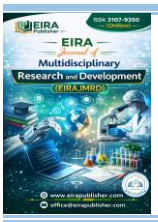

EIRA Journal of Multidisciplinary Research and Development (EIRAJMRD)
Journal homepage: https://eirapublisher.com/eirajmrd/
Email: office.eirapublisher@gmail.com
ISSN: 3107-9350 (Online)
Volume 2, Issue 2, (March-April) 2026
DOI: https://doi.org/10.5281/zenodo.19327944

Assessment of the Influence of Public Health Campaigns on Childhood Cancer Awareness and Mortality Reduction in Abuja

Adekanye Oluwakemi Sharifah[1], Umar Kari[2] & Ibrahim Musa[3]

[1]*Sustainable Development Center, University of Abuja*
[2]*Department of Sociology, University of Abuja*
[3]*Department of Economics, University of Abuja*

Article history:
Received: 09/02/2026
Accepted: 20/03/2026
Published: 30/03/2026

Keywords: *Childhood Cancer, Public Health Campaigns, Awareness and Mortality Reduction.*

***Corresponding Author**:
Adekanye Oluwakemi Sharifah

Abstract **Original Research Article**

This study evaluates the influence of public health campaigns on childhood cancer awareness and mortality reduction in Abuja, Nigeria, using an explanatory sequential mixed-methods design. Quantitative data from 358 valid survey responses were integrated with qualitative insights from fifteen key informant interviews with pediatric oncology specialists. Findings reveal a high general awareness of childhood cancer (86.5%) among the predominantly tertiary-educated, urban population in the Federal Capital Territory. However, significant gaps persist in recognizing specific early warning signs, such as leukocoria (8.3%), and nearly 20% of respondents could not identify any symptoms. While 64.7% of participants perceived campaigns as effective in promoting early detection, over half (51.8%) reported no direct exposure to such initiatives. Major barriers to timely health-seeking include severe financial constraints (77.6%), fear of stigmatization (51.9%), and cultural beliefs (43.0%). Clinicians emphasized that while campaigns improve general knowledge, catastrophic out-of-pocket costs remain the primary driver of mortality through treatment abandonment. The study concludes that awareness alone is insufficient; reducing childhood cancer mortality in Abuja requires integrated strategies that combine targeted education with financial protection and strengthened referral systems.

How to cite this article: Adekanye Oluwakemi Sharifah, Umar Kari, & Ibrahim Musa. (2026). Assessment of the influence of public health campaigns on childhood cancer awareness and mortality reduction in Abuja. EIRA Journal of Multidisciplinary Research and Development (EIRAJMRD), 2(2). 62- 80

Introduction

Childhood cancer represents a significant global public health concern, accounting for a considerable burden of morbidity and mortality among children, particularly in low- and middle-income countries. According to the World Health Organization, cancer is one of the leading causes of death among children and adolescents worldwide, with survival rates exceeding 80% in high-income countries but remaining below 30% in many developing nations (World Health Organization [WHO], 2021). This disparity is largely attributed to late diagnosis, limited access to treatment, and inadequate awareness among caregivers and communities (Magaji & Ismail, 2025). In Nigeria, childhood cancer outcomes remain poor due to similar structural and informational challenges, underscoring the need for improved public health interventions (Akinyemiju et al., 2020).

Public health campaigns have emerged as a critical strategy in addressing health-related knowledge gaps and promoting early detection of diseases (Isamail et al., 2024; Ijoko et al., 2021). These campaigns utilize mass media, community outreach, and institutional engagement to disseminate vital health information, influence attitudes, and encourage preventive behaviors. The United Nations Children's Fund emphasizes that effective health communication strategies can significantly enhance awareness and behavioral change, particularly in vulnerable populations (UNICEF, 2020). In the context of childhood cancer, public health campaigns can educate parents and caregivers about early warning signs, thereby facilitating timely medical intervention.

Awareness of childhood cancer symptoms is a key determinant of early diagnosis and improved survival outcomes. Symptoms such as persistent fever, unexplained weight loss, swelling, and fatigue are often overlooked or

misattributed to common illnesses in many Nigerian communities. Studies have shown that low levels of awareness contribute significantly to delayed presentation at healthcare facilities, which in turn leads to advanced-stage diagnoses and reduced chances of survival (Eze et al., 2019). Consequently, increasing public knowledge through targeted campaigns is essential for bridging the awareness gap and improving health-seeking behaviors.

In Abuja, the Federal Capital Territory of Nigeria, the burden of childhood cancer is compounded by urban-rural disparities, socio-economic inequalities, and limited access to specialized healthcare services. Despite being one of the most developed regions in Nigeria, many residents still lack adequate information about childhood cancer and the importance of early detection. Public health campaigns conducted by governmental and non-governmental organizations have attempted to address these issues; however, the extent of their effectiveness in raising awareness and reducing mortality remains insufficiently explored. This creates a gap in empirical knowledge that this study seeks to address.

Furthermore, the success of public health campaigns depends on several factors, including message clarity, cultural relevance, frequency of dissemination, and accessibility to healthcare services (Magaji et al., 2022). The National Cancer Institute highlights that sustained and well-structured awareness programs can significantly improve early diagnosis and treatment outcomes (National Cancer Institute, 2022). In Nigeria, however, challenges such as limited funding, inadequate infrastructure, and low literacy levels may hinder the effectiveness of these campaigns. Understanding how these factors influence campaign outcomes is crucial for designing more impactful interventions.

Against this backdrop, this study aims to assess the influence of public health campaigns on childhood cancer awareness and mortality reduction in Abuja. By examining the relationship between campaign exposure, awareness levels, and health outcomes, the research seeks to provide evidence-based insights that can inform policy formulation and public health strategies. Ultimately, the study contributes to ongoing efforts to improve child health outcomes and aligns with global initiatives aimed at reducing childhood cancer mortality through enhanced awareness and early detection.

Literature Review and Theoretical Framework

Conceptual Review

Public Health Campaigns

Public health campaigns refer to organized efforts designed to inform, educate, and influence the health behaviors of populations through strategic communication and community engagement. These campaigns typically employ multiple channels such as mass media, social media, schools, and healthcare institutions to disseminate information aimed at preventing diseases and promoting early detection. According to the World Health Organization, effective public health campaigns are evidence-based, culturally sensitive, and sustained over time to achieve measurable health outcomes (WHO, 2021). In developing countries like Nigeria, such campaigns play a vital role in addressing knowledge gaps and misconceptions about diseases, particularly those that require early diagnosis, such as cancer. However, their effectiveness often depends on factors such as funding, accessibility, literacy levels, and community participation (Wakefield et al., 2010; Bello et al., 2025; Hafizu et al., 2025a; 2025b).

Childhood Cancer Awareness

Childhood cancer awareness involves the level of knowledge and understanding that individuals, especially parents and caregivers, have regarding the signs, symptoms, risk factors, and treatment options of cancers affecting children. Increasing awareness is crucial because early recognition of symptoms such as persistent fever, unusual swelling, or unexplained weight loss can significantly improve the chances of timely diagnosis and treatment. The United Nations Children's Fund emphasizes that awareness initiatives targeting caregivers can lead to improved health-seeking behavior and earlier presentation at healthcare facilities (UNICEF, 2020). In Nigeria, low levels of awareness have been identified as a major contributor to late-stage diagnosis and poor survival outcomes among children with cancer (Eze et al., 2019). Therefore, enhancing awareness through education and community outreach remains a critical strategy for improving childhood cancer outcomes.

Mortality Reduction

Mortality reduction refers to the decrease in the number of deaths caused by a particular disease or health condition within a specified population and time frame (Magaji et al., 2025a; 2025b). In the context of childhood cancer, mortality reduction is closely linked to early detection, access to quality healthcare, and effective treatment protocols. The National Cancer Institute notes that survival rates for childhood cancers can be significantly improved when cases are diagnosed early and managed with appropriate medical interventions (National Cancer Institute, 2022). In low- and middle-income countries, efforts to reduce mortality are often challenged by inadequate healthcare infrastructure, delayed diagnosis, and limited availability of specialized care. Consequently, integrated strategies that combine public health campaigns, improved healthcare systems, and policy support are essential for achieving meaningful reductions in childhood cancer mortality (Gupta et al., 2014).

Theoretical Framework

The Health Belief Model

Health Belief Model (HBM) explains how individual beliefs and perceptions influence health-related behaviors,

particularly in response to public health interventions. The HBM posits that people are more likely to take preventive health actions such as seeking early diagnosis for childhood cancer if they perceive themselves or their children to be susceptible to the disease (perceived susceptibility), believe the condition has serious consequences (perceived severity), recognize the benefits of taking action (perceived benefits), and perceive minimal barriers to accessing care (perceived barriers). Public health campaigns play a critical role within this framework by shaping these perceptions through awareness creation, education, and cues to action, such as media messages or community outreach programs. According to the World Health Organization, behavior change communication strategies grounded in theoretical models like the HBM are more effective in improving early health-seeking behaviors and reducing disease burden (WHO, 2021). In the context of childhood cancer in Abuja, the HBM is particularly relevant as it helps explain how increased awareness through campaigns can influence caregivers' decisions to seek timely medical attention, thereby contributing to reduced mortality (Rosenstock et al., 1988).

