

**THE ROLE OF SOCIOECONOMIC STATUS IN ACCESS TO CANCER TREATMENT AND OUTCOMES IN NORTHERN NIGERIA**

**Mohammed S Suleiman<sup>1</sup>, Hussaini Ibn Mohammed<sup>1</sup>**

1. Department of Sociology, Faculty of Management and Social Sciences, Federal University, Gashua, Yobe State, Nigeria

**Corresponding Author:**

Suleiman, Mohammed Saeed Ph.D, Department of Sociology, Faculty of Management and Social Sciences, Federal University, Gashua, Yobe State.

[mohammedsaeedsuleiman@gmail.com](mailto:mohammedsaeedsuleiman@gmail.com), [mohammedsaeedsuleiman@fugashua.edu.ng](mailto:mohammedsaeedsuleiman@fugashua.edu.ng)

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**ABSTRACT**

**Background:** Cancer represents a significant public health challenge worldwide, with disparities in access to care and outcomes particularly pronounced in low-and-middle income countries. In Northern Nigeria, socioeconomic status (SES) serves as a critical determinant of access to cancer treatment and survival outcomes.

**Methods:** This study qualitatively explores the intricate relationship between SES and cancer care in the region, seeking to uncover nuanced perspectives and systemic barriers. Semi-structured interviews were conducted with a diverse group of stakeholders, including cancer patients, caregivers, healthcare providers, and policymakers, to understand their perspectives on barriers to treatment. Additionally, focus group discussions (FGDs) were held with community members to investigate the role of cultural beliefs, stigma, and gender dynamics in shaping attitudes toward cancer care. Thematic analysis was employed to identify recurring patterns and key themes, including financial barriers, inadequate healthcare infrastructure, and sociocultural influences.

**Results:** Preliminary findings revealed that low SES is associated with delayed diagnosis, reduced access to treatment facilities, and poor adherence to follow-up care. Participants emphasized the high out-of-pocket costs of treatment and the geographical inaccessibility of specialized oncology centres. Cultural beliefs and stigma, particularly around cancer as a “death sentence,” further discourage individuals from seeking timely medical intervention. Gender norms were also identified as a significant barrier, with women facing greater challenges in accessing care due to dependency on male decision-makers and financial providers.

**Conclusion:** This study underscores the urgent need for targeted interventions to address SES-related disparities in cancer care, including community education, subsidized treatment programs, and the decentralization of oncology services. By amplifying the voices of affected individuals and stakeholders, this research provides valuable insights for designing equitable cancer care policies and improving outcomes for underserved populations in Northern Nigeria.

**Keywords:** Cancer Treatment, Healthcare Disparities, Health Outcomes, Northern Nigeria, Socioeconomic Status

## INTRODUCTION

Cancer is a leading cause of morbidity and mortality worldwide, with low-and-middle income countries (LMICs) bearing a disproportionate share of the burden. According to the World Health Organization (WHO), approximately 70% of global cancer deaths occur in LMICs, where healthcare systems often lack the resources to provide adequate prevention, diagnosis, and treatment<sup>1</sup>. Northern Nigeria, a region characterized by widespread poverty and limited access to healthcare, exemplifies the challenges faced by underserved populations in addressing the growing cancer epidemic. Socioeconomic status (SES) plays a pivotal role in determining access to cancer care and shaping outcomes in this region, as financial constraints, sociocultural barriers, and infrastructural inadequacies converge to create profound disparities as noted by WHO (2020) that globally about 70% of global cancer deaths occur in LMICs.<sup>1</sup>

Northern Nigeria's health indicators consistently lag behind national averages, with the region reporting the highest levels of poverty, illiteracy, and maternal mortality in the country.<sup>2</sup> These factors contribute to a healthcare system that struggles to meet the demands of its population, particularly in specialized fields such as oncology. The limited number of cancer treatment facilities, coupled with high out-of-pocket healthcare costs, restricts access to care for low-income individuals. For many, the cost of transportation, consultations, diagnostic tests, and treatment is insurmountable, leading to delayed diagnoses and reduced survival rates.<sup>3</sup>

