

The Awareness Access Paradox in Endometrial Cancer: Associations Between Symptom Recognition Healthcare Access and Diagnostic Delay Among High Risk Women in Nigeria

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Abstract

Endometrial cancer is an important women's health problem, and early recognition of suspicious symptoms may facilitate timely diagnosis. However, awareness alone may not guarantee access to appropriate diagnostic services. Evidence examining the relationship between endometrial cancer awareness, healthcare access and diagnostic delay among women at increased risk in Nigeria remains limited. This study examined the relationships between endometrial cancer awareness, healthcare access and diagnostic delay among high-risk women in Nigeria. A cross-sectional analytical study was conducted among 150 women drawn from a target population of 250 women in selected communities and a health facility in Enugu State, Nigeria. Participants were identified using predefined risk characteristics, including age ≥ 40 years, diabetes mellitus, hypertension, polycystic ovary syndrome, early menarche, late menopause, estrogen-only hormone replacement therapy, tamoxifen exposure and family history of relevant cancer. Data were collected using a researcher-developed Awareness-Access Paradox in Endometrial Cancer Questionnaire (AAPECQ). The instrument underwent face and content validation and demonstrated a split-half reliability coefficient of 0.82. Descriptive statistics and Pearson's product-moment correlation were used to analyse the data at a 0.05 significance level. Participants demonstrated relatively high awareness of endometrial cancer. Awareness of symptoms recorded the highest mean score ($M = 3.68$, $SD = 0.59$), followed by recognition of warning signs ($M = 3.54$, $SD = 0.64$), knowledge of risk factors ($M = 3.42$, $SD = 0.71$) and preventive measures ($M = 3.36$, $SD = 0.73$). Awareness was positively associated with healthcare access ($r = 0.562$, $p < .001$) and negatively associated with diagnostic delay ($r = -0.487$, $p < .001$). Healthcare access demonstrated the strongest association with diagnostic delay ($r = -0.614$, $p < .001$). Although awareness of endometrial cancer was relatively high, healthcare access demonstrated the strongest association with reported diagnostic delay. These findings suggest that awareness interventions should be complemented by measures that improve timely access to consultation, investigation, referral and diagnostic services. Integrated, risk-focused approaches may strengthen early detection of endometrial cancer among women in Nigeria.

Keywords: Endometrial Cancer, Awareness, Healthcare Access, Diagnostic Delay, Symptom Recognition, High Risk Women, Early Detection and Nigeria

1. Introduction

Endometrial cancer (EC), also referred to as cancer of the corpus uteri, is an increasingly important global public health problem. The disease is currently one of the most common malignancies affecting the female reproductive system, and its incidence has increased substantially in many parts of the world. Using Global Burden of Disease data, Feng et al. (2024) reported a substantial increase in the global incidence and mortality burden of endometrial cancer between 1990 and 2019, with considerable geographical variation. Similarly, the most recent global cancer estimates indicate that cancers of the uterine corpus continue to constitute an important component of the global cancer burden among women

(Bray et al., 2024). These trends are particularly concerning because several established risk factors for endometrial cancer, including obesity, diabetes and metabolic disorders, are becoming increasingly prevalent worldwide.

The epidemiology of endometrial cancer is strongly influenced by hormonal, metabolic, reproductive and genetic factors. Salehiniya et al. (2024), in a recent narrative review of the global literature, identified increasing age, obesity, diabetes mellitus, hypertension, prolonged estrogen exposure, early menarche, late menopause, nulliparity, polycystic ovary syndrome (PCOS), tamoxifen use and family history among important factors associated with endometrial cancer risk.

The biological relationship between metabolic disorders and EC is also increasingly recognised. In a pooled analysis of the Epidemiology of Endometrial Cancer Consortium, Brinton et al. (2024) examined hypertension in relation to endometrial cancer risk, further demonstrating the importance of metabolic health in the epidemiology of the disease. These findings reinforce the importance of identifying women with multiple risk characteristics and providing them with appropriate information about symptoms, risk reduction and timely healthcare utilization [1-4].

