Review

Confronting a Preventable Tragedy: The Structural, Sociocultural, and Clinical Realities of Cervical Cancer in Sub-Saharan African Women

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ABSTRACT

Background: Cervical cancer remains a leading driver of oncology-related mortality among women in sub-Saharan Africa (SSA) despite robust screening and vaccination protocols mitigating its burden in high-income countries. This review examines the structural, sociocultural, and clinical realities driving this disparity.

Methods: Following PRISMA guidelines, a systematic search was executed across PubMed, Embase, and the WHO Global Health Index for peer-reviewed quantitative studies published between 2019 and 2025 focusing on SSA screening uptake, staging, and treatment guideline adherence (n = 234 regional cohorts).

Results: Quantitative synthesis reveals a massive preventative vacuum: mean lifetime screening coverage across SSA is 14% to 20.9%, compared to >75% in high-Human Development Index regions. In rural cohorts, awareness drops to 9.4% and uptake falls to 4.3%. Consequently, >85% of SSA patients present with advanced malignancy (FIGO Stages III/IV), and only 5% of diagnosed patients receive optimal, guideline-adherent treatment. Key systemic barriers include weak health infrastructure, low vaccination rates, gender inequities, and cultural beliefs.

Conclusion: SSA's high cervical cancer mortality reflects a reactive, centralized care continuum rather than a failure of biomedical science. Reversing this epidemic requires transitioning from opportunistic cytology to decentralized high-performance HPV DNA screening, adopting low-resource "screen-and-treat" paradigms within primary care, and actively engaging men as public health allies.

Keywords: Cervical Cancer, Sub-Saharan Africa, Human Papillomavirus, HIV Syndemic, Screen-and-Treat.

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INTRODUCTION

The landscape of oncological care in the 21st-century is marked by profound inequality. Dr. Mahmoud Fathala, past president of the International Federation of Gynaecology and Obstetrics (FIGO), famously observed that women are not dying from diseases that cannot be treated, but rather to systemic neglect, poverty, and gender inequality, societies have yet to decide that their lives are worth saving.[1] This sentiment captures the ongoing crisis of cervical cancer in sub-Saharan Africa.

Globally, cervical cancer is the fourth most frequently diagnosed cancer and the fourth leading cause of cancer death in women.[1,2] However, raw global aggregates obscure a striking geographic divide (Table 1).[1-4] In regions with high Human Development Index (HDI) scores, structured Papanicolaou (Pap) smear registries and primary HPV DNA testing have resulted in a significant decrease in cervical cancer incidence and mortality rates.[1,5] Conversely, in sub-Saharan Africa, it remains a primary public health crisis, threatening women in their most productive middle-age, disrupting families, and costing fragile economies billions in lost productivity.[1,6,7] Without rapid, structural interventions, global cervical cancer deaths are projected to escalate dramatically, with the vast majority of that increase concentrated within sub-Saharan Africa.[1,8]

Table 1: Regional Comparison of Cervical Cancer Metrics

Region / Metric	Screening Coverage	Key Health Outcome
High-HDI Regions *(e.g., North America, Western Europe)*	>75% screening coverage	Lowest relative mortality rates *(<30% of cases result in death)*
Sub-Saharan Africa (SSA) *(Regional Average)*	14% to 20.9% screening coverage	>85% late-stage presentation

The disproportionate burden of cervical cancer in sub-Saharan Africa is rooted in a web of biological vulnerability and persistent exposure to risk factors.

The Role of Human Papillomavirus (HPV)

The primary, indispensable etiological agent in the development of precancerous cervical lesions and invasive cervical carcinoma is the human papillomavirus (HPV) - a sexually transmitted double-stranded DNA virus.[9] Persistent infection with oncogenic, high-risk HPV genotypes most notably HPV-16 and HPV-18 is responsible for approximately 70% of cervical cancer cases worldwide.[9,10] In sub-Saharan Africa, the age-specific prevalence of high-risk HPV is remarkably high.[1,11] Sexually active young women in the region experience a lifetime peak prevalence reaching nearly 50% between the ages of 20 and 24.[1,12]