Beyond financial barriers, sociocultural dynamics further exacerbate inequities in

cancer care. Studies have shown that cultural beliefs and misconceptions about cancer, including the perception that it is a "death sentence," discourage individuals from seeking medical attention.<sup>4</sup> Gender norms also play a significant role in limiting access to care, particularly for women who often rely on male family members for financial and decision-making support.<sup>5</sup> This dependency can delay treatment or lead to complete abandonment of medical interventions.

The interplay between SES and healthcare access is evident in every stage of the cancer care continuum, from diagnosis to treatment and follow-up care. Patients from higher SES groups are more likely to have access to early diagnosis, comprehensive treatment, and follow-up services, leading to better outcomes. In contrast, those from lower SES backgrounds are often diagnosed at advanced stages of the disease, when treatment options are limited, expensive, and less effective.<sup>6</sup> This disparity underscores the urgent need for targeted interventions to reduce the SES-related inequities in cancer care in Northern Nigeria.

To address these challenges, this study adopts a qualitative approach to explore the experiences of patients, caregivers, and healthcare providers in navigating the cancer care system. By focusing on the lived realities of individuals affected by cancer, the research aims to uncover the systemic barriers that limit access to care and identify actionable strategies to promote equity. Through semi-structured interviews and focus group discussions, the study examines key themes such as financial barriers, cultural beliefs, gender dynamics, and healthcare infrastructure.

This research builds on existing literature while filling gaps in knowledge specific to Northern Nigeria. It contributes to the broader discourse on health equity in LMICs and provides valuable insights for policymakers, healthcare providers, and advocacy groups working to improve cancer outcomes in underserved regions. Addressing the role of SES in cancer care is not only a moral imperative but also a critical step toward achieving universal health coverage and reducing the global burden of cancer.

## Literature Review

### Socioeconomic Disparities in Cancer Care

Socioeconomic status (SES) encompasses factors such as income, education, occupation, and living conditions, all of which critically affect an individual's ability to access and utilize healthcare services.<sup>7</sup> In the context of cancer care, disparities in SES have consistently been linked to delays in diagnosis, limited access to treatment facilities, and poorer survival outcomes.<sup>8</sup> These challenges are particularly pronounced in low- and middle-income countries (LMICs) like Nigeria, where a significant proportion of the population lives below the poverty line.

Studies on healthcare in sub-Saharan Africa indicate that low-income patients face significant barriers to cancer care, including financial constraints, lack of transportation, and a shortage of trained healthcare professionals.<sup>9</sup> In Northern Nigeria, these barriers are exacerbated by high levels of poverty, geographic isolation, and limited healthcare infrastructure. For instance, reported that many cancer patients in the region are unable to access specialized oncology services, as these are primarily concentrated in urban centres. Out-of-pocket

expenses, which cover diagnostic tests, treatment, and follow-up care, further marginalize low-income populations who already struggle with basic healthcare needs.<sup>3</sup>

### Cultural and Gender-Based Barriers

Cultural beliefs and misconceptions about cancer significantly affect healthcare-seeking behaviour in Northern Nigeria. Commonly held views, such as associating cancer with spiritual causes or divine punishment, often discourage individuals from seeking medical care.<sup>4</sup> Stigma associated with cancer, particularly in rural areas, can lead to social isolation and reluctance to disclose a diagnosis. This stigma is more pronounced among women, who are not only more vulnerable to gender-based inequalities but also more likely to encounter delays in seeking care due to reliance on male decision-makers for financial and logistical support.<sup>5</sup>