Empirical Review

Githanga et al. (2020) conducted a cross-sectional, hospital-based study in Kenya involving caregivers and healthcare professionals to investigate delays in diagnosing childhood cancer. Their findings indicated that inadequate awareness, frequent misdiagnosis at the primary healthcare level, and delays in referral systems were key factors contributing to late presentation. Although the authors suggested the implementation of awareness campaigns as a potential solution, they did not empirically assess their effectiveness. Therefore, the current study extends this line of inquiry by quantitatively examining exposure to public health campaigns and evaluating their perceived impact on early detection behaviours within the Federal Capital Territory (FCT).

In a related study in Ghana, Adam et al. (2018) utilized a descriptive survey approach to evaluate caregivers' knowledge of childhood cancer symptoms and healthcare-seeking pathways. The results showed that a significant proportion of caregivers initially resorted to non-medical treatment options due to poor awareness and deeply rooted cultural beliefs, a finding consistent with Mostert et al. (2011). While the study underscored the importance of public education, it did not specifically investigate the role or effectiveness of structured public health campaigns. This gap highlights the importance of studies like the present one, which focuses explicitly on evaluating the impact of organized awareness campaigns.

Geel et al. (2021) examined the incorporation of cancer education into national health booklets in South Africa as a strategy to reduce delays in diagnosis. Their descriptive analysis demonstrated that "Early Warning Signs" campaigns were associated with better adherence to treatment protocols. However, they also observed that the outcomes of such initiatives varied depending on socioeconomic conditions. This finding emphasizes the relevance of the present study, which considers the diverse socioeconomic and demographic characteristics of Abuja to determine whether similar print-based or educational interventions could be effective in the Nigerian context.

Amo-Antwi et al. (2020) employed qualitative interviews with caregivers in Ghana to explore barriers to early diagnosis of childhood cancer. Their study revealed that spiritual interpretations and beliefs about cancer symptoms significantly contributed to delays in seeking medical care. Although their research provided in-depth insights, it was limited by its qualitative nature. In contrast, the present study adopts a mixed-methods approach, enabling the quantification of such beliefs among parents in the FCT while also incorporating perspectives from healthcare professionals to better understand the clinical implications.

Knaul et al. (2019) used a longitudinal analytical framework to examine the economic burden of childhood cancer in Mexico and other low- and middle-income countries. Their findings indicated that even in contexts where awareness levels are relatively high, the financial strain associated with treatment often leads to abandonment of care and increased mortality rates. This insight is particularly relevant to the current study, as it provides a basis for assessing how economic constraints in Abuja may limit the effectiveness of public health campaigns in reducing childhood cancer mortality.

Similarly, hospital-based registry studies in Kenya have consistently reported poor survival outcomes for childhood cancer, largely due to late-stage presentation, especially in settings where oncology services are concentrated in urban referral centers (Githanga et al., 2020; Stefan et al., 2021). These findings underscore the importance of geographic accessibility and the decentralization of healthcare services in improving outcomes. Consequently, the present study focuses on selected Area Councils within the FCT, such as Abaji and Kwali, to evaluate whether proximity to healthcare facilities influences exposure to public health campaigns and the likelihood of early detection.

Research Gap

A critical review of the existing empirical literature reveals several gaps that justify the present study. While studies conducted in Kenya (Githanga et al., 2020) and Ghana (Adam et al., 2018; Amo-Antwi et al., 2020) consistently identify low awareness, cultural beliefs, and delayed health-seeking behaviour as major contributors to late diagnosis of childhood cancer, they largely recommend public health campaigns without empirically assessing their effectiveness. Similarly, Geel et al. (2021) examined awareness interventions such as educational booklets but focused primarily on treatment adherence rather than directly linking campaign exposure to

early detection outcomes. Furthermore, Knaul et al. (2019) highlighted the role of economic barriers in influencing mortality but did not integrate this with awareness-based interventions. In addition, existing studies are predominantly either qualitative or descriptive, limiting their ability to quantify the relationship between awareness initiatives and behavioural outcomes. There is also a contextual gap, as most of these studies were conducted outside Nigeria, with little attention to the unique socio-economic and geographic dynamics of Abuja, particularly across different Area Councils. Therefore, this study addresses these gaps by adopting a mixed-methods approach to empirically examine the influence of public health campaigns on childhood cancer awareness and mortality reduction in the Federal Capital Territory, while also considering socio-economic and geographic factors that may affect campaign effectiveness.

Methodology

Research Design

This study adopted a mixed-methods research design; specifically an explanatory sequential approach, in which quantitative findings are collected and analysed first, followed by qualitative inquiry to explain or elaborate on those results (Creswell & Plano Clark, 2018). The design was selected to provide a comprehensive understanding of the research problem by combining the breadth of quantitative data with the depth of qualitative insights.

The quantitative component used a cross-sectional survey to gather standardized data from a diverse sample of parents, caregivers, and community members. This phase focused on measuring awareness levels, patterns of campaign exposure, and health-seeking behaviours. By analyzing these numerical data, the study identified measurable trends and correlations that highlight the reach of public health initiatives within the FCT.

Findings from the quantitative phase informed the development of interview questions used in the qualitative phase. The qualitative phase consisted of semi-structured interviews conducted exclusively with medical practitioners, such as pediatric oncologists, oncology pharmacists and senior residents. This expert-level inquiry explains the statistical outcomes of the survey from a clinical perspective, offering expert perspectives on how awareness levels influence patterns of hospital presentation and treatment outcomes.

A significant ethical and practical consideration in this design was the decision to limit caregiver participation to quantitative questionnaires only. Because childhood cancer is a sensitive health issue, in-depth qualitative interviews may require families to relive emotionally traumatic experiences, posing an unnecessary psychological burden. Therefore, structured questionnaires allow caregivers to provide critical information in a less intrusive, anonymous manner. This strategic exclusion of caregivers from the qualitative phase acknowledges their 'relational vulnerability' and ensures that data collection does not exacerbate the psychological and logistical strain already faced by families (Patton 2015).

This design is appropriate because quantitative data alone cannot explain why awareness gains do or do not translate into timely clinical presentation, making qualitative clinical interpretation necessary. Ultimately, integrating both methods ensures that findings are grounded in population-level evidence while informed by clinical perspectives.

Population of the Study

The population for this study comprised residents and professionals within the Federal Capital Territory (FCT), Abuja, Nigeria. As the administrative capital, the FCT provides a demographically diverse population consisting of individuals from varied ethnic, religious, educational, and socio-economic backgrounds. This diversity makes the territory suitable for assessing how public health campaigns resonate across different social strata and influence health-seeking behaviours.

To enable comprehensive understanding of the awareness landscape, the study considered four key stakeholder groups involved in childhood cancer awareness and care. This multi-perspective approach allowed triangulation of data from campaign targets, healthcare providers, and advocacy actors involved in cancer awareness and service delivery.

Participants were drawn from the following stakeholder categories:

- **General Public:** Adult residents across the six Area Councils (AMAC, Bwari, Gwagwalada, Kuje, Kwali, and Abaji), representing the primary audience of public health campaigns.
- **Healthcare Professionals:** Oncologists, pediatric nurses, and medical social workers involved in pediatric oncology services within the FCT.
- **NGO and Advocacy Representatives:** Personnel from non-governmental and public health organizations engaged in childhood cancer advocacy activities within the territory.
- **Parents and Caregivers:** Parents or guardians currently supporting children undergoing cancer treatment in selected FCT health facilities. Consistent with the ethical considerations guiding the study, this group participates only through quantitative instruments to minimize emotional distress.

Inclusion and Exclusion Criteria

To participate, respondents must:

1. Currently reside or work within the FCT;
2. Be 18 years or older;
3. Belong to one of the identified stakeholder groups or be residents potentially exposed to public health campaigns within the territory; and

4. Provide voluntary informed consent under conditions of confidentiality and anonymity.

Participants were recruited through pediatric oncology departments, advocacy organizations, community associations, and public engagement platforms within the FCT to ensure representation across the identified stakeholder groups.

The inclusion of multiple respondent categories reflects the multi-stakeholder nature of childhood cancer awareness and care in the FCT, while the concentration of specialized healthcare institutions and active advocacy organizations within the territory further supports its suitability as the study population.