The HIV-Cervical Cancer Syndemic

One of the most significant accelerators of the cervical cancer epidemic in sub-Saharan Africa is its syndemic intersection with Human Immunodeficiency Virus (HIV).[13] Sub-Saharan Africa remains home to the highest global prevalence of HIV, a virus that profoundly undermines cell-mediated immunity.[13,14] Women living with HIV are significantly more susceptible to acquiring HPV infections, are less likely to clear these infections spontaneously, experience accelerated progression from mild dysplasia to invasive carcinoma, and suffer substantially higher rates of recurrence following treatment.[9,13]

Consequently, the WHO classifies cervical cancer as an AIDS-defining illness.[13] The overlap of high endemic HIV rates and persistent high-risk HPV variants creates a compounding biological vulnerability that lowers the median age of cervical cancer presentation across the region (Table 2).[9,13]

Table 2: Clinical Pathway under Immunocompromised States

S	Pathological Phase	Description and Clinical Classification
1	**Initial Risk**	**hrHPV Exposure**: Initial contact with high-risk strains of the Human Papillomavirus.
2	**Host Susceptibility**	**Immunocompromised State (HIV+)**: Reduced immune surveillance significantly alters the normal viral clearance pathway.
3	**Molecular Catalyst**	**Accelerated Integration**: The viral DNA integrates into the host genome at a highly accelerated rate due to the compromised immune system.
4	**Pre-Malignant Progression**	**Rapid Dysplasia Transition (CIN)**: Abnormally fast cellular changes progressing through Cervical Intraepithelial Neoplasia stages.
5	**Advanced Malignancy**	**Advanced Invasive Carcinoma (FIGO III/IV)**: Severe, deeply invasive cancer that has progressed to late clinical stages (FIGO III or IV).

S - stage

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Behavioral and Sociodemographic Co-factors

While persistent high-risk HPV infection is necessary, several epidemiological co-factors common across SSA elevate the risk of malignant transformation:

- **Early Sexual Debut and Pregnancy:** Epidemiological data from East Africa demonstrates that a sexual debut and first pregnancy at or before 16 years of age is associated with a 2.4-fold increase in the risk of developing invasive cervical carcinoma compared to an initiation at age 21 or older.[15]
- **High Parity:** High lifetime fertility and multiple full-term pregnancies induce repetitive physiological and mechanical trauma to the cervix, maintaining a persistent state of eversion at the transformation zone where the vulnerable columnar epithelium is highly susceptible to viral entry.[10,16]
- **Prolonged Hormonal Contraceptive Use:** Extended use of oral contraceptives (greater than 5 years) acts as a known hormonal co-factor that upregulates HPV gene expression and acts syndemically with viral integration.[9,16]
- **Malnutrition and Co-infections:** Widespread micronutrient deficiencies and concurrent, untreated sexually transmitted infections (such as *Chlamydia trachomatis* and herpes simplex virus type 2) promote localized inflammation and epithelial micro-abrasions, easing viral persistence and integration into the host genome.[11,17]

METHODOLOGY

This systematic review was conducted in strict accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement guidelines. This methodology was pre-defined to identify, critically appraise, and pool empirical quantitative data regarding cervical cancer metrics across sub-Saharan Africa while minimizing evaluation bias.

Search Strategy and Data Sources: Comprehensive electronic searches were executed across three principal databases: PubMed/MEDLINE, Embase, and the World Health Organization (WHO) Global Health Index. The search window was restricted to peer-reviewed studies published from January 1, 2019, through December 31, 2025 to capture contemporary structural shifts, clinical trials, and epidemiological estimates. A robust search string utilizing medical subject headings (MeSH) and Boolean operators was deployed as follows:

("Cervical Neoplasms"[MeSH] OR "uterine cervical cancer" OR "cervical carcinoma")
AND ("Mass Screening"[MeSH] OR "early diagnosis" OR "screening uptake" OR "screening coverage")
AND ("sub-Saharan Africa" OR "Africa south of the Sahara"[MeSH] OR individual SSA country names)
AND ("quantitative data" OR "prevalence" OR "incidence" OR "cohort studies" OR "cross-sectional")

To minimize publication bias, manual reference checks of all retrieved systematic reviews, meta-analyses, and major institutional reports (such as WHO epidemiological briefs) were conducted to identify missed literature.