### Healthcare System Deficiencies

The lack of adequate healthcare infrastructure further compounds SES-related disparities in Northern Nigeria. The region has a limited number of cancer treatment centers, most of which are under-equipped and understaffed. Okonofua *et al* highlighted that the region's oncologists and radiotherapy machines are insufficient to meet the growing demand for cancer care.<sup>6</sup> Moreover, while Nigeria's National Cancer Control Plan (NCCP) (2018–2022) aims to improve cancer prevention, diagnosis, and treatment, implementation has been slow, particularly in Northern Nigeria.<sup>10</sup>

## Theoretical Framework

### Social Determinants of Health (SDH) Framework

The Social Determinants of Health (SDH) framework, as defined by the World Health

Organization (WHO), posits that health outcomes are significantly influenced by the conditions in which individuals are born, grow, live, work, and age.<sup>11</sup> These conditions are shaped by the distribution of power, resources, and opportunities within societies. Applying the SDH framework to cancer care in Northern Nigeria allows for a comprehensive understanding of how socioeconomic inequalities, healthcare infrastructure, and cultural factors interact to influence access to care and outcomes.

### SDH Framework Application to Cancer Care in Northern Nigeria

The SDH framework provides a lens to analyze systemic barriers in cancer care and to propose actionable solutions for reducing disparities. Key determinants of health within this framework include economic stability, education, healthcare access, social and community context, and neighborhoods and physical environment. Each of these determinants plays a critical role in shaping cancer care in Northern Nigeria:

- **Economic Stability:** Economic challenges are the most significant barriers to accessing cancer care in Northern Nigeria. Poverty limits the ability of individuals to afford diagnostic tests, treatments, and palliative care, all of which are often paid for out-of-pocket.<sup>9</sup> The SDH framework highlights the need to address financial barriers by expanding social protection programs, such as subsidized healthcare services and insurance coverage, to make cancer care more affordable for low-income populations.
- **Educational Attainment:** Low literacy rates, particularly among women, contribute to poor health literacy and lack of awareness about cancer prevention and

treatment. According to Aliyu *et al*, educational programs that focus on improving cancer awareness and promoting early detection can significantly improve outcomes. Within the SDH framework, improving access to education is critical not only for increasing health literacy but also for empowering individuals to seek timely and appropriate care.<sup>5</sup>

- **Healthcare Access and Quality:** The SDH framework emphasizes the importance of equitable access to quality healthcare services. In Northern Nigeria, the concentration of oncology services in urban areas creates a geographic disparity that disproportionately affects rural populations. Patients in remote areas must travel long distances to access care, often incurring significant costs in the process.<sup>3</sup> The decentralization of oncology services and investment in regional cancer centres are critical steps to addressing these geographic inequities.
- **Social and Community Context:** The role of social support systems and community context is central to the SDH framework. In Northern Nigeria, strong community ties can facilitate health promotion and awareness campaigns, but cultural norms and stigma surrounding cancer can also act as barriers. Adebayo *et al* noted that addressing stigma through community-based interventions and leveraging local leaders to promote positive health messages can improve healthcare-seeking behaviour.<sup>4</sup>
- **Neighbourhood and Physical Environment:** Environmental factors, such as the availability of transportation and proximity to healthcare facilities, significantly affect access to cancer care. The SDH framework calls for investment

in infrastructure, including transportation systems, to reduce physical barriers to care. Improved connectivity between rural and urban areas can help bridge the gap in access to specialized cancer treatment.

### **Inter-sectionality within the SDH Framework**

The SDH framework is further enriched by incorporating the concept of inter-sectionality, which examines how overlapping social identities such as SES, gender, and geographic location compound health disparities.<sup>12</sup> In Northern Nigeria, women from low-income households in rural areas face multiple levels of disadvantage, as their gender, SES, and location interact to limit their access to care. Addressing these intersecting barriers requires tailored interventions that recognize and respond to the unique needs of these populations.

Thus, by applying the SDH framework to cancer care in Northern Nigeria, this study underscores the systemic nature of health inequities in the region. The framework not only identifies the social and economic drivers of disparities but also provides a roadmap for interventions that address these determinants holistically. Integrating the SDH framework into policy and practice can help create equitable healthcare systems and improve cancer outcomes for underserved populations in Northern Nigeria.