Sample Size and Sampling Technique

Sample Size Determination

The sample size was determined using Cochran's (1977) formula for large populations. Cochran's formula is appropriate for cross-sectional survey studies where the population size is large and the objective is to obtain a representative sample with an acceptable margin of error.

$$n_0 = \frac{Z^2 pq}{e^2}$$

Where:

- Z = 1.96 (95% confidence level)
- p = 0.5 (maximum variability)
- q = 1 − p = 0.5
- e = 0.06 (6% margin of error)

$$n_0 = \frac{(1.96)^2(0.5)(0.5)}{(0.06)^2} \approx 267$$

To account for a 10% non-response rate:

$$n = \frac{267}{0.90} \approx 296$$

Thus, the minimum required sample size for the study was 296 respondents. At the end of data collection and cleaning, a total of 363 valid questionnaires were obtained and analysed, exceeding the minimum sample size recommended by Cochran's formula. The final sample size therefore improved the statistical reliability of the study findings.

Eligibility criteria required participants to be 18 years or older, reside or work within the FCT, belong to one of the designated respondent groups, and voluntarily consent to participate.

Sampling Technique

The stratified sampling technique was employed to ensure adequate representation of the different stakeholder groups relevant to childhood cancer awareness and care within the Federal Capital Territory (FCT). Stratified sampling is appropriate when a population consists of distinct subgroups whose perspectives are essential to the research objectives, allowing each subgroup to be proportionally or purposively represented within the final sample (Cochran, 1977).

For this study, the population was divided into four strata based on stakeholder relevance:

1. General public residents,
2. Healthcare professionals,
3. NGO and advocacy representatives, and
4. Parents and caregivers of children with cancer.

Following stratification, respondents were recruited within each group using proportionate allocation, ensuring that larger population segments were adequately represented while maintaining sufficient representation of specialized stakeholder categories. The final distribution of respondents across strata was therefore structured as follows:

- General Public – 50% of total sample,
- Healthcare Professionals – 20%,
- NGO/Advocacy Representatives – 20%, and
- Parents/Caregivers – 10%.

Within the general public stratum, participants were recruited across the six Area Councils of the Federal Capital Territory (Abuja Municipal Area Council, Bwari, Gwagwalada, Kuje, Kwali, and Abaji) using community outreach and online dissemination to capture diverse residential populations. Recruitment occurred through community networks, social platforms, and public engagement forums.

Healthcare professionals and parents/caregivers were recruited through pediatric oncology departments and related clinical services within selected FCT hospitals, while NGO and advocacy participants were identified through organizations actively involved in childhood cancer awareness and patient support programs within the territory.

Purposive and convenience sampling were applied because complete sampling frames for all stakeholder groups were not available, making it difficult to access to eligible participants while maintaining the proportional distribution required by the stratified design. This approach ensured representation of all critical stakeholder perspectives while remaining feasible within logistical and ethical constraints.

The stratified approach enhances the analytical value of the study by enabling comparison across stakeholder groups and ensuring that findings reflect the multi-sectoral realities of childhood cancer awareness and care within the FCT.

Proportionate Stratified Sample Allocation

Table 1: Stratified Distribution of Sample Size

Respondent Category	Allocation (%)	Sample Size
General Public	50%	182
Medical Personnel	20%	73
Parents/Caregivers	10%	36
NGO/CSO Representatives	20%	73
Total	**100%**	**363**

Source: Author's Computation, 2026

Geographic Distribution of General Public Sample

Table 2: Allocation Across FCT Area Councils

Area Council	Allocated Sample
AMAC	100
Gwagwalada	30
Bwari	22
Kuje	10
Kwali	10
Abaji	10
Total	182

Source: Author's Computation, 2026

Sources and Method of Data Collection

Primary data for the study were collected through structured questionnaires and key informant interviews conducted among selected respondents within the Federal Capital Territory (FCT), Abuja.

Quantitative data were obtained through administration of a structured questionnaire to caregivers, members of the public, nongovernmental organizations and healthcare workers. The questionnaire was administered electronically via Google Forms and physically where necessary to ensure wider participation, particularly among respondents with limited internet access.

The instrument was structured into sections covering socio-demographic characteristics, awareness of childhood cancer symptoms, exposure to public health campaigns, health-seeking behaviours, perceived barriers to early detection, and perceptions of mortality-related factors associated with childhood cancer. The questionnaire consisted mainly of close-ended and Likert-scale items to facilitate quantitative measurement of knowledge, attitudes, and behaviours relevant to the study objectives. Completed questionnaires were automatically captured, coded, and exported for statistical analysis.

Following completion of the quantitative phase, qualitative data were collected through key informant interviews with selected pediatric oncologists, oncology pharmacists, and resident doctors working in pediatric oncology units within selected hospitals in the FCT. Interview participants were purposively selected based on their professional involvement and experience in managing childhood cancer cases. This phase provided deeper explanations for survey findings, particularly regarding awareness gaps, diagnostic delays, campaign effectiveness, and systemic barriers to early detection and mortality reduction. Qualitative findings were used to interpret and contextualize quantitative results during analysis.

Participation in the study was voluntary, and informed consent was obtained from all respondents prior to data collection. Participants were informed of their right to withdraw at any stage without consequence. Confidentiality and anonymity were maintained throughout the research process, and all collected data were securely stored and used solely for academic purposes.

Research Instrument and Validity

The study utilized two distinct instruments to collect data, aligned with the mixed-methods design.

Quantitative Questionnaire

The primary instrument for the quantitative phase was a structured questionnaire designed for different categories of respondents, including medical practitioners, caregivers, residents of the FCT, and civil society/non-governmental organization representatives. The questionnaire is divided into four sections:

- **Section A:** Socio-demographic profile of the respondent.
- **Section B:** Levels of awareness regarding childhood cancer symptoms and early warning signs.
- **Section C:** Exposure and engagement with public health campaigns (digital, broadcast, and print).

- **Section D:** Perceptions of mortality-related factors, including health-seeking behavior and barriers to early diagnosis, measured using a 4-point Likert scale (Strongly Agree to Strongly Disagree).

Qualitative Interview Guide

For the qualitative phase involving medical practitioners, a semi-structured interview guide was employed. This instrument consists of open-ended questions designed to explore clinical observations that cannot be captured by a survey. The guide allowed probing into professional insights regarding late-stage presentations in FCT hospitals and perceived effectiveness of current awareness strategies.

Validity and Reliability of Instruments

To ensure data quality, instruments were tested for validity and reliability. Validity refers to the extent to which an instrument measures what it is intended to measure.

Content validity was established through expert panel review involving a pediatric oncologist and academic supervisors, ensuring that questionnaire items were technically accurate, culturally appropriate, and aligned with research objectives.

Face validity was supported through pilot testing involving approximately 15 respondents, allowing refinement of question clarity and response options.

Construct validity was ensured by aligning questionnaire items with theoretical constructs underpinning the study.

Reliability was assessed using Cronbach's alpha to determine internal consistency of Likert-scale items, with a minimum acceptable coefficient of 0.70 considered adequate. Based on pilot study feedback, modifications were made to improve questionnaire wording and structure prior to full deployment.

Trustworthiness of qualitative findings was enhanced through member checking, where participants verified summaries of interview responses, and through maintenance of audit trails documenting data collection and analysis procedures to ensure transparency.

Method of Data Analysis

Data analysis for this study followed the explanatory mixed-methods design in which quantitative analysis was conducted first, followed by qualitative analysis to further explain and contextualize quantitative findings.

Quantitative Data Analysis

Data obtained from completed questionnaires were coded and exported from Google Forms into Microsoft Excel before being imported into the Statistical Package for Social Sciences (SPSS) version IBM SPSS Statistics 31 for analysis. Data cleaning procedures were undertaken to remove incomplete responses and correct coding inconsistencies prior to analysis.

Quantitative analysis was conducted in two stages: descriptive and inferential analysis.

Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarize respondents' socio-demographic characteristics, levels of awareness, campaign exposure, health-seeking behaviours, and perceived barriers to early detection. These summaries provided an overview of childhood cancer awareness and campaign reach within the Federal Capital Territory.

Inferential statistical techniques were subsequently employed to examine relationships between key study variables. Chi-square tests were used to determine associations between categorical variables such as campaign exposure and awareness levels or health-seeking behaviour. Where appropriate, logistic regression analysis was conducted to examine predictors of timely health-seeking behaviour and perceived early presentation outcomes. All statistical tests were conducted at a 5% level of significance. Results were presented using tables, charts, and figures to enhance clarity and interpretation.

Qualitative Data Analysis

Qualitative data obtained from key informant interviews were audio-recorded with participants' consent and subsequently transcribed verbatim. Transcripts were carefully reviewed alongside field notes to ensure accuracy.

A thematic analysis approach was employed to analyze qualitative data. Transcripts were read repeatedly to facilitate familiarization with the data, after which meaningful text segments were coded. Codes were grouped into categories and subsequently organized into broader themes reflecting participants' perspectives on awareness gaps, referral challenges, campaign effectiveness, and systemic barriers affecting early diagnosis and treatment outcomes.

Emerging themes were compared across participants to identify common patterns and divergent professional experiences. Selected verbatim quotations were used in the results chapter to illustrate key findings while maintaining participant anonymity.