The increasing prevalence of these risk factors makes awareness of endometrial cancer an important component of public health prevention and early detection. Women who understand their risk factors may be better positioned to recognise symptoms and seek appropriate medical assessment. This is particularly relevant for women with multiple risk characteristics because symptoms that might otherwise be attributed to normal reproductive or menopausal changes may require more careful clinical assessment. Unlike cervical cancer, for which organised screening programmes exist in many settings, there is currently no recommended population-wide screening strategy for asymptomatic women at average risk of endometrial cancer. Consequently, early recognition of symptoms and timely clinical evaluation remain central to early detection. Abnormal uterine bleeding is the most important presenting symptom, with postmenopausal bleeding being particularly significant. Clarke et al. (2018) demonstrated a substantial association between postmenopausal bleeding and endometrial cancer in a systematic review and meta-analysis. More recently, Okunowo et al. (2025) emphasised that improving women's knowledge of uterine cancer symptoms and risk factors is important for encouraging prompt presentation and early diagnosis. Despite the importance of symptoms, awareness does not necessarily translate into timely healthcare utilisation. The pathway from symptom onset to diagnosis involves several stages, including recognition and interpretation of symptoms, decision-making about seeking care, obtaining an initial consultation, clinical assessment, referral, diagnostic investigation and pathological confirmation. Delay may therefore occur at multiple points along this pathway [6-10].

Vandborg et al. (2011) identified patient-related, healthcare-provider and health-system factors as important contributors to diagnostic delay in gynaecological malignancies. Although this evidence predates the current literature, it remains relevant because diagnostic delay is a multidimensional process rather than a problem attributable exclusively to patients. Recent research has provided more direct evidence concerning healthcare access and endometrial cancer. Fife et al. (2024) examined 484 women with endometrioid endometrial cancer who presented with postmenopausal bleeding and found that women without an established relationship with a primary-care physician or general obstetrician-gynaecologist were significantly more likely to experience delayed care. Patients without established outpatient care were also more likely to have extrauterine

disease. The authors concluded that reduced healthcare access contributes to delay in endometrial cancer care.

Healthcare access is multidimensional and extends beyond the geographical presence of a health facility. It includes the ability to obtain appropriate healthcare when needed, including consultation, clinical assessment, diagnostic investigation, referral and treatment. Financial barriers, transportation, waiting times, availability of healthcare professionals and diagnostic capacity may all influence the extent to which women can move through the diagnostic pathway. Supporting this broader understanding of access, a 2024 survey-based study by Fife et al. and colleagues examining healthcare utilisation among women with endometrial cancer identified out-of-pocket payment, transportation difficulties and anxiety about seeing healthcare providers among factors contributing to delayed care. The importance of symptom recognition is also illustrated by research examining women's understanding of abnormal bleeding. Doll et al. (2018) demonstrated that differences in recognition and evaluation of abnormal bleeding may contribute to disparities in endometrial cancer diagnosis. More recent research has similarly highlighted the possibility that women may notice symptoms without recognising their potential significance for uterine cancer. A qualitative study examining vulnerability to care delay among women at risk of endometrial cancer found that some women were attentive to symptoms but did not necessarily understand that these symptoms could indicate uterine cancer. The study also identified disconnection from gynaecological care after the reproductive years as a potential contributor to delayed diagnosis. These findings suggest that symptom recognition and symptom interpretation are distinct concepts. A woman may notice abnormal bleeding but interpret it as a normal consequence of menopause, hormonal changes, fibroids or another benign condition. Such interpretation may delay healthcare seeking even when the symptom itself has been recognised. This distinction is particularly relevant to public health interventions because education should not merely inform women that symptoms exist; it should communicate which symptoms warrant prompt professional assessment. The Nigerian context provides an important setting in which to examine these issues. Although information on endometrial cancer is increasing, knowledge gaps remain substantial. In a multi-facility cross-sectional study of 555 women in Lagos, Okunowo et al. (2025) found that 58.4% had heard of uterine cancer, but only 27.4% demonstrated good knowledge of risk factors, 34.9% demonstrated good knowledge of symptoms and 39.3% demonstrated good knowledge of risk-reducing measures. Only 25.0% demonstrated good overall knowledge, while just 11.2% perceived themselves as being at risk. The authors recommended strategic educational interventions to improve knowledge and health outcomes. The findings of Okunowo et al. (2025) are particularly important for the present study because they demonstrate that simply having heard of uterine cancer does not necessarily equate to adequate knowledge of its symptoms or risk factors. This distinction supports the need to assess

