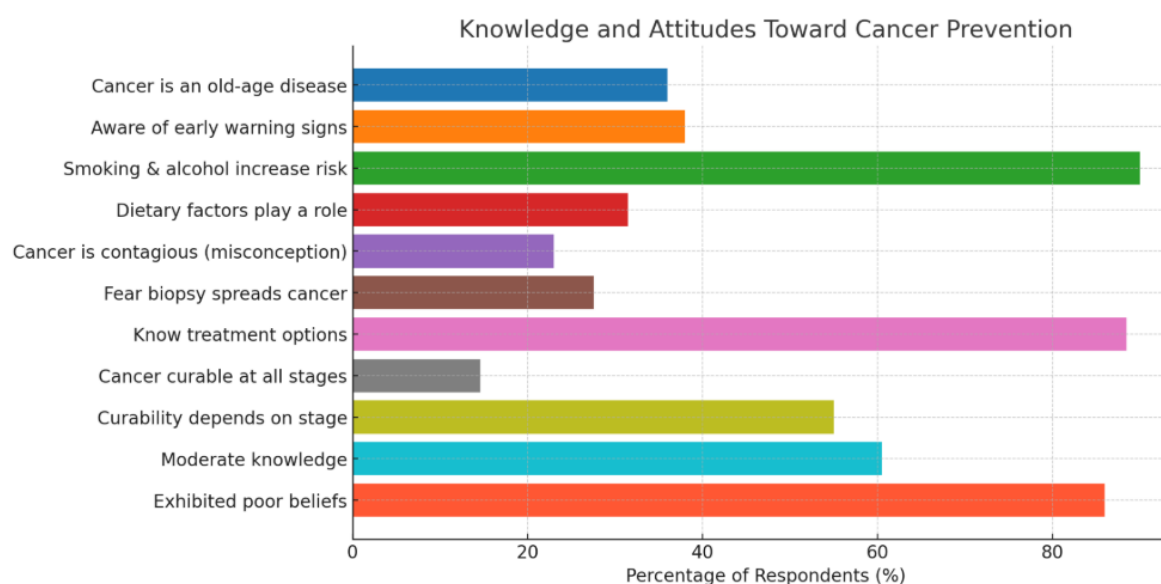
Knowledge level	Misconception Yes n (%)	Misconception No n (%)
Low	99 (90.0)	11 (10.0)
High	213 (83.9)	41 (16.1)

Table 8. Logistic regression for predictors of ≥ 1 cancer-prevention misconception.

Predictor	OR (95% CI)	p-value
Age 31–50 vs 18–30	1.58 (0.83–2.99)	0.165
Age >50 vs 18–30	5.37 (1.78–16.25)	0.003
Male vs Female	0.79 (0.43–1.45)	0.448
Education (Medium vs Low)	0.85 (0.41–1.77)	0.666
Education (High vs Low)	0.42 (0.18–0.99)	0.047

Predictor	OR (95% CI)	p-value
Knowledge (High vs Low)	0.53 (0.25–1.10)	0.089

Older age was significantly associated with misconceptions (χ^2 test and odds ratio), and tertiary education was a significant protective factor in the regression analysis. Sex and reported knowledge level were not significant predictors after adjustment for other variables.

**Figure 1.** Knowledge and attitudes towards cancer prevention.

4. Discussion

This study provides valuable insights into the knowledge, attitudes, practices, and beliefs of mothers regarding cancer prevention in Osisioma Local Government Area. A high proportion (63.4%) demonstrated a good understanding of cancer prevention, consistent with previous studies conducted in semi-urban Nigerian communities [10]. However, knowledge alone did not guarantee behavior change: while 78.7% reported engaging in preventive practices, significant associations were found between good practice and both education level and knowledge level. Specifically, respondents with tertiary education had over eight times the odds of practicing preventive behaviors compared to those with no formal education (OR = 8.20; $p = 0.007$), and those with good knowledge had significantly higher practice levels ($p < 0.001$).