Integration of Quantitative and Qualitative Findings

In line with the explanatory sequential design, qualitative findings were used to explain and contextualize patterns observed in quantitative results. Areas where survey findings revealed unexpected or unclear patterns were explored through interview data to provide clinical and systemic explanations.

Integration occurred primarily at the interpretation and discussion stages, where quantitative trends were examined alongside qualitative insights to produce a more comprehensive understanding of how public health campaigns influence awareness, health-seeking behaviour, and mortality-related outcomes in the FCT.

The data collection process was executed in two distinct phases, following the explanatory sequential design.

In the first phase i.e. Quantitative Data Collection, the survey was administered through a hybrid approach of physical and digital distribution. Printed questionnaires are distributed at strategic locations across the FCT, including pediatric waiting areas in tertiary hospitals (e.g., National Hospital Abuja, Federal Medical Centre Jabi Abuja and the University of Abuja Teaching

Hospital Gwagwalada) and during community advocacy events. To increase the reach and accommodate the tech-savvy demographic of Abuja, a digital version of the questionnaire is also shared via secure professional and community platforms like the online membership group for Nigerian Cancer Society. Participation is strictly voluntary, and respondents are provided with a brief overview of the study's purpose before proceeding.

The second phase for the collection of qualitative data, following the preliminary review of survey trends, semi-structured interviews are conducted with the selected medical practitioners. These sessions are held either in person or via secure video conferencing, depending on the participants' clinical schedules. Each interview is recorded with the participant's explicit consent to ensure an accurate transcript for analysis.

Data Presentation, Analysis and Interpretation

Data Presentation

This chapter presents and analyses data collected to assess the influence of public health campaigns on childhood cancer awareness, early detection behaviours, and perceptions of mortality in the Federal Capital Territory (FCT), Nigeria. Out of 363 retrieved questionnaires, 358 were valid for analysis, exceeding the minimum required sample size of 296, which enhances the reliability and representativeness of the findings (Israel, 1992; Krejcie & Morgan, 1970; VanVoorhis & Morgan, 2007). Data are presented through tables and figures accompanied by narrative explanations to highlight patterns, relationships, and implications relevant to the study's objectives, while inferential statistics were used to test hypotheses at a 5% significance level.

In addition to the survey, the study integrated qualitative insights from fifteen purposively selected Key Informant Interviews (KIIs) with senior pediatric oncologists and clinicians from major tertiary facilities in the FCT, including the National Hospital Abuja, Federal Medical Centre Jabi, and University of Abuja Teaching Hospital. This sample size aligns with recommended thresholds for achieving thematic saturation in expert health systems research, with core themes typically emerging by 12 interviews (Hennink & Kaiser, 2022; Saunders et al., 2018; Hagaman & Wutich, 2017). The KIIs provided in-depth perspectives on early diagnosis, campaign effectiveness, systemic barriers, and mortality reduction, thereby contextualizing, validating, and enriching the interpretation of quantitative survey findings.

Data Analysis

Socio-Demographic Characteristics of Respondents

This section presents the socio-demographic characteristics of respondents to provide background context for interpreting findings related to awareness, perceptions, and health-seeking behaviour.

Respondents by category

Table 3: Distribution of respondents by category

S/No	Response	Frequency	Percent (%)
1	Others - Resident in the FCT	237	66.2
2	Medical personnel	43	12
3	Non-Governmental Organization / Civil Society Organization	42	11.7
4	NONE	22	6.1
5	Parent/guardian of a child who has been diagnosed of cancer	14	3.9
	Total (valid)	358	100

Source: Author's Computation, 2026

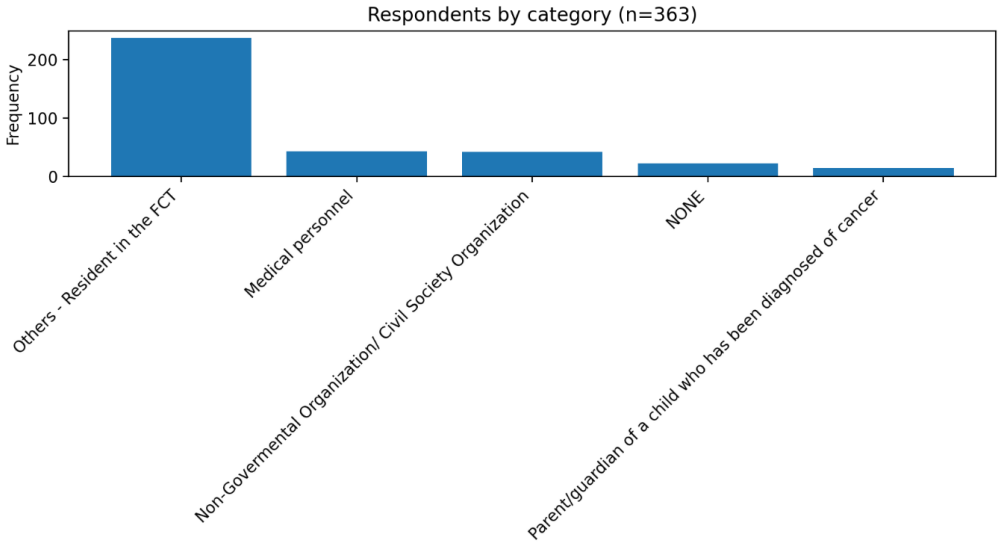

Figure 1: Distribution of Respondents by Category

The distribution of respondents by category is presented in Table I and graphically represented in image I. Majority of the respondents identified as residents of the Federal Capital Territory (FCT), accounting for 66.2%. This group represents the public and provides valuable insights into baseline levels of awareness, knowledge of childhood cancer symptoms, and exposure to public health campaigns within the wider community. Their substantial representation strengthens the study's ability to assess public-level awareness and the reach of childhood cancer campaigns across the FCT.

Medical personnel constituted 12.0%, reflecting the inclusion of healthcare professionals involved in childhood cancer care and related services. This group is critical to the study, as healthcare workers play a central role in early detection, diagnosis, referral, and treatment of childhood cancer. Their responses contribute professional perspectives on campaign effectiveness, barriers to early diagnosis, and mortality-related factors within the healthcare system.

Respondents representing Non-Governmental Organizations (NGOs) and Civil Society Organizations (CSOs) accounted for 11.7%. The inclusion of this group is particularly relevant to the study's objective of evaluating the influence of public health campaigns, as NGOs and CSOs are key implementers of awareness initiatives, community outreach programmes, and advocacy activities related to childhood cancer in the FCT.

A smaller proportion of respondents, 6.1%, selected "None", indicating that they did not belong to any of the predefined stakeholder categories. Respondents who selected this option were automatically directed to the end of the survey because they did not meet the criteria for providing further relevant input required by the study. Consequently, their responses were excluded from subsequent sections of analysis, which focused on participants with direct or contextual involvement in childhood cancer awareness, care, or advocacy. This approach was adopted to maintain the analytical relevance and coherence of the dataset by ensuring that only responses aligned with the study objectives were included in the core analysis.

Finally, parents or guardians of children diagnosed with cancer comprised 3.9%. Although this group represents the smallest proportion of the sample, their inclusion is crucial, as they provide firsthand experience and insights into health-seeking behaviour, delays in diagnosis, and the practical impact of awareness campaigns on care decisions. Their responses add depth to the assessment of mortality-related factors from the perspective of affected families.

Methodologically, the distribution of respondent categories is appropriate for the study's objectives. The predominance of public respondents supports the assessment of community-level awareness and campaign reach, while the inclusion of medical personnel, NGO/CSO representatives, and parents or caregivers ensures that multiple stakeholder perspectives are captured. This balanced representation enhances the robustness of the findings and supports a comprehensive evaluation of the impact of public health campaigns on childhood cancer awareness and mortality-related pathways in the FCT.

Gender Distribution of Respondents

Table 4: Gender Distribution of respondents

Response	Frequency	Percent (%)
FEMALE	147	62
MALE	90	38
Total (valid)	237	100

Source: Author's Computation, 2026

The gender distribution of respondents is presented in the table above. Female respondents constituted the majority with 62%, while male respondents accounted for 38%. This distribution is particularly relevant to the study's objectives, which aim to assess awareness, perceptions, and health-seeking behaviours related to childhood cancer. Women, especially mothers and female caregivers, often play a primary role in child health decision-making and caregiving, and their greater representation enhances the study's capacity to capture informed perspectives on childhood cancer awareness, early symptom recognition, and responses to public health campaigns.

The observed gender distribution reflects the social and caregiving realities, where women are more likely to engage with health services, participate in health surveys, and respond to community-based awareness initiatives (Bertakis et al., 2000).

The inclusion of both male and female respondents ensures gender diversity, while the higher proportion of female respondents strengthens the relevance of the findings to childhood health-related outcomes. Consequently, the gender composition of the sample supports the study's validity and aligns with its focus on childhood cancer awareness and early health-seeking behaviour.