### **MATERIALS AND METHODS**

This study employs a qualitative research design to explore the relationship between socioeconomic status (SES) and access to cancer treatment in Northern Nigeria. The qualitative approach is particularly suited for this study as it allows for an in-depth understanding of the lived experiences of

individuals and the complex sociocultural and systemic barriers they face. The study integrates data from semi-structured interviews, focus group discussions (FGDs), and secondary data analysis to provide a comprehensive view of how SES influences cancer care in the region.

### **Study Design**

The study adopts a phenomenological approach to capture the lived experiences of patients, caregivers, and healthcare providers regarding access to cancer care. Phenomenology is particularly suitable for this research because it seeks to understand how people perceive and make meaning of their experiences, and it allows for a deeper insight into the social and economic barriers that shape cancer access and health outcomes in the region. Therefore, this design facilitates an exploration of the ways in which financial, cultural, and systemic factors intersect to influence healthcare-seeking behaviour, treatment access, and outcomes.

### **Study Area and Population**

The study was conducted in Northern Nigeria, a region characterized by high poverty rates, low literacy levels, and limited healthcare infrastructure. The target population included:

- **Cancer Patients:** Individuals diagnosed with various types of cancer, including those undergoing treatment and those who have discontinued care due to financial or logistical constraints.
- **Caregivers:** Family members or close associates who provide support to cancer patients.
- **Healthcare Providers:** Oncologists, nurses, and other healthcare workers

involved in cancer diagnosis, treatment, and follow-up care.

- Policymakers and Community Leaders: Individuals with knowledge of healthcare policies and community dynamics influencing cancer care.

### Sampling Strategy

A purposive sampling method was used to ensure the inclusion of diverse perspectives and experiences. Participants were selected based on the following criteria:

- Patients: Diagnosed with cancer within the last five years and residing in Northern Nigeria.
- Caregivers: Directly involved in the care of a cancer patient for at least six months.
- Healthcare Providers: Employed in oncology or related fields and working in either public or private facilities in the region.
- Policymakers/Community Leaders: Engaged in health policy or community health advocacy.

The sample size consisted of:

- 30 cancer patients, stratified by gender, SES, and rural/urban residence.
- 15 caregivers.
- 10 healthcare providers.
- 5 policymakers or community leaders.

### Data Collection Methods

- Semi-Structured Interviews: Interviews were conducted with cancer patients, caregivers, healthcare providers, and policymakers to explore individual and institutional perspectives on barriers to cancer care. An interview guide was developed based on themes identified in the literature review, including financial constraints, cultural beliefs, and healthcare system challenges.

- Focus Group Discussions (FGDs): FGDs were held with community members to gather insights into collective beliefs, attitudes, and experiences related to cancer care. Each group consisted of 8–10 participants, and discussions were facilitated using a standardized guide.
- Document Review: Secondary data, including health records, cancer registries, and policy documents (e.g., Nigeria's National Cancer Control Plan), were analysed to contextualize findings and triangulate qualitative data.
- Field Observations: Observations were conducted at oncology centers to document patient-provider interactions, infrastructural conditions, and administrative processes that might influence access to care.

### Data Analysis

Thematic analysis was used to identify patterns and themes from the qualitative data. The analysis followed these steps:

- Transcription: Audio-recorded interviews and FGDs were transcribed verbatim.
- Coding: Transcripts were coded using NVivo software, with initial codes derived from the literature review and SDH framework.
- Thematic Development: Codes were grouped into broader themes, including financial barriers, gender dynamics, and healthcare accessibility.
- Triangulation: Findings from interviews, FGDs, and secondary data were compared to ensure consistency and validity.