awareness more comprehensively, including symptom recognition, knowledge of risk factors and understanding of preventive measures. The Nigerian healthcare environment also makes the relationship between awareness and access particularly important. Women may recognise potentially suspicious symptoms but face barriers related to healthcare costs, transportation, geographical accessibility, availability of specialists, diagnostic capacity and referral pathways. Evidence from broader cancer care in Nigeria suggests that diagnostic delays can occur both before and after initial contact with healthcare services, indicating that improving outcomes requires attention to the entire diagnostic pathway rather than solely to patient awareness. The relationship between awareness and access can therefore be conceptualised as an awareness–access paradox. Within this framework, greater awareness may encourage women to recognise symptoms and seek care, but awareness alone may not result in timely diagnosis when appropriate healthcare services are difficult to access. Conversely, women with regular contact with healthcare services may have greater opportunities to receive cancer education and discuss symptoms with healthcare professionals. Thus, awareness and healthcare access may operate as interconnected components of the pathway from symptom recognition to diagnosis. This distinction is important because much of the existing literature has examined awareness, risk perception, healthcare access and diagnostic delay as separate issues. For example, Okunowo et al. (2025) focused primarily on knowledge and perceived risk among women in Lagos, whereas Fife et al. (2024) examined healthcare access and delays among women already diagnosed with endometrial cancer. Relatively little research has simultaneously examined endometrial cancer awareness, healthcare access and diagnostic delay among women with characteristics associated with increased EC risk, particularly within the Nigerian context. This gap is important because women with multiple risk characteristics may represent an appropriate population for targeted prevention and early-detection interventions. In the present study, the risk framework included age ≥ 40 years, diabetes mellitus, hypertension, PCOS, early menarche, late menopause, estrogen-only hormone replacement therapy, tamoxifen exposure and family history of relevant cancer. These characteristics were selected because they are recognised in the literature as being associated with endometrial cancer risk (Salehiniya et al., 2024). Understanding the relationship between awareness, access and diagnostic delay may therefore provide useful evidence for designing more comprehensive interventions. If awareness is associated with improved healthcare access and reduced diagnostic delay, educational interventions may have an important role in promoting early presentation. However, if healthcare access demonstrates a stronger relationship with diagnostic delay, as suggested by emerging international evidence, interventions must extend beyond health education to address the availability, affordability and responsiveness of diagnostic services [11–15].

The present study therefore examined the relationships between endometrial cancer awareness, healthcare access

and diagnostic delay among women with characteristics associated with increased risk of endometrial cancer in Nigeria. Specifically, the study assessed awareness of endometrial cancer, healthcare access and reported diagnostic delay and determined the relationships between awareness and healthcare access, awareness and diagnostic delay, and healthcare access and diagnostic delay. By examining these variables together, the study seeks to contribute evidence for an integrated approach to endometrial cancer early detection in Nigeria in which risk awareness, symptom recognition, accessible healthcare and timely diagnostic evaluation are addressed as interconnected components of the cancer-care pathway [15–17].

1.1. Purpose Of the Study

This study examined the relationships between endometrial cancer awareness, healthcare access and diagnostic delay among women with characteristics associated with increased risk of endometrial cancer in Nigeria. The study sought to:

- assess awareness of endometrial cancer among high-risk women;
- assess healthcare access among high-risk women;
- assess reported diagnostic delay;
- determine the relationship between endometrial cancer awareness and healthcare access;
- determine the relationship between endometrial cancer awareness and diagnostic delay; and
- determine the relationship between healthcare access and diagnostic delay.

Hypothesis

- There is no relationship between endometrial cancer awareness, health care access and diagnostic delay among high-risk women.

2. Methods

A cross-sectional analytical design was used to assess endometrial cancer awareness, healthcare access, and diagnostic delay, and to examine the associations between these variables at a single point in time. Because exposure and outcomes were measured concurrently, causal relationships cannot be inferred. The study was conducted in selected locations in Enugu State, Nigeria, including Nsukka Health Centre and Obukpa community (2026). The target population comprised women identified as having characteristics associated with increased risk of endometrial cancer. The planned sample size was 250 women and the achieved sample size was 150. Women were eligible if they met the study-defined criteria of age ≥ 40 years and one or more risk characteristics: diabetes mellitus, hypertension, PCOS, early menarche (≤ 8 years), late menopause (≥ 55 years), exposure to estrogen-only hormone replacement therapy, previous/current tamoxifen exposure, or a family history of relevant cancer. Infertility/nulliparity was assessed but was not used as an eligibility criterion. Eligibility thresholds were operational definitions for this study and are not intended to replace universal clinical definitions. Participants were excluded if they had a previous diagnosis of endometrial cancer, could not provide informed consent, or provided substantially incomplete