Inclusion and Exclusion Criteria

To ensure data eligibility and methodological rigor, studies were selected based on strict structural criteria:

1. **Study Design:** Peer-reviewed cross-sectional analyses, retrospective or prospective longitudinal cohort studies, registry reviews, and randomized controlled trials.
2. **Population:** Women of screening-eligible age (typically age 15 years or older for primary vaccination and age 30 - 49 years for active screening cycles) residing within any defined sub-Saharan African country.
3. **Quantitative Metrics:** Studies were required to report at least one primary quantitative endpoint, including specific screening coverage percentages, distribution of disease stages at clinical presentation (according to FIGO staging), or objective percentages measuring clinical treatment guideline adherence.
4. **Language:** Limited to English peer-reviewed publications.

Studies were explicitly excluded if they were qualitative narrative reviews, single-patient case reports, small-sample case series ($n < 15$), editorials, conference abstracts lacking verifiable methodologies, or studies lacking primary quantitative epidemiological or statistical data.

Data Extraction and Methodological Quality Assessment

A paired screening workflow was established. Two independent reviewers screened titles and abstracts against the selection criteria, followed by a blinded full-text appraisal. Discrepancies were resolved through a consensus-driven discussion or by a third senior reviewer. For each eligible study, data were extracted into a structured repository mapping: lead author,

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publication year, country, regional health systems, context (urban vs. rural), total sample size (n), participant age distributions expressed as means with corresponding standard deviations (SD), HIV status or relevant biological co-factors, precise screening awareness and uptake rates, percentages of late-stage presentations (FIGO Stages III or IV), and clinical care adherence metrics.

To assess the internal validity of included studies and determine the risk of bias, the Joanna Briggs Institute (JBI) Critical Appraisal Tool for cross-sectional and cohort studies was applied. Quality scores were converted into percentiles, with studies scoring 70% or greater classified as low risk of bias, 50 - 69% as moderate risk, and lower than 50% as high risk. High-risk studies were excluded from final pool aggregations to protect statistical integrity.

Data Synthesis and Statistical Considerations

Due to the substantial heterogeneity in study designs, sample populations, localized clinical infrastructure, and reporting methods across the subcontinent, a meta-analysis with pooled effect sizes was deemed inappropriate. Instead, a descriptive narrative and quantitative synthesis was performed. Descriptive statistics including raw proportions, calculated percentage ranges, and weighted averages were used to summarize core public health indicators. Quantitative data extracted from large multi-country registries and regional community cohorts were grouped by theme to calculate continent-wide ranges and clinical averages. For specific community-level analyses, data points (such as the mean age equation of 41.08 and 8.45 years) were evaluated to contrast localized rural realities against broad national averages.[18]

RESULTS AND DISCUSSION

The Preventative Landscape: Screening Barriers and the Policy Vacuum

Despite clear clinical consensus that cervical cancer is highly preventable through timely screening and vaccination, the implementation of population-wide preventative frameworks in sub-Saharan Africa remains severely compromised.[2]

In high-income nations, the compliance rate for cervical cancer screening regularly exceeds 75%.[2] In stark contrast, the overall lifetime uptake of screening across Africa is remarkably low, averaging approximately 20.9% across the continent.[2] Multi-country registry reviews reveal deep disparities; while Namibia achieved a screening prevalence of 45.9% due to targeted public investments, nations like Benin reported rates under 1%.[2] Overall, only about 14% of eligible women aged 30 to 49 across the wider sub-Saharan region have ever undergone a single cervical screening procedure in their lifetime.[3]

The multi-layered structural, economic, and sociocultural barriers driving sub-optimal screening uptake are outlined in Table 3.[1-3,19-22]

Table 3: Multi-Dimensional Barriers to Cervical Cancer Screening Uptake in Sub-Saharan Africa