### Ethical Considerations

The study adhered to ethical guidelines to ensure the rights and well-being of participants. Key considerations included:

- **Informed Consent:** Participants were provided with detailed information about the study and signed consent forms before participation.
- **Confidentiality:** All data were anonymized, and identifying information was securely stored.
- **Voluntary Participation:** Participants were informed of their right to withdraw from the study at any time without penalty.
- **Ethical Approval:** Approval was obtained from a recognized institutional review board (IRB) and relevant local health authorities in Northern Nigeria.

## RESULTS

The findings of this study are organized around four major themes identified through thematic analysis: financial barriers, sociocultural influences, healthcare infrastructure, and systemic challenges. These themes illuminate the complex interplay of socioeconomic status (SES) and access to cancer care in Northern Nigeria.

### 1. Financial Barriers

A significant majority of participants identified financial constraints as the primary barrier to accessing cancer care.

- **Out-of-Pocket Expenses:** Cancer patients and their caregivers emphasized the high costs associated with diagnosis, treatment, and follow-up care. Many patients were unable to afford essential services such as biopsies, chemotherapy, and radiotherapy. A 45-year-old female breast cancer patient stated: *"I had to sell my farmland to pay for my first two sessions of chemotherapy, but now I have nothing left. I can't continue the treatment."*

- **Transportation Costs:** For rural patients, the cost of traveling to urban oncology centres was prohibitive. Some caregivers reported spending more on transportation than on the treatment itself.
- **Income Loss:** Caregivers and patients reported significant income losses due to the time spent accessing and managing treatment. A male caregiver shared: *"I had to leave my job to bring my wife to the hospital. Now we depend on relatives for survival."*

### 2. Sociocultural Influences

Cultural beliefs and practices emerged as critical factors influencing healthcare-seeking behaviour and treatment adherence.

- **Stigma and Misconceptions:** Many patients cited stigma as a reason for delaying diagnosis or avoiding treatment. Cancer was often perceived as a "death sentence" or a punishment for sins. A participant in a focus group discussion stated: *"In my village, people say cancer is a curse. They avoid you because they think it's contagious."*
- **Gender Inequalities:** Women faced additional barriers due to gender norms and dependency on male decision-makers for financial and logistical support. One healthcare provider noted: *"Some women cannot even discuss their health problems with their husbands. They come to us only when the cancer has advanced."*
- **Preference for Traditional Medicine:** Participants reported widespread reliance on traditional healers due to cultural familiarity and lower costs. This often led to delays in seeking medical care.

### 3. Healthcare Infrastructure

The limited availability of oncology services in Northern Nigeria significantly impeded access to care.

- **Geographic Inequities:** Specialized cancer treatment facilities were concentrated in urban centres, leaving rural populations underserved. Patients from rural areas described travelling for hours or even days to access treatment.
- **Shortage of Healthcare Professionals:** Healthcare providers noted a lack of trained oncologists, radiotherapists, and nurses. One provider mentioned: *"We have only one oncologist in this hospital, and the workload is overwhelming. Patients wait for months to start treatment."*
- **Inadequate Resources:** Oncology centres lacked essential equipment, such as radiotherapy machines, and many patients experienced treatment delays due to equipment breakdowns.

#### Systemic Challenges

Participants highlighted broader systemic issues that exacerbated disparities in cancer care.

**Policy Gaps:** Policymakers acknowledged the slow implementation of Nigeria's National Cancer Control Plan (NCCP).<sup>10</sup> A senior health official stated:

*"The plan exists, but funding and coordination are inadequate. Rural areas are completely neglected."*

**Health Insurance Coverage:** The National Health Insurance Scheme (NHIS) was reported to cover only a small fraction of cancer-related costs. Patients noted that many essential treatments were excluded from the scheme.

**Data Gaps:** The lack of comprehensive cancer registries made it difficult to track disease prevalence and outcomes, hampering effective policy formulation.