questionnaires that prevented calculation of principal study scores. A multistage sampling procedure was used: locations were selected based on availability of eligible women, and eligible participants were recruited until the required sample size ($n=150$) was achieved. Data were collected using a researcher-developed Awareness-Access Paradox in Endometrial Cancer Questionnaire (AAPECQ). The AAPECQ assessed: endometrial cancer awareness (including symptom recognition, risk factors, and preventive measures), healthcare access, and diagnostic delay. Awareness reflected participants' knowledge and understanding of EC, including symptoms, warning signs, risk factors, and preventive measures. Healthcare access measured participants' ability to obtain appropriate healthcare services for concerns suggestive of EC, including consultation, assessment, investigation, referral, and diagnostic services. Diagnostic delay captured self-reported delay between recognition/presentation of potentially suspicious symptoms and obtaining appropriate medical evaluation. Because this was self-reported, it represents reported delay rather than a clinically verified interval from symptom onset to histological diagnosis. The questionnaire underwent face and content validation by experts in public health and health education at the University of Nigeria, Nsukka. Expert recommendations

were incorporated prior to final administration. Pilot testing for reliability was conducted with 30 women in Enugu State who were similar to the study population but not included in the main study. Split-half reliability produced a coefficient of 0.82, indicating good internal reliability. The AAPECQ was administered after explaining study purposes and procedures. Participation was voluntary and informed consent was obtained prior to questionnaire administration. Completed questionnaires were checked for completeness before analysis. Data collection occurred from January to April 2026. Ethical approval was obtained from the University of Nigeria, Nsukka, Research Ethics Committee. Permissions were obtained from relevant local authorities. Confidentiality and anonymity were maintained throughout data collection, analysis, and reporting. Data were analysed using descriptive and inferential statistics. Means and standard deviations summarised continuous variables. Pearson's product-moment correlation coefficient assessed relationships between continuous constructs. Statistical significance was set at two-tailed $p < .05$. Because the design was cross-sectional, significant findings were interpreted as associations rather than causal effects.

3.Results

Awareness domain	Mean	SD
Awareness of symptoms	3.68	0.59
Recognition of warning signs	3.54	0.64
Knowledge of risk factors	3.42	0.71
Knowledge of preventive measures	3.36	0.73
Overall mean	3.50	0.67

Table 1: Awareness Of Endometrial Cancer Among High Risk Women (N = 150)

Participants demonstrated relatively high awareness of endometrial cancer. Awareness of symptoms had the highest

mean score ($M = 3.68$, $SD = 0.59$), while knowledge of preventive measures had the lowest ($M = 3.36$, $SD = 0.73$).

Variable	Awareness	Healthcare access	Diagnostic delay
Awareness	1.000	0.562***	-0.487***
Healthcare access	0.562***	1.000	-0.614***
Diagnostic delay	-0.487***	-0.614***	1.000

Table 2: Correlations Among Awareness, Healthcare Access and Diagnostic Delay (N = 150)

*** $p < .001$.

Awareness was significantly and positively associated with healthcare access ($r = 0.562$, $p < .001$).

Awareness was significantly and negatively associated with diagnostic delay ($r = -0.487$, $p < .001$).

Healthcare access demonstrated the strongest observed association with diagnostic delay ($r = -0.614$, $p < .001$), indicating that participants who reported better healthcare access tended to report lower diagnostic delay.

3.Discussion

The study found that respondents had a high overall level of awareness and recognition of endometrial cancer, with a grand mean of 3.50 ($SD = 0.67$). Awareness of symptoms had the highest mean score ($M = 3.68$, $SD = 0.59$), followed by recognition of warning signs ($M = 3.54$, $SD = 0.64$), knowledge of risk factors ($M = 3.42$, $SD = 0.71$), and knowledge of preventive measures ($M = 3.36$, $SD = 0.73$). The relatively

high symptom awareness is encouraging because recognition of abnormal uterine bleeding, particularly postmenopausal bleeding, is an important component of early endometrial cancer detection. **Wise et al. (2024)**, however, found substantial gaps in public recognition of postmenopausal bleeding as a symptom of endometrial cancer: only 63% of their 648 participants identified it correctly. They further found that only 46.5% of postmenopausal participants