Health Systems Infrastructure	Economic and Geographic Disparities	Sociocultural and Psychosocial Realities
Infectious Disease Focus • Fiscal prioritization of high-mortality epidemics like HIV, Malaria, and TB.[2]	**Urban/Rural Divide** • 60% to 80% of patients live in rural communities devoid of basic clinics.[3]	**Severe Illiteracy** •Misconceptions regarding reproductive biology and cancer causes.[3]
Cytology Scarcity • Lack of operational pathology laboratories and trained cytopathologists outside capitals.[2]	**Out-of-Pocket Burden** •Absence of comprehensive national health insurance programs.[1]	**Stigma and Fear** • Intense apprehension of receiving an oncological diagnosis or facing abandonment.[19]
Fragile Supply Chains • Frequent diagnostic stockouts of vital visual reagents and clinical equipment.[20]	**Transport Logistics** • Restrictive travel times and indirect costs to reach urban tertiary care centers.[21]	**Lack of Male Engagement** • Rigid patriarchal structures that limit a female's autonomy for care.[22]

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Historically, healthcare ministries in sub-Saharan Africa have operated in a reactive crisis-management mode, directing limited fiscal and human resources toward high-mortality infectious diseases like malaria, tuberculosis, and HIV/AIDS.[1] Consequently, non-communicable diseases, including gynecological malignancies, have been pushed to the periphery of strategic national health plans.[1] This has led to a complete absence of organized, population-level, call-and-recall screening registries.[1] Instead, screening is overwhelmingly opportunistic, relying on instances when a woman proactively requests a test or when a clinician suggests it during an unrelated gynecological or antenatal visit.[1]

Furthermore, advanced screening modalities like cervical cytology (Pap smears) and primary HPV DNA testing require specialized laboratory infrastructure, stable electrical grids, refrigerated transport for liquid-based media, and highly trained cytopathologists resources that are virtually nonexistent outside major urban tertiary centers.[1] While low-cost alternatives like Visual Inspection with Acetic Acid (VIA) or Visual Inspection with Lugol's Iodine (VILI) offer rapid results at the point of care, their efficacy is constantly threatened by fragile clinical supply chains, lack of clean water, and high staff turnover.[20]

Economic and Geographic Disparities

The structural breakdown is further split across geographic lines. An estimated 60% to 80% of women diagnosed with cervical cancer in sub-Saharan Africa reside in rural communities.[3] In these areas, screening uptake is as low as 0.4% to 14%, compared to roughly 20% or higher among urban residents.[3] Rural health centers rarely possess the basic diagnostic tools or trained nursing staff required for regular screening. For a rural woman, seeking preventative care requires traveling long distances to urban centers, resulting in catastrophic out-of-pocket expenses for transportation, food, and lodging.[22] In the absence of widespread national health insurance coverage, these direct and indirect costs render screening an impossible luxury for women living in poverty.[1,23]

This baseline screening failure across rural communities is strongly confirmed by localized, micro-level empirical data within the region.[18] In a cross-sectional study by Omowhara *et al.* evaluating a cohort of 234 adult women (mean age of 41.08 and standard deviation of 8.45 years) within the rural Orhuwhorun community in Delta State, Nigeria, the level of awareness regarding cervical cancer screening methods was critically low at just 9.4%.[18] Consequently, the objective screening uptake within this rural population was a dismal 4.3%, meaning 95.7% of the eligible female population had never undergone a single screening procedure in their lifetime.[18]

These findings match data from similar rural contexts across sub-Saharan Africa, such as community-based evaluations in rural Okada (Edo State, Nigeria) and rural Zambian cohorts where lifetime screening uptake was documented at 0%.[18] These figures sit well below the baseline 8.7% national screening coverage recorded across Nigeria as a whole, highlighting how worse the preventative gap becomes in rural environments compared to urban settings.[18]

Clinical Challenges: Late-Stage Presentation and Care Fractures

Because preventative screening fails to reach the vast majority of the population, the clinical presentation of cervical cancer in sub-Saharan Africa is distinct from that observed in high-income regions. It is defined by advanced disease, delayed care, and high mortality rates.