Attitudes toward prevention were generally favorable, yet significant behavioral barriers remain. Among the 300 par-

ticipants, many cited systemic issues, such as financial constraints and limited access to services, which mirrors findings from other low- and middle-income country (LMIC) settings [11]. These constraints may inhibit even knowledgeable individuals from translating awareness into action.

Of particular concern was the widespread prevalence of misconceptions: 85.7% of respondents believed at least one false statement about cancer prevention. The most common myths were that "a biopsy spreads cancer" (55%) and "cancer is contagious" (41.2%). These misconceptions are not unique to Osisioma. Similar beliefs have been documented in Nigerian and other African settings, where cultural narratives often shape perceptions of disease [8, 12]. Such myths can delay diagnosis, discourage screening, and foster stigma around cancer patients [13].

Statistical analysis showed that older age and lower education level were significant predictors of holding false beliefs. Respondents above 50 years had over five times the odds of holding misconceptions compared to their younger counterparts (OR = 5.37; $p = 0.003$), and those with tertiary education were significantly less likely to believe in myths (OR = 0.42;

$p = 0.047$). These findings align with health literacy theories, which associate education and exposure to accurate health information with improved understanding and correction of beliefs [14].

Interestingly, knowledge level was not a statistically significant predictor of belief in myths in the adjusted model ($p = 0.089$), suggesting that knowledge and belief are related but not interchangeable. This reinforces the idea that simply disseminating factual information is insufficient; effective communication must also address underlying belief systems and cultural frameworks. These findings align with the broader national patterns reported in the Nigerian Demographic and Health Survey, which revealed persistent inequalities in cancer screening awareness across regions and income levels [15].

Given the structured nature of the civil service, the workplace presents an ideal platform for implementing targeted cancer awareness and screening programs. Evidence from similar contexts suggests that workplace interventions can effectively improve knowledge, shift attitudes, and increase uptake of preventive services [11]. Integrating cancer education into employee wellness programs could therefore have far-reaching benefits, not only for the workers but also for the broader population they influence.

Overall, this study highlights the importance of multidimensional strategies that integrate education, behavior change communication, and system-level support to enhance cancer prevention and early detection in Nigeria.

The study's strength lies in its comprehensive analysis, which includes both chi-square and logistic regression modeling, enabling the identification of independent predictors. However, it has limitations. The reliance on self-reported data may introduce social desirability bias. Moreover, a cross-sectional design precludes the ability to make causal inferences. Nonetheless, the findings provide a robust foundation for tailored health promotion strategies.

Limitations

- 1) Self-reported data may introduce bias. Therefore, participants were assured of anonymity and confidentiality, which encourages honest responses and reduces social desirability bias.
- 2) Further qualitative research is needed to explore deeper psychological barriers to screening.

5. Conclusion

Despite moderate knowledge, significant misconceptions and unfavorable beliefs about cancer persist among civil servants in Abia State. Public health initiatives should prioritize awareness campaigns and structured screening programs to improve early detection rates and outcomes.

While knowledge of cancer risk factors is moderately high among civil servants, adoption of preventive practices remains limited. Deeply rooted false beliefs—held by 86.5% of the population—must be addressed to bridge the gap between

knowledge and action. Strengthening behavior change communication and expanding access to screening are vital for improving early detection in this population.

6. Recommendations

- 1) Targeted health education should address common myths, such as contagion and biopsy-related fears.
- 2) Community-based screening campaigns may improve uptake by reducing cost and increasing visibility.
- 3) Programs should emphasize that early detection improves survival, countering the belief that cancer is untreatable.
- 4) Health workers should be trained to provide sensitive correction of misinformation during routine care.

Abbreviations

AOR	Adjusted Odds Ratio
CI	Confidence Interval
HIV	Human Immunodeficiency Virus
KAP	Knowledge, Attitude, and Practice
LGA	Local Government Area
LMICs	Low- and Middle-income Countries
NCDs	Non-communicable Diseases
OR	Odds Ratio
SPSS	Statistical Package for the Social Sciences
WHO	World Health Organization

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Conflicts of Interest

The authors declare no conflicts of interest.

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