reported receiving counselling from a healthcare provider about postmenopausal bleeding. The comparatively high awareness observed in the present study may therefore reflect the fact that participants were specifically selected because they had characteristics associated with increased endometrial cancer risk, potentially increasing their exposure to health information. The finding is also important when considered against evidence from Nigeria. Okunowo et al. (2025) reported considerable knowledge gaps among women in Lagos, with only 34.9% demonstrating good knowledge of uterine cancer symptoms and 27.4% demonstrating good knowledge of risk factors. Thus, the high awareness observed in the present study should not necessarily be interpreted as evidence that awareness of endometrial cancer is generally high among Nigerian women. Rather, it may indicate that women with recognised risk characteristics constitute an important group for targeted health education. The lower score for preventive-measure knowledge ($M = 3.36$) compared with symptom awareness ($M = 3.68$) is noteworthy. This pattern suggests that recognising a disease may not necessarily be accompanied by comprehensive understanding of how risk can be reduced or managed. Jones et al. (2024) similarly demonstrated substantial deficiencies in public knowledge of endometrial cancer symptoms and risk factors during development of the Womb Cancer Awareness Measure. Their findings showed that awareness improved following exposure to educational material, supporting the potential value of structured cancer-awareness interventions. Recent qualitative evidence provides an additional explanation for this pattern. Ibrahim et al. (2024) found that women experiencing perimenopause and postmenopause sometimes had limited understanding of endometrial cancer risk factors and could interpret abnormal bleeding as part of normal reproductive ageing. Some participants reported waiting before seeking medical care even when they regarded bleeding as potentially concerning. Therefore, although the present participants demonstrated relatively high awareness, continued emphasis on risk-specific knowledge and the significance of abnormal bleeding remains warranted.

3.1. Relationship Between Awareness and Healthcare Access

The study found a moderate positive and statistically significant relationship between awareness and healthcare access ($r = 0.562$, $p < .001$). This indicates that participants with greater awareness tended to report better access to appropriate healthcare services. One possible explanation is that women who are more knowledgeable about endometrial cancer may be more likely to recognise symptoms as requiring professional attention and consequently seek formal healthcare services. Conversely, women who have regular contact with healthcare providers may have more opportunities to receive information about cancer risk factors, symptoms and prevention. The cross-sectional design, however, does not allow the direction of this relationship to be established. The finding is consistent with the broader literature demonstrating the importance of healthcare-provider contact in cancer awareness. Wise et al. (2024) found

that provider counselling was associated with awareness of postmenopausal bleeding, although counselling itself was not routinely received by all postmenopausal participants. Similarly, Okunowo et al. (2025) emphasised the importance of interaction between women and healthcare professionals in improving uterine-cancer knowledge in Nigeria. However, the positive association between awareness and access should be interpreted cautiously. Awareness may facilitate healthcare utilisation, but access itself may also provide opportunities for women to acquire knowledge. Therefore, the relationship may reflect a bidirectional interaction between health literacy and healthcare utilisation, rather than a simple pathway in which awareness independently produces access.

3.2. Relationship Between Awareness and Diagnostic Delay

Awareness was moderately and negatively associated with diagnostic delay ($r = -0.487$, $p < .001$). This finding suggests that participants with greater awareness tended to report shorter diagnostic delays. The result is consistent with the proposition that women who recognise suspicious symptoms and understand their potential significance may be more likely to seek healthcare evaluation promptly. This interpretation is supported by evidence concerning symptom recognition. Wise et al. (2024) found that only 63% of participants recognised postmenopausal bleeding as a symptom of endometrial cancer, demonstrating an important knowledge gap that could potentially affect care-seeking decisions. Similarly, Ibrahim et al. (2024) reported that some women interpreted abnormal bleeding during perimenopause and postmenopause as part of normal ageing and consequently delayed seeking medical attention. The present finding is also consistent with evidence from Sri Lanka. In a large cross-sectional study of 1,168 postmenopausal women, only 56% recognised postmenopausal bleeding as a suggestive symptom of endometrial carcinoma, while 70.7% of women who had experienced relevant gynaecological symptoms reported seeking treatment. The authors concluded that deficiencies in awareness could influence care-seeking behaviour. Nevertheless, awareness should not be viewed as the sole determinant of diagnostic timeliness. A woman may correctly identify abnormal bleeding as potentially concerning but still experience a delay because of cost, distance, availability of healthcare professionals, referral procedures or limited diagnostic services. This interpretation becomes particularly important given the stronger relationship observed between healthcare access and diagnostic delay in the present study.