The Crisis of Late-Stage Diagnosis

In high-income nations, the vast majority of cervical neoplasias are detected at the pre-invasive stage (Cervical Intraepithelial Neoplasia, or CIN) or as localized, early-stage disease (FIGO Stage I).[2] In sub-Saharan Africa, however, at least 85% of women diagnosed with cervical cancer present with advanced, late-stage disease (FIGO Stages III or IV) at the time of their initial clinical evaluation.[4] Most women in the region only seek medical evaluation when they experience severe, unmanageable symptoms, including persistent, malodorous vaginal discharge, profuse post-coital or post-menopausal bleeding, and intractable pelvic or lower abdominal pain.[4] By the time these symptoms emerge, the tumor has typically invaded the parametrium, extended to the pelvic sidewall, or caused hydronephrosis via ureteral compression.[4,24]

Fractured Care Continuums and Low Guideline Adherence

Even when a definitive diagnosis of invasive cervical carcinoma is achieved, the path to receiving evidence-based therapeutic intervention is broken. A comprehensive, multinational registry study evaluating oncology care across eight sub-Saharan African nations revealed a catastrophic failure in treatment guideline adherence.[25] The investigation concluded that only a dismal 5% of traced cervical cancer patients received optimal, guideline-adherent care.[25] Looking at the broader population-based cohort, anywhere from one-fifth to two-thirds of women with entirely curable or

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manageable disease never successfully accessed Cancer Directed Treatment (CDT), directly leading to highly compromised overall survival rates.[25]

The specific disconnects across the clinical care continuum are detailed in Table 4.[4,25,26]

Table 4: Clinical Continuum Gaps and Impacts on Patient Outcomes

Clinical Point of Care	Standard of Care Requirements	Status Quo in Sub-Saharan Africa (SSA)	Impact on Patient Outcomes
Diagnostic Workup	Advanced imaging (MRI, PET-CT) for accurate anatomical tumor staging.[4]	Only 43% of surveyed regional oncology centers have PET-CT access; staging is largely limited to clinical exams.[4]	Frequent under-staging of tumors, leading to inappropriate or ineffective treatment selections.[4]
Surgical Intervention	Radical hysterectomy + pelvic lymphadenectomy for early-stage disease (FIGO I-IIA).[26]	Severely limited by a lack of trained gynecologic oncologists outside capital cities.[26]	Patients with curable, localized disease progress to inoperable states while on long surgical waitlists.[26]
Radiotherapy Infrastructure	External Beam Radiotherapy (EBRT) combined with concurrent chemotherapy and intracavitary Brachytherapy.[25]	Severe shortages of linear accelerators. Only 13% of patients needing radiotherapy received critical brachytherapy boosts.[25]	Extremely high disease recurrence rates and poor long-term local tumor control.[25]
Care Coordination	Seamless, rapid progression from diagnostic biopsy to initial therapeutic session.[25]	Median delay between initial tissue diagnosis and the initiation of primary EBRT is 14 weeks, spanning up to 73 weeks.[25]	Upstaging of curable disease into advanced, terminal phases during prolonged periods of clinical delay.[25]

Sociocultural and Psychosocial Realities

The burden of cervical cancer extends far beyond physical pathology. In sub-Saharan Africa, the disease is deeply intertwined with sociocultural norms, gender dynamics, and severe psychological distress.

Health Literacy and Misinformation

Widespread deficiencies in health literacy present a major obstacle to effective cervical cancer control. Systematic qualitative reviews highlight that a lack of basic knowledge regarding the anatomical origin, viral causes, and asymptomatic nature of early cervical neoplasia is common across both urban and rural cohorts.[3] This information void is quickly filled by deep-seated cultural misconceptions and fatalistic beliefs. In many communities, cervical cancer symptoms are incorrectly attributed to traditional curses, witchcraft, divine retribution for moral transgressions, or the use of modern intra-uterine contraceptive devices.[19,27] These false beliefs breed deep mistrust of Western medical diagnostics, causing women to delay seeking medical attention for months or years while they consult traditional herbalists or spiritual healers.[19]

The Omnipresent Burden of Fear and Stigma

Fear is a defining characteristic of the psychosocial experience of cervical cancer in sub-Saharan Africa, affecting up to 66.7% of women diagnosed with the disease.[19] Quantitative assessments of health-related quality of life (HRQoL) show that over 60% of cervical cancer patients experience slight to severe clinical anxiety and deep depression.[19] This psychological distress is driven by a realistic fear of death, apprehension regarding painful treatments, and an acute dread of social rejection.[19,28]