Educational Level of Respondents

Table 5: Educational level of respondents

Response	Frequency	Percent (%)
TERTIARY	232	97.9
SECONDARY	4	1.7
NONE	1	0.4
Total (valid)	237	100.0

Source: Author's Computation, 2026

The findings show that an overwhelming majority of respondents, 97.9%, possessed tertiary-level education, while only 1.7% had secondary education, and 0.4% had no formal education. This distribution indicates a highly educated respondent pool for this variable.

In relation to the objectives of the study, the high level of educational attainment among respondents enhances the reliability of responses concerning awareness of childhood cancer, understanding of public health messages, and interpretation of campaign information. Individuals with higher educational levels are generally better positioned to comprehend health-related information, assess awareness campaigns, and report accurately on health-seeking behaviours, which are central to the evaluation of the impact of global and local public health campaigns in the FCT (Stormacq et al., 2019).

From a methodological perspective, the predominance of tertiary-educated respondents is acceptable given the study context and data collection method. The survey was administered primarily through online platforms, which are more accessible to individuals with higher educational attainment and digital literacy. Additionally, the Federal Capital Territory has a relatively higher concentration of educated residents compared to other regions in Nigeria.

However, the predominance of tertiary-educated respondents introduces a potential sampling bias that may limit the generalisability of findings to less-educated populations within the FCT. Individuals with lower educational attainment, who may face greater barriers to health information and care, are under-represented in this sample. Consequently, awareness levels reported in this study may be higher than those prevailing in the general population. This limitation is acknowledged and discussed further in Chapter Five.

4.2.4 Area Council Distribution of Respondents

Table 6: Area Council Distribution of Respondents

Area Council	Frequency	Percent (%)
AMAC	148	59
BWARI	46	18.3
GWAGWALADA	22	8.8
KUJE	19	7.6
ABAJI	9	3.6
KWALI	7	2.8
Total (valid)	251	100

Source: Author's Computation, 2026

Majority of the valid responses were obtained from the Abuja Municipal Area Council (AMAC), accounting for 59.0%. This was followed by Bwari Area Council with 18.3%, Gwagwalada with 8.8%, and Kuje with 7.6%. Smaller proportions of respondents were drawn from Abaji 3.6%) and Kwali 2.8%.

This distribution is relevant to the study's objectives, which aim to assess childhood cancer awareness and the influence of public health campaigns across diverse settings within the FCT. The higher representation from AMAC reflects its status as the most urbanised and densely populated Area Council, with greater access to healthcare facilities, media outlets, and awareness campaigns. Conversely, the inclusion of respondents from less-represented Area Councils, such as Abaji and Kwali, ensures that perspectives from more rural and semi-urban areas are captured, allowing for comparative insights across different levels of infrastructural development.

From a methodological standpoint, the Area Council distribution is acceptable and appropriate for the study. Data collection through online and community-based channels naturally resulted in higher participation from more urbanised areas with better internet connectivity and population density (Dutwin & Buskirk 2023). Nevertheless, the presence of respondents from all six Area Councils supports the geographic coverage of the study and enhances the validity of findings related to spatial differences in awareness, access to information, and health-seeking behaviour within the FCT.

Awareness of Childhood Cancer

This section addresses Research Question 1 and Objective 1, focusing on respondents' awareness and understanding of childhood cancer.

General Awareness of Childhood Cancer

Table 7: Awareness of Childhood Cancer

Response	Frequency	Percent (%)
YES	217	86.5
NO	34	13.5
Total (valid)	251	100

Source: Author's Computation, 2026

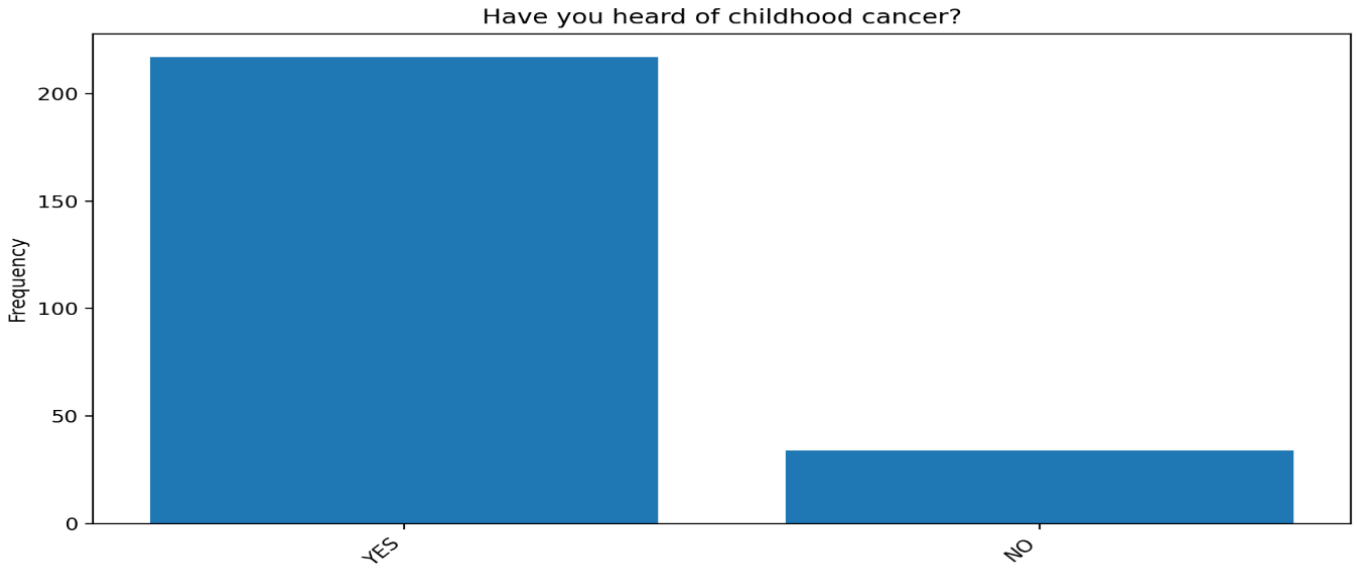

Figure 2: Awareness of Childhood Cancer

The responses presented in Table V indicate a high level of awareness among respondents regarding the subject under consideration. When asked if respondents are aware of childhood cancer, a substantial majority of respondents, 86.5%, answered "Yes", while a much smaller proportion, 13.5% indicated "No". This distribution suggests that awareness of childhood cancer among the respondents is generally high within the Federal Capital Territory.

The predominance of affirmative responses implies that childhood cancer is not an entirely unfamiliar concept to most respondents in the study area. This level of awareness may be attributed to increased exposure to health information through media platforms, healthcare facilities, educational institutions, and the activities of non-governmental organizations operating within the FCT. However, the presence of respondents who reported no awareness, though relatively small, remains noteworthy. The fact that over one in ten respondents had not heard of childhood cancer highlights the persistence of information gaps within the population.

This pattern is consistent with findings from other low- and middle-income settings, where general awareness of childhood cancer has improved through media exposure and NGO advocacy, yet remains superficial and uneven (Irabor et al., 2017). Studies in sub-Saharan Africa similarly report high recognition of the term "cancer" but limited understanding of its childhood manifestations, which continues to contribute to delayed presentation and poor outcomes (Rodriguez-Galindo et al., 2015).

From an analytical perspective, this finding aligns with the study's objective of assessing baseline awareness as a foundation for evaluating the effectiveness of public health campaigns. While the high awareness rate is encouraging, it does not necessarily translate into adequate knowledge of early symptoms or appropriate health-seeking behaviour. As demonstrated in subsequent sections, awareness alone may coexist with limited understanding or misconceptions, which can still contribute to delayed diagnosis and poor outcomes.

Overall, the results suggest that although childhood cancer awareness is relatively widespread among respondents in the FCT, continued and targeted awareness efforts are necessary to reach the remaining uninformed population and to deepen understanding beyond basic recognition of the disease.

Knowledge of Early Warning Signs

Table 8: Knowledge of Early Warning Signs

Symptom Identified	Frequency	Percentage (%)
Unexplained weight loss	82	22.6
Swelling on body parts	67	18.5
Persistent fever	61	16.8
Excessive tiredness	54	14.9
Blood in urine	39	10.7
Persistent headaches	35	9.6
Unexplained bruises/bleeding	35	9.6
White glow in the eye	30	8.3
I do not know any symptoms	72	19.8

The table above presents respondents' knowledge of early warning signs associated with childhood cancer. The findings reveal varying levels of symptom recognition among respondents, indicating both areas of awareness and notable gaps in knowledge. Unexplained weight loss was cited by 22.6% of the respondents. This was followed by swelling on body parts 18.5% and persistent fever 16.8%. These symptoms are often visible or prolonged in nature, which may explain why they are more readily recognized by members of the public.