#### Emergent Sub-Themes

It is worth noting that beyond the primary themes, two significant emergent sub-themes further illuminate the impact of cancer and the challenges faced by individuals in the region and highlighted below:

- **Psychosocial Burden:** Patients and caregivers reported experiencing significant emotional stress, including fear, anxiety, and depression, due to the dual burden of cancer and financial hardship.
- **Community Support:** While some patients benefited from community support, others faced social isolation and rejection due to cancer-related stigma.

#### Summary of Key Findings

- Financial barriers were the most significant challenge, affecting access to diagnosis, treatment, and follow-up care.
- Sociocultural influences, including stigma, gender norms, and reliance on traditional medicine, delayed healthcare-seeking behavior.
- Healthcare infrastructure in Northern Nigeria was inadequate, with significant gaps in the availability of specialized facilities, trained personnel, and equipment.
- Systemic challenges, such as insufficient policy implementation and limited health insurance coverage, further compounded disparities.

These results underscore the urgent need for targeted interventions to address SES-related disparities in cancer care in Northern Nigeria.

## DISCUSSION

The findings of this study reveal a complex interplay of socioeconomic, cultural, and systemic factors that shape access to cancer care and outcomes in Northern Nigeria. Financial barriers, sociocultural influences, and inadequacies in healthcare infrastructure emerged as dominant themes, providing critical insights into the structural inequities faced by cancer patients in the region. This discussion situates the results within the broader context of global health disparities and highlights opportunities for intervention to address these challenges.

### 1. Financial Barriers and Economic Determinants of Health

The financial burden of cancer care is a universal challenge, but its impact is particularly acute in low-income settings like Northern Nigeria, where out-of-pocket healthcare expenditures are the norm. This study found that the costs of diagnostic tests, treatment, and transportation often exceed patients' financial capacity, leading to delays or abandonment of care. These findings align with global research indicating that low-income individuals are less likely to access timely cancer treatment and are more likely to experience poor outcomes.<sup>8</sup>

Policy efforts to expand financial protection mechanisms, such as health insurance, have been insufficient. While Nigeria's National Health Insurance Scheme (NHIS) covers some aspects of cancer care, it remains inaccessible to most low-income households and excludes many essential treatments.<sup>6</sup> Subsidized treatment programs and targeted financial assistance for vulnerable populations are urgently needed to address these economic barriers.

### 2. Sociocultural Influences on Healthcare-Seeking Behaviour

Cultural beliefs, stigma, and gender norms were found to significantly influence healthcare-seeking behaviour and adherence to treatment. Misconceptions about cancer as a spiritual curse or an incurable disease discourage individuals from seeking medical care, consistent with findings from other studies in sub-Saharan Africa.<sup>4</sup>

Gender disparities further exacerbate these challenges. Women, particularly in rural areas, face additional barriers due to societal norms that limit their autonomy and decision-making power. These findings are supported by Aliyu *et al.* who observed that women in Northern Nigeria are more likely to present with advanced-stage cancers due to delays in obtaining male approval for medical consultations.<sup>5</sup>

Interventions that address these sociocultural barriers are essential. Community-based awareness campaigns, led by trusted local leaders, can help dispel myths about cancer and promote early detection. Gender-sensitive policies that empower women to access healthcare independently are also critical for improving cancer outcomes.

### 3. Healthcare Infrastructure and Geographic Inequities

The findings highlight severe deficiencies in healthcare infrastructure, including the limited number of oncology centres, shortages of trained professionals, and inadequate medical equipment. These challenges disproportionately affect rural populations, who must travel long distances to access care. This geographic inequity is a well-documented issue in global health, with rural populations often experiencing higher

mortality rates due to delayed diagnosis and treatment.<sup>9</sup>

To address these disparities, decentralization of cancer care services is critical. Establishing regional cancer treatment centres in underserved areas and training healthcare professionals in oncology can significantly improve access. Additionally, investments in telemedicine and mobile health initiatives could help bridge the gap for rural populations.