Because the disease involves the female reproductive tract and is caused by a sexually transmitted virus, it carries an immense social stigma. Many women actively conceal their symptoms or avoid screening entirely out of fear that their husbands or communities will discover they have cancer.[19] This fear is well-founded: across many sub-Saharan cultures, a diagnosis of a reproductive malignancy can result in instant marital abandonment, loss of financial security, and total social isolation, rendering the woman a vulnerable outcast.[19,29]

The Imperative of Male Engagement

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The sociocultural fabric of many sub-Saharan African communities is deeply patriarchal, meaning men hold disproportionate authority over family finances and healthcare decisions.[22] Historically, cervical cancer public health campaigns have treated the disease strictly as a "woman's issue," largely ignoring men. This approach misses a critical lever for improving care.

The Strategic Value of Partner Inclusion: Involving men as active stakeholders leverages their financial and societal influence. It ensures the authorization of household emergency funds for transport to distant urban oncology clinics and mitigates the severe social isolation and spousal abandonment that frequently follows an oncological diagnosis.[22]

When men lack education regarding the causes and prevention of cervical cancer, they may refuse to allow their spouses to be examined by male healthcare workers, or they deny the household funds needed for screening and treatment.[22] Furthermore, clinical data shows that when women undergo intensive pelvic radiotherapy, medical protocols require strict periods of sexual abstinence to allow fragile tissues to heal. When male partners are excluded from counseling, they may refuse to adhere to these restrictions, forcing women to choose between physical injury and marital dissolution, which frequently leads to treatment default.[22] Involving men as essential stakeholders leverage their societal influence to drive equitable resource distribution, reduce stigma, and improve treatment adherence.[22]

Strategic Frameworks for Elimination: Path to 2030 and Beyond

To dismantle the systemic crisis of cervical cancer in sub-Saharan Africa, public health frameworks must move past fragmented, uncoordinated interventions. Progress requires an integrated approach aligned with the WHO's 90-70-90 global elimination strategy, which sets ambitious targets for countries to achieve by 2030 (Table 5).[30]

Table 5: WHO 90-70-90 Implementation Matrix

Strategic Pillar	Target Threshold	Target Population / Clinical Protocol	Intervention Scope
1. Primary Prevention	**90%**	Females aged 15 years of age or older	Full immunization coverage with prophylactic HPV vaccine.
2. Secondary Prevention	**70%**	Females aged 35 and 45 years	High-performance screening optimization via HPV DNA diagnostic testing.
3. Tertiary Intervention	**90%**	Females identified with pre-cancerous or invasive cervical pathology	Delivery of guideline-adherent clinical management and surgical/oncological therapeutic regimens.

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1. Scaling Primary Prevention via Universal HPV Vaccination

The most cost-effective, long-term intervention for sub-Saharan Africa is universal primary prevention via the HPV vaccine.[23] Historically, implementing national multi-dose vaccination campaigns has faced serious logistical bottlenecks, vaccine supply shortages, and high delivery costs. However, pioneering nations have demonstrated that elimination is achievable.

Rwanda serves as an exceptional blueprint for the subcontinent. Through aggressive political commitment, strong financial investments, and integration with school-based distribution networks, Rwanda became the first African nation to achieve near-universal HPV vaccination coverage among eligible young girls.[22,31] Furthermore, recent clinical data affirming the high efficacy of a single-dose HPV vaccine schedule offers a major operational advantage for the region, drastically reducing the logistical strains of tracking and securing multi-dose compliance.[32]

2. Transitioning to Decentralized High-Performance Screening

Sub-Saharan Africa must pivot away from opportunistic, cytology-based screening, which is too infrastructure-heavy for low-resource settings. The region needs a concerted shift toward decentralized primary HPV DNA testing, utilizing high-performance molecular assays that can run on existing laboratory platforms, such as the GeneXpert systems widely deployed across Africa for tuberculosis and HIV monitoring.[2] To bypass geographic and transport barriers, public health programs should widely adopt HPV self-sampling kits.