Other symptoms, such as excessive tiredness (14.9%), blood in urine (10.7%), and persistent headaches (9.6%), were less commonly identified. Similarly, unexplained bruising or bleeding was recognized by 9.6% of the respondents, while a white glow in the eye, a key indicator of retinoblastoma (cancer of the eye), was identified by only 8.3%. The relatively low recognition of these symptoms is concerning, as they are critical early warning signs that often require prompt medical attention.

Of particular importance is the finding that 19.8% of the respondents claimed not knowing any symptoms of childhood cancer. This indicates that nearly one-fifth of the respondents lack basic knowledge of early warning signs, which may significantly delay diagnosis and treatment. Such delays are known to negatively affect treatment outcomes and survival rates among children with cancer. Delayed recognition of early warning signs has been consistently associated with advanced-stage presentation, increased treatment intensity, higher rates of treatment abandonment, and reduced survival in childhood cancers (Rodriguez-Galindo et al., 2015; Knaul et al., 2019).

Overall, the results suggest that while some awareness of common childhood cancer symptoms exists among respondents in the FCT, knowledge remains uneven and incomplete. The limited recognition of less obvious but clinically significant symptoms, coupled with the proportion of respondents with no symptom knowledge, underscores the need for more targeted and comprehensive awareness campaigns. Public health interventions should place greater emphasis on educating caregivers and the public about the full range of early warning signs to promote timely diagnosis and reduce mortality associated with childhood cancer.

Qualitative Insight from Key Informant Interviews (KII) on Awareness of Childhood Cancer

Findings from the Key Informant Interviews further support the quantitative evidence on childhood cancer awareness in the FCT. Several paediatric oncology specialists acknowledged that although awareness has increased in recent years, late presentation remains a persistent challenge. One paediatric oncologist observed that there has been some improvement in awareness about childhood cancer, however, parents still present their children late, emphasising that "more targeted awareness is important to solve the problem holistically" (KII - 5).

Similarly, a senior paediatrician noted that while many caregivers have heard about childhood cancer, misconceptions continue to undermine early presentation. According to the informant, "awareness is improving slowly, but late presentation remains common, showing that current campaigns are still insufficient" (KII - 3).

Another paediatric oncologist highlighted the gap between general awareness and practical knowledge of symptoms. The informant explained that although some caregivers have been exposed to awareness campaigns, they often fail to recognise early warning signs and resort to informal care before seeking hospital treatment. In her words, "parents visit chemists and in some cases herbalists before presenting to the facility" (KII-7).

In addition, an informant reported that awareness gains appear to be uneven across socioeconomic groups. The informant observed that "there has been a slight improvement in awareness, particularly among educated and middle-class parents, as more families are now presenting earlier than before. However, this improvement is not uniform across all socioeconomic groups" (KII - 9).

In line with KII – 9 above, another clinician stated, "I'm not sure the people in the remote villages are as aware and that is where most patients who present late come from" (KII – 12)

Another specialist further emphasised the persistence of fundamental knowledge gaps, noting that "although awareness activities are increasing, many parents remain unaware that children can develop cancer, and this continues to delay early presentation" (KII-2).

Overall, these qualitative findings align closely with the survey results, which showed relatively high levels of general awareness especially amongst the elite and those living in the urban areas but uneven recognition of childhood cancer symptoms generally. Together, the findings suggest that awareness alone is insufficient to guarantee early diagnosis, underscoring the need for campaigns that not only increase exposure but also deepen caregivers' understanding of early warning signs and appropriate care-seeking pathways.

Exposure to Public Health Campaigns

This section addresses Research Question 2 and Objective 2.

4.2.7.1 Awareness of Childhood Cancer Campaigns

Table 9: Exposure to Childhood Cancer Awareness Campaigns

Response	Frequency	Percent (%)
NO	116	51.8
YES	105	46.9
NOT SURE	3	1.3
Total (valid)	224	100

Source: Author's Computation, 2026

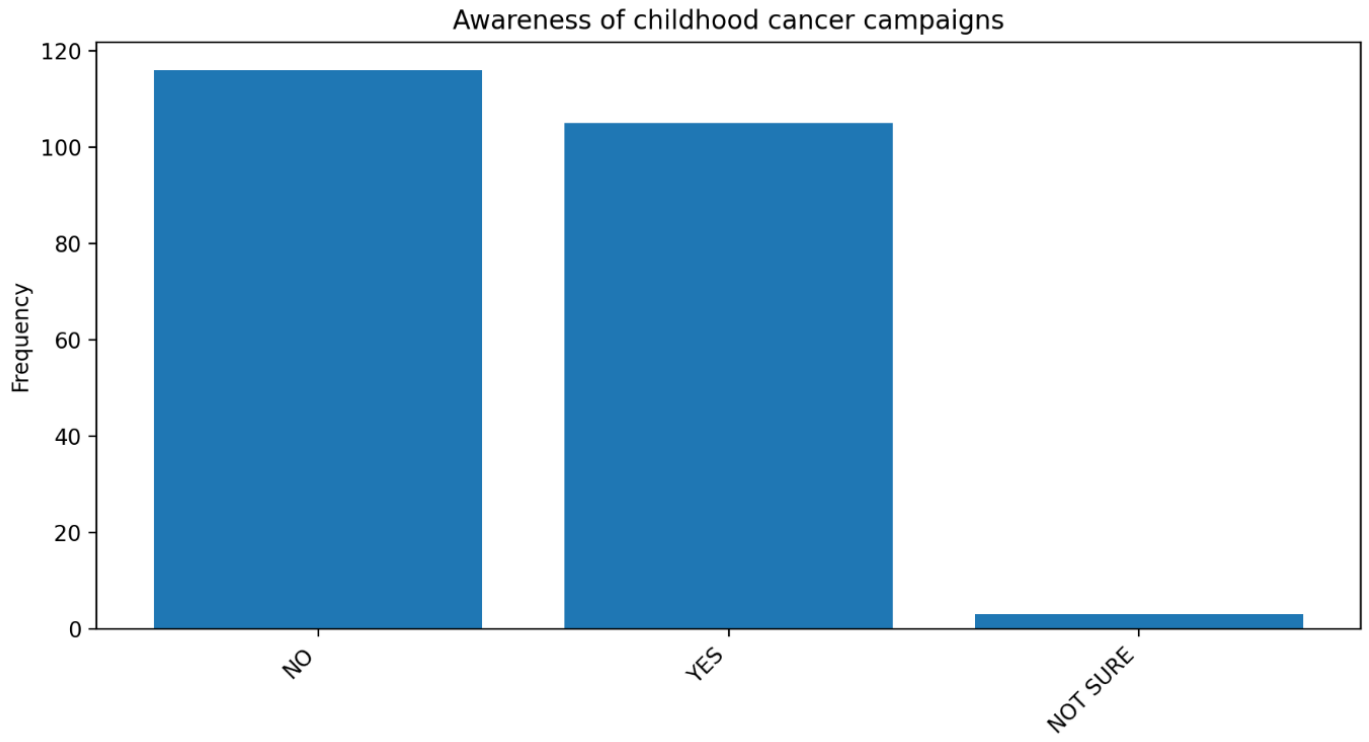

Figure 3: Exposure to Childhood Cancer Awareness Symptoms

The table and image present respondents' reported exposure to childhood cancer awareness campaigns. The findings show that slightly more than half of the respondents, 51.8%, indicated that they had not been exposed to any childhood cancer awareness campaign. In contrast, 46.9% claimed that they have been exposed to such campaigns, while a very small proportion, 1.3%, were unsure of their exposure status.

This distribution highlights a near balance between respondents who have encountered childhood cancer awareness campaigns and those who have not, suggesting that the reach of these campaigns within the Federal Capital Territory remains limited. Although a substantial proportion of respondents have been exposed to awareness initiatives, the fact that over half reported no exposure points to gaps in campaign penetration, particularly at the community level.

From an interpretive perspective, this finding is significant in relation to the study's objective of evaluating the influence of public health campaigns. While the presence of exposed respondents indicates that awareness activities are occurring within the FCT, the relatively high proportion of unexposed respondents suggests that these efforts may not be reaching all segments of the population effectively. Factors such as dissemination channels, geographic location, literacy levels, and access to media platforms may influence who is reached by awareness campaigns. This uneven exposure reflects well-documented challenges in the diffusion of health innovations

in heterogeneous populations, where information dissemination tends to concentrate among urban, educated, and socioeconomically advantaged groups (Rogers, 2003). Similar patterns have been reported in cancer awareness campaigns in other African contexts (Geel et al., 2021; Amo-Antwi et al., 2020).

Overall, the results imply that childhood cancer awareness campaigns in the FCT have achieved moderate visibility but still require expansion and more targeted delivery strategies. Strengthening campaign outreach, particularly in underserved and peri-urban communities, may enhance exposure levels and, in turn, improve public awareness, early symptom recognition, and timely health-seeking behaviour.