#### 4. Systemic Challenges and Policy Gaps

Systemic issues, including inadequate implementation of Nigeria's National Cancer Control Plan (NCCP) and insufficient health data, further hinder efforts to address cancer disparities. Policymakers acknowledged that funding constraints and lack of coordination have limited the effectiveness of the NCCP. This reflects broader challenges in LMICs, where ambitious health policies often fail due to weak health systems and resource constraints.<sup>3</sup>

Strengthening health system governance, ensuring sustained funding for cancer programs, and improving data collection through comprehensive cancer registries are essential steps for bridging these gaps. Accurate data on cancer incidence, mortality, and treatment outcomes can inform evidence-based policy decisions and improve resource allocation.

#### 5. Psychosocial and Emotional Burden

The psychosocial burden of cancer was a recurring theme in this study, with patients and caregivers reporting high levels of stress, anxiety, and depression. These findings underscore the need for integrated psychosocial support services within cancer

care programs. Support groups, counselling services, and mental health interventions can help mitigate the emotional toll of cancer and improve treatment adherence.

#### 6. Theoretical Implications: Social Determinants of Health Framework

The results of this study align with the Social Determinants of Health (SDH) framework, which emphasizes the role of economic, social, and environmental factors in shaping health outcomes.

- **Economic Stability:** Financial constraints were the most significant determinant of access to cancer care, highlighting the need for economic interventions.
- **Education:** Low health literacy, particularly among women, contributed to delays in seeking care, underscoring the importance of educational programs.
- **Healthcare Access:** Geographic inequities in the availability of oncology services reflect systemic failings in healthcare infrastructure.
- **Cultural and Social Context:** Stigma and gender norms created additional barriers, emphasizing the need for culturally sensitive interventions.

By applying the SDH framework, this study provides a holistic understanding of the barriers to cancer care in Northern Nigeria and highlights the Intersectionality of SES, gender, and geography in shaping health disparities.

#### Policy and Practice Implications

- **Expand Financial Protections:** Implement subsidized cancer care programs and extend health insurance coverage to include comprehensive cancer services.
- **Decentralize Oncology Services:** Establish regional cancer centers and

invest in training healthcare professionals in underserved areas.

- **Promote Community-Based Awareness:** Leverage local leaders and culturally appropriate messaging to dispel myths and encourage early detection.
- **Empower Women:** Introduce gender-sensitive policies that enhance women's access to healthcare and decision-making autonomy.
- **Strengthen Data Systems:** Develop robust cancer registries to inform evidence-based policy and monitor progress in addressing disparities.

### **Limitations and Future Research**

While this study provides valuable insights, its qualitative design limits generalizability. Future research should include quantitative analyses to measure the extent of SES-related disparities in cancer care. Longitudinal studies could also explore the impact of targeted interventions over time.

### **CONCLUSION**

This study highlights the profound impact of socioeconomic, cultural, and systemic factors on access to cancer care in Northern Nigeria. By addressing financial, infrastructural, and sociocultural barriers, policymakers and healthcare providers can reduce disparities and improve cancer outcomes for underserved populations. The findings underscore the urgency of implementing equity-focused interventions to ensure that no patient is left behind in the fight against cancer.

The study also explored the role of socioeconomic status (SES) in shaping access to cancer treatment and outcomes in Northern Nigeria, uncovering significant disparities rooted in financial, cultural, and

systemic barriers. The findings demonstrate that financial constraints are the most critical obstacle to timely diagnosis and treatment, with out-of-pocket costs placing cancer care beyond the reach of many low-income patients. Sociocultural factors, including stigma, misconceptions, and gender norms, further delay healthcare-seeking behaviour and treatment adherence. Additionally, inadequate healthcare infrastructure and systemic challenges, such as the uneven implementation of the National Cancer Control Plan (NCCP), exacerbate inequities in care, particularly for rural and low-income populations.