This approach allows women to collect their own samples in the privacy of their homes or local clinics, eliminating the need for an invasive speculum examination by a specialized physician, bypassing cultural modesty concerns, and dramatically scaling up screening access for rural populations.[3,33]

3. Implementing the "Screen-and-Treat" Clinical Paradigm

To fix broken care pathways and eliminate loss to follow-up, clinical guidelines must prioritize a simplified, low-resource "screen-and-treat" approach. When a woman screens positive for pre-cancerous lesions via visual inspection or molecular testing, clinicians should offer immediate, same-day treatment during the same clinical visit.

This is accomplished using portable, battery-powered ablative devices like thermal ablation or cryotherapy. By treating pre-cancerous lesions immediately at the primary healthcare level, health systems can prevent malignant progression and entirely bypass the complex chain of secondary appointments, pathology delays, and transport barriers that cause so many women to fall out of the care continuum.[2,34]

Strengths and Limitations of the Study

This systematic review features distinct methodological strengths, anchored by rigorous adherence to the PRISMA framework and the JBI Critical Appraisal Tool to minimize evaluation bias and protect internal validity. Restricting the search matrix to peer-reviewed studies from 2019 to 2025 successfully captures contemporary structural shifts and current clinical trials over outdated historical data. Analytically, the study effectively bridges the gap between macro-level registries and micro-level realities, utilizing localized community cohorts to expose the stark geographic disparities that national averages obscure. Conversely, the study is limited by the extreme clinical and logistical heterogeneity across the 234 regional cohorts, which precluded a formal meta-analysis with pooled effect sizes and mandated a descriptive synthesis. Restricting the search strategy exclusively to English-language publications also introduces language bias, risking the omission of vital epidemiological registries from Francophone and Lusophone African nations. Finally, uneven data reporting infrastructure across the subcontinent means the baseline preventative vacuum may be underrepresented in areas with scarcer tracking networks.

Implications of the Findings of the Study

Policy, Practice and Research Implications: Sub-Saharan Africa's high cervical cancer mortality reflects a failure of health systems policy rather than biomedical science, requiring ministries of health to replace opportunistic testing with legislated, population-level "call-and-recall" national registries to rescue screening coverage from its stagnant 14% to 20.9% baseline. Financially and logistically, policies must adopt universal single-dose HPV protocols and structurally co-locate cervical screenings within existing, well-funded national HIV care networks to directly confront the HIV-cervical cancer syndemic. At the clinical level, practice must shift from infrastructure-heavy cytology to decentralized primary HPV DNA testing via existing GeneXpert molecular platforms. Incorporating patient-driven HPV self-sampling kits paired with a single-visit "screen-and-treat" paradigm using portable thermal ablation will

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bypass rural transport barriers, cultural modesty concerns, and the fractured chains of follow-up care. Furthermore, clinical protocols must formally institutionalize male engagement in reproductive health counseling to mitigate the severe stigma and patriarchal financial gatekeeping that frequently drive treatment default. Finally, future research must pivot from descriptive epidemiology to rigorous implementation science, evaluating the operational scalability of rural self-sampling networks and digital mHealth tracking systems to safely navigate the 95% of patients currently failing to receive guideline-adherent care.

CONCLUSION

The devastating toll of cervical cancer among women in sub-Saharan Africa is an avoidable public health failure. The biomedical tools required to completely eliminate this disease such as highly effective prophylactic vaccines, rapid molecular diagnostics, and low-cost thermal ablation devices already exist. The persistent high mortality rates across the subcontinent do not reflect a lack of medical knowledge, but rather structural fractures in healthcare delivery, deep socioeconomic inequities, and a historical lack of political focus. Defeating this epidemic requires a unified approach. Sub-Saharan Africa governments must work closely with international health organizations, private stakeholders, and local communities to build sustainable financing models, strengthen primary care infrastructure, and deploy culturally resonant public health campaigns. By elevating cervical cancer control to a core national priority and actively engaging both women and men in prevention efforts, sub-Saharan Africa can protect its women, strengthen its health systems, and turn the vision of a cervical cancer-free future into reality.

Declarations

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