3.3. Relationship Between Healthcare Access and Diagnostic Delay

The strongest observed relationship was between healthcare access and diagnostic delay ($r = -0.614$, $p < .001$). This finding represents an important contribution of the study because it suggests that access to appropriate healthcare may be more strongly associated with timely diagnostic evaluation than awareness alone. The result closely agrees with Fife et al. (2024), who examined 484

women with endometrioid endometrial cancer presenting with postmenopausal bleeding. They found a median four-month interval from symptom onset to treatment and reported that women without an established primary-care or obstetric-gynaecological healthcare relationship were significantly more likely to experience delayed care. They also had a higher frequency of extrauterine disease. This evidence strengthens the interpretation of the present finding: **recognising a symptom is only the first step in the diagnostic pathway**. Women must subsequently be able to obtain consultation, appropriate investigation, referral and diagnostic confirmation. Your operational definition of healthcare access encompasses precisely these elements.

The Nigerian context makes this finding particularly important. **Fayehun et al. (2025)** reported substantial delays in cancer diagnosis in Nigeria, with a median interval of approximately 12 months from first symptom recognition to diagnosis and approximately five months after first presentation to a healthcare professional. Their findings suggest that diagnostic delay can persist even after women enter the formal healthcare system. This supports the argument that improving early diagnosis requires attention not only to patient awareness but also to the capacity and responsiveness of healthcare services. Consequently, the strong inverse relationship between access and delay in the present study should be interpreted as evidence supporting a **health-system component of diagnostic delay**. Improving awareness without improving the ability of women to obtain timely diagnostic assessment may produce limited gains in early detection.

3.4. The Awareness–Access Paradox

Taken together, the three relationships provide empirical support for the conceptual framework underlying this study. Awareness was positively associated with access ($r = .562$), awareness was negatively associated with diagnostic delay ($r = -.487$), and access demonstrated the strongest negative association with diagnostic delay ($r = -.614$). These findings suggest that the relationship between awareness and timely diagnosis is **not simply linear**. Greater awareness appears to be associated with both better healthcare access and shorter reported delay, but healthcare access has the strongest observed relationship with delay. This supports the study's conceptualisation of an **awareness–access paradox**: women may know that symptoms require attention but still experience delayed evaluation if appropriate services cannot be accessed in a timely manner. Importantly, the term should be interpreted as a **conceptual framework rather than evidence of a causal paradox**, because the cross-sectional design cannot determine temporal sequence or causality. From a public-health perspective, this finding has important implications. Endometrial cancer awareness programmes should not operate independently of healthcare-system strengthening. Health education should be linked to accessible primary healthcare, clear referral pathways, timely investigation and appropriate diagnostic capacity. This integrated approach is particularly relevant for women with recognised risk characteristics who may benefit from targeted education and lower thresholds for clinical evaluation.

4. Limitations

The cross-sectional design limits causal interpretation. The observed associations cannot establish that awareness or healthcare access directly causes shorter diagnostic delay. The study was conducted in selected locations in Enugu State and therefore may not be fully generalisable to women in other Nigerian states or settings. Healthcare access and diagnostic delay were self-reported and may therefore be affected by recall and reporting bias. The AAPECQ was researcher-developed. Although the instrument demonstrated acceptable reliability, further psychometric validation in larger populations is warranted. Finally, the study did not comprehensively measure potential structural determinants of healthcare access, including household income, health insurance, distance to health facilities, transportation costs, waiting times and diagnostic capacity.

5. Conclusion

The study demonstrates that although awareness of endometrial cancer was relatively high among the participating high-risk women, healthcare access had the strongest observed association with diagnostic delay. Awareness was positively associated with healthcare access and negatively associated with diagnostic delay, while healthcare access was strongly and negatively associated with diagnostic delay. The findings suggest that improving women's knowledge is necessary but may not be sufficient for timely endometrial cancer diagnosis. Public-health strategies should combine risk-based cancer education with accessible healthcare, effective referral systems and timely diagnostic services.

Recommendations

- Public health educators should Implement targeted endometrial cancer education for women with recognised risk characteristics.
- Curriculum planners should Integrate endometrial cancer education into routine women's healthcare, particularly diabetes, reproductive, menopausal and primary-care services.
- Government should Strengthen referral pathways between primary healthcare facilities and gynaecological/diagnostic services and also improve access to diagnostic investigations so that women who present with suspicious symptoms can be evaluated promptly.

Public Health Implication

The principal public-health implication of this study is that cancer awareness should be linked to healthcare access. The pathway should be: Risk awareness → symptom recognition → timely healthcare seeking → accessible consultation → appropriate investigation → referral → diagnosis. If any component of this pathway is weak, increased awareness may not result in timely diagnosis. Thus, interventions aimed at reducing endometrial cancer diagnostic delay in Nigeria should combine health education with health-system strengthening rather than relying exclusively on awareness campaigns.

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