The study highlights the need for a multi-faceted approach to address these barriers, emphasizing the importance of financial protections, decentralized healthcare services, culturally sensitive interventions, and robust policy implementation. By tackling the social determinants of health that underpin cancer disparities, stakeholders can create a more equitable healthcare system and improve outcomes for underserved populations in Northern Nigeria.

### **Limitations**

- **Self-Reporting Bias:** Participants' accounts may be influenced by their subjective experiences or recall limitations.
- **Geographic Scope:** The study was limited to specific regions in Northern Nigeria, which may not fully represent the diversity of the entire region.
- **Sample Size:** While sufficient for qualitative analysis, the relatively small sample size limits the generalizability of findings.

Thus, while these limitations exist, the rich in-depth qualitative data gathered provides crucial insights into the complex challenges faced by cancer patients in Northern Nigeria, laying a vital foundation for future and broader investigations. To this end, this methodology integrates qualitative and secondary data analysis to provide a nuanced understanding of the role of SES in cancer care in Northern Nigeria. By centering the voices of patients and stakeholders, this approach aims to generate actionable insights that can inform policy and practice, ultimately reducing disparities in cancer outcomes.

## RECOMMENDATIONS

Based on the findings of this study, the following recommendations are proposed:

### 1. Financial Protections

- **Subsidized Cancer Treatment:** Implement government-funded programs to cover diagnostic tests, treatment, and follow-up care for low-income patients.
- **Expand Health Insurance:** Extend the coverage of Nigeria's National Health Insurance Scheme (NHIS) to include comprehensive cancer care, ensuring that low-income populations can access essential services.
- **Financial Assistance Programs:** Establish patient assistance funds or grants to support families facing catastrophic health expenditures due to cancer.

### 2. Decentralized Oncology Services

- **Regional Cancer Centres:** Develop additional oncology centers in rural and underserved areas to reduce geographic disparities in access to care.
- **Mobile Health Clinics:** Introduce mobile cancer screening and diagnostic services to reach remote communities.

- **Training Programs:** Invest in training healthcare providers, including general practitioners and nurses, in basic oncology care to expand the healthcare workforce.

### 3. Community Awareness and Education

- **Awareness Campaigns:** Conduct culturally appropriate education campaigns to dispel myths about cancer and promote the importance of early detection and treatment.
- **Engage Local Leaders:** Partner with community leaders and religious institutions to reduce stigma and encourage positive health-seeking behaviors.
- **Health Literacy Programs:** Develop targeted educational materials for low-literacy populations, focusing on cancer prevention, symptoms, and available treatment options.

### 4. Gender-Sensitive Interventions

- **Empower Women:** Introduce policies that enhance women's autonomy in healthcare decision-making, such as providing financial support directly to female patients.
- **Support Groups:** Establish peer support networks for women with cancer to reduce stigma and provide emotional and informational support.
- **Integrated Services:** Combine cancer care with other maternal and reproductive health services to improve access for women.

### 5. Strengthen Health Policy and Governance

- **Implement the NCCP:** Ensure full implementation of the National Cancer Control Plan (2018–2022) with a focus on rural and low-income populations.

- Increase Funding: Allocate additional resources to cancer care programs, prioritizing underserved regions.
- Develop Cancer Registries: Create comprehensive cancer registries to track disease prevalence, treatment outcomes, and disparities, enabling data-driven decision-making.

## 6. Psychosocial Support

- Counselling Services: Integrate mental health support into oncology programs to address the psychosocial burden of cancer.
- Support Networks: Facilitate patient and caregiver support groups to reduce isolation and promote treatment adherence.

## Future Directions

- Research: Conduct longitudinal studies to evaluate the long-term impact of interventions aimed at reducing SES-related disparities in cancer care.
- Monitoring and Evaluation: Develop robust frameworks to assess the effectiveness of policies and programs, ensuring continuous improvement.
- Public-Private Partnerships: Encourage collaborations between government, non-governmental organizations (NGOs), and private sector stakeholders to mobilize resources and scale up successful initiatives.

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