Influence of Campaigns on Health-Seeking Behaviour

Table 10: Campaign Influence on Early Health-Seeking Behaviour

Response	Frequency	Percent (%)
5	53	52
4	22	21.6
3	12	11.8
0	6	5.9
2	5	4.9
1	4	3.9
Total (valid)	102	100

Source: Author's Computation, 2026

The table above presents respondents' assessment of the extent to which childhood cancer awareness campaigns influenced early health-seeking behaviour. Responses were measured on a five-point scale, where higher values indicate a stronger perceived influence of campaigns on timely care-seeking decisions.

The findings show that a substantial proportion of respondents perceived a strong positive influence of awareness campaigns. More than half of the respondents, 52.0%, selected the highest response category (5), indicating that campaigns had a very strong influence on encouraging early health-seeking behaviour. Similarly, 21.6% chose 4, suggesting a high level of influence. Taken together, these responses indicate that nearly three-quarters of respondents perceived awareness campaigns as having a strong impact on their willingness to seek medical care promptly.

Moderate levels of influence were reported by 11.8%, who selected 3, suggesting that while campaigns played a role in shaping health-seeking behaviour, their influence was not overwhelming for all individuals. In contrast, lower influence levels were reported by a smaller proportion of respondents. Specifically, 5.9% selected 0, indicating no perceived influence, while 4.9% and 3.9% selected 2 and 1, respectively.

Overall, the distribution of responses suggests that childhood cancer awareness campaigns have been largely effective in promoting early health-seeking behaviour among exposed respondents. The dominance of higher-level responses highlights the potential of awareness initiatives to positively shape behavioural intentions regarding timely medical care. However, respondents who reported minimal or no influence suggest that campaign messages may not resonate equally across individuals, underscoring the need for more targeted, context-sensitive communication strategies to further enhance campaign effectiveness.

KII perspectives on campaign reach and effectiveness

Key informant interviews with pediatric oncologists and clinicians in Abuja revealed that while childhood cancer awareness campaigns have modestly improved parental knowledge particularly among educated, middle- and upper-class urban families their overall reach and effectiveness remain limited. Campaigns led by NGOs such as the Okapi Children Cancer Foundation have raised general awareness through media, school programs, and community events, but they are largely urban-centric and fail to penetrate rural, low-income, and peripheral communities. Informants emphasized that while these initiatives help parents recognize that children can develop cancer, they do not consistently translate awareness into earlier presentation or meaningful behavioral change, as structural, economic, and geographic barriers persist. Clinicians also highlighted gaps in campaign design, including limited advocacy for policy reform, financial support, and integration with subsidized care, underscoring that current efforts disproportionately benefit already advantaged families. Overall, the KIIs reinforce survey findings of uneven exposure and indicate that expanding rural-targeted, policy-integrated strategies is essential to improve early detection and reduce childhood cancer mortality across the Federal Capital Territory.

Barriers to Effective Awareness and Early Detection

This section addresses Research Question 3 and Objective 3.

Table 11: Perceived Barriers to Childhood Cancer Awareness and Early Detection

Option	Frequency	Percent of respondents (%)
Financial constraints	184	77.6
Fear of Stigmatization	123	51.9
Cultural Beliefs	102	43
Lack of trust	52	21.9
Distance to Hospital	45	19
Others	30	12.7

Source: Author's Computation, 2026

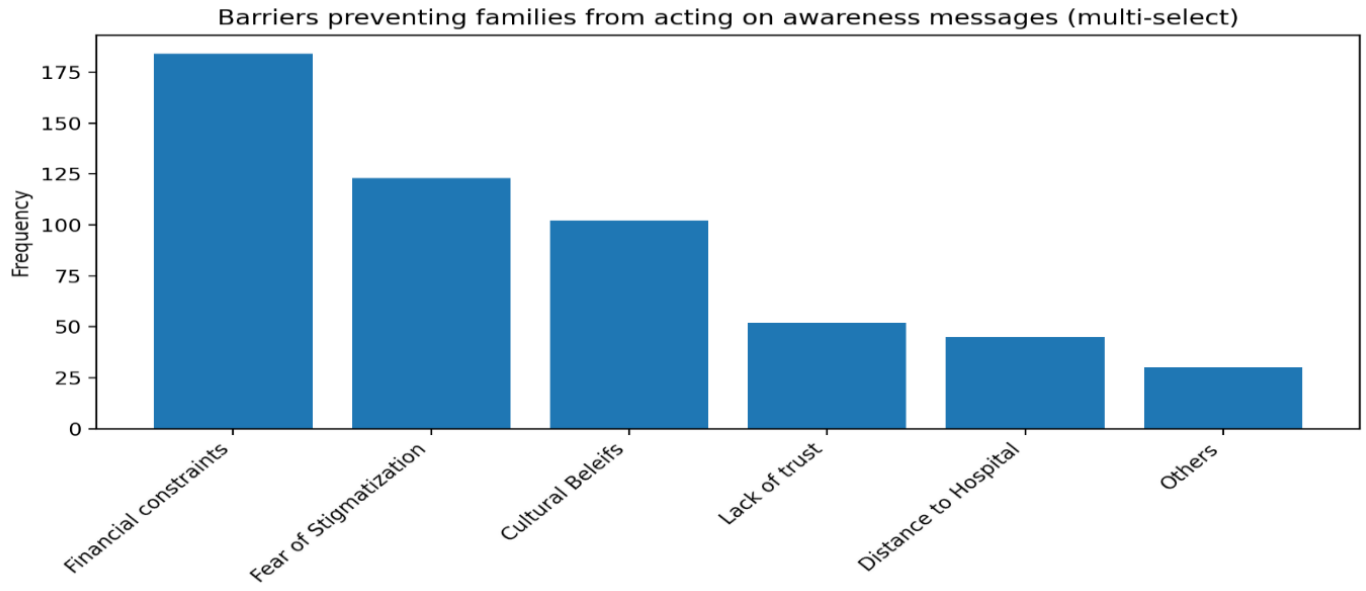

Figure 4: Perceived Barriers to Childhood Cancer Awareness and Early Detection

The findings indicate that financial constraints are the most significant barrier limiting the effectiveness of childhood cancer awareness campaigns and timely health-seeking in the Federal Capital Territory, reported by 77.6% of respondents. Even when awareness exists, high costs for diagnosis, treatment, transportation, and supportive care discourage early presentation and continuity of care, consistent with previous studies in Nigeria and other low- and middle-income countries (Knaul et al., 2019; Abdulrahman et al., 2020; Rodriguez-Galindo et al., 2015). Fear of stigmatization was cited by 51.9% of respondents, reflecting persistent social stigma and fatalistic or spiritual interpretations of childhood cancer, which delays open discussion and early care-seeking (Mostert et al., 2011; Arora et al., 2013; Stefan, 2015). Cultural beliefs were reported by 43.0% of respondents, highlighting the role of traditional and spiritual explanations in delaying biomedical treatment, a pattern documented in West and Southern Africa (Irabor et al., 2017; Amo-Antwi et al., 2020).

Other barriers, though less frequently reported, include lack of trust in the healthcare system (21.9%) and distance to hospitals (19.0%), indicating concerns about care quality, misdiagnosis, and geographic access to specialized oncology services. An additional 12.7% cited "Others," potentially encompassing long waiting times, weak referral systems, or insufficient guidance from frontline health workers. Overall, these findings demonstrate that barriers to effective awareness and early care-seeking are multidimensional economic, socio-cultural, and systemic and suggest that awareness campaigns alone are insufficient to reduce delays or mortality. Effective interventions must integrate financial support, stigma reduction, culturally sensitive messaging, and improved access to trusted healthcare services to meaningfully improve childhood cancer outcomes in Abuja.

KII views on Effective Awareness and Early Detection

The integrated findings from the quantitative survey and Key Informant Interviews (KIIs) reveal that multiple interrelated barriers continue to limit the effectiveness of childhood cancer awareness campaigns and delay early detection in Abuja. Financial constraints were the most frequently reported barrier, with parents often unable to afford diagnostic tests and treatment, leading to delayed presentation or treatment abandonment (KII – 4, 8). Cultural and spiritual beliefs also contribute, as caregivers frequently attribute symptoms to witchcraft or minor illnesses, seeking alternative care before visiting hospitals (KII – 2, 6). Fear of stigmatization further discourages families from openly acknowledging the illness, reducing early referral and undermining the impact of campaigns (KII – 1, 9).

Health-system and structural barriers compound these challenges. Misdiagnosis at primary healthcare levels, weak referral pathways, shortages of specialized personnel, and long distances to tertiary facilities impede timely care (KII – 1, 5, 7, 13). Additionally, while awareness campaigns have improved general knowledge, informants noted limitations in campaign design, including insufficient emphasis on symptom recognition, actionable guidance, and sustained community engagement (KII – 3). These findings indicate that awareness alone is insufficient; effective early detection requires integrated strategies addressing economic, cultural, geographic, and systemic constraints. Combined interventions such as culturally sensitive education, financial support, frontline worker training, and strengthened referral systems are essential to translate awareness into timely care-seeking and meaningful reductions in childhood cancer mortality in the Federal Capital Territory.

Mortality-Related Perceptions

This section addresses Research Question 4 and Objective 4.

Table 12: Perceptions of Campaign Impact on Early Detection and Delay Reduction

Response	Frequency	Percent (%)
YES	66	64.7
NO	19	18.6
NOT APPLICABLE	17	16.7
Total (valid)	102	100

Source: Author's Computation, 2026

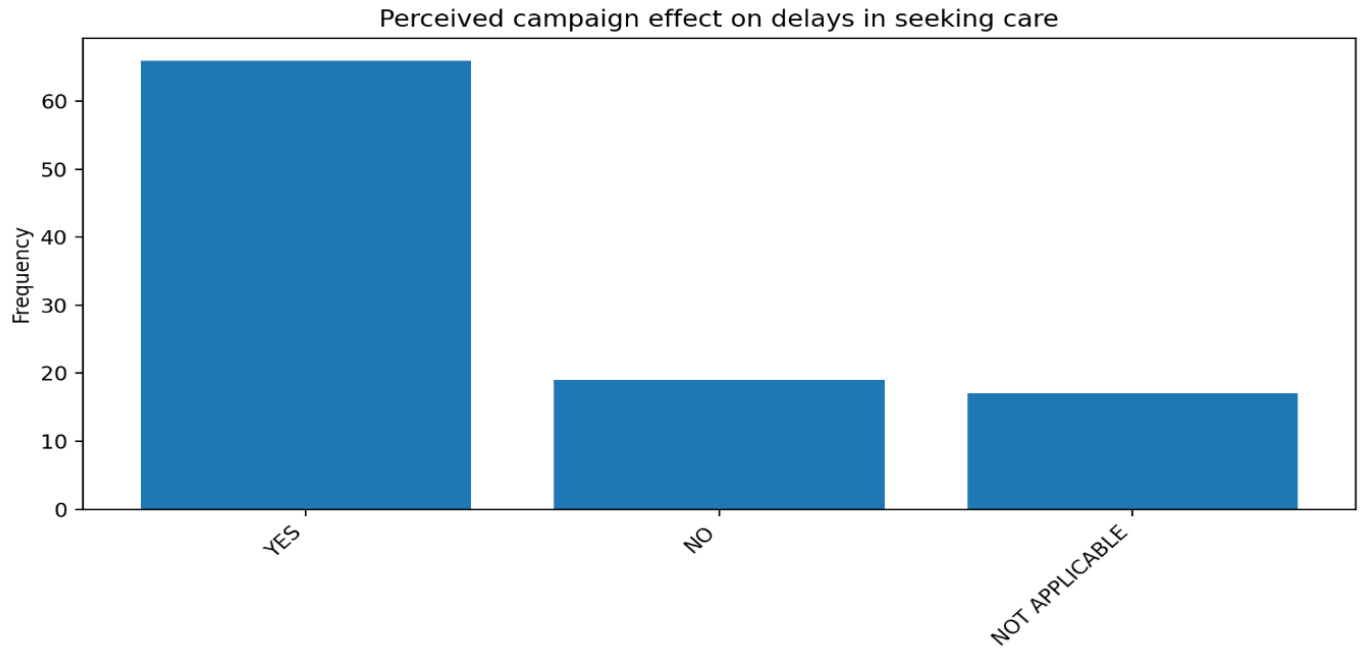

Figure 5:Perceptions of Campaign Impact on Early Detection and Delay Reduction

The study findings indicate that a majority of respondents (64.7%) perceive childhood cancer awareness campaigns as contributing to earlier symptom detection and reduced delays in seeking medical care. This suggests that exposure to targeted health messages positively influences caregivers' recognition of warning signs and motivates timely health-seeking behaviour, which is critical for improving outcomes. Conversely, 18.6% of respondents felt that campaigns had not significantly influenced early detection, likely due to persistent barriers such as financial constraints, stigma, cultural beliefs, or limited access to specialized healthcare. Additionally, 16.7% of respondents selected "Not Applicable," indicating limited exposure to campaigns or insufficient experience to evaluate their impact, highlighting uneven campaign reach. Overall, while campaigns are generally viewed as effective in promoting early detection, the variation in responses underscores the importance of complementing awareness efforts with interventions addressing access, affordability, and trust in healthcare services to achieve meaningful reductions in childhood cancer delays and mortality.

Clinical Perspectives on Mortality Related Perceptions (KII)

Key informant interviews with pediatric oncologists and clinicians in Abuja consistently highlighted catastrophic out-of-pocket costs as the primary driver of childhood cancer mortality in the Federal Capital Territory, a factor that current public health campaigns inadequately address. While families may become aware of a child's diagnosis and the

need for treatment, prohibitive expenses for chemotherapy, supportive therapies, radiology, diagnostics, and complication management frequently lead to treatment interruptions, abandonment, or withdrawal against medical advice. Respondents emphasized that campaigns focus largely on symptom recognition and early detection but rarely advocate for financial support, insurance coverage, subsidies for essential drugs, or government-funded pediatric oncology services. These clinical perspectives align with quantitative findings showing financial constraints as the most frequently reported barrier (77.6%) and underscore that awareness alone cannot overcome economic obstacles. Consequently, informants recommended integrated strategies combining education with systemic financial protection mechanisms to meaningfully reduce childhood cancer mortality in Abuja.

Discussion of Findings

The study found that public health campaigns in Abuja have successfully increased general awareness of childhood cancer, particularly regarding commonly recognised symptoms such as persistent fever, swelling, and unexplained weight loss. Respondents demonstrated familiarity with the concept of childhood cancer, indicating that awareness initiatives have achieved considerable visibility in urban and peri-urban areas of the Federal Capital Territory. However, knowledge of less obvious but clinically critical warning signs, such as unexplained bruising, leukocoria, and blood in urine, remained limited, and a notable proportion of respondents reported no awareness at all. This highlights a gap between superficial awareness and actionable knowledge, which is crucial for early detection (World Health Organization [WHO], 2018). Qualitative insights from paediatric oncologists corroborated these findings, showing that caregivers often present late despite prior exposure to campaign messages.

Regarding health-seeking behaviour and mortality-related outcomes, the findings indicate that exposure to public health campaigns positively influenced caregivers' perception of timely care-seeking. Clinicians reported improved referral patterns and earlier presentation at facilities where sustained sensitisation activities were conducted, suggesting that campaigns indirectly contribute to mortality reduction by promoting early detection. Nevertheless, structural and socio-cultural factors particularly financial constraints, treatment costs, and culturally embedded beliefs remained significant barriers to timely action and treatment adherence. These findings demonstrate that while campaigns can shape awareness and early health-seeking behaviours, they are insufficient on their own to guarantee reductions in childhood cancer mortality in Abuja.

Theoretical interpretation using the Health Belief Model and Diffusion of Innovations Theory explains the observed patterns. Campaigns increased perceived susceptibility and severity of childhood cancer but did not fully overcome perceived barriers such as cost, stigma, and reliance on non-biomedical treatments. Similarly, messages were more readily adopted by early adopters and more educated populations, leaving peripheral and underserved communities with limited exposure. Overall, the study underscores that public health campaigns improve awareness and can influence behaviour, but effective mortality reduction in Abuja requires an integrated strategy combining awareness initiatives, financial protection, access to specialised paediatric oncology services, and sustained community engagement to address cultural misconceptions.

5.0 Conclusion and Recommendations

This study assessed the influence of public health campaigns on childhood cancer awareness and mortality reduction in Abuja using a mixed-methods approach that combined survey data with Key Informant Interviews (KIIs). Findings indicate that campaigns have successfully increased general awareness and influenced caregivers' early health-seeking behaviours. However, qualitative insights revealed that late presentation remains widespread due to financial constraints, cultural beliefs, and systemic health service challenges. Pediatric oncologists emphasised that survival outcomes depend not only on awareness but also on timely diagnosis, continuity of care, and affordability, highlighting that campaigns alone are insufficient to reduce mortality.

The study concludes that effective childhood cancer control in Abuja requires an integrated approach combining sustained public health campaigns with improvements in healthcare accessibility, financial protection, and culturally sensitive community engagement. Campaigns must provide clear, actionable information about early warning signs, link messaging to accessible healthcare facilities, and address stigma and cultural misconceptions. Financial barriers should be mitigated through insurance coverage, subsidized care, and targeted support for vulnerable families. Collaborative coordination among government agencies, healthcare providers, NGOs, and community stakeholders is essential to enhance campaign reach, credibility, and sustainability, ensuring that increased awareness translates into meaningful reductions in childhood cancer mortality (Rodriguez-Galindo et al., 2015; World Health Organization [WHO], 2018; Knaul et al., 2019).

References

1. Adam, A., et al. (2018). Knowledge and health-seeking behaviour of caregivers of children with cancer in Ghana. Journal of Global Oncology, 4, 1–9.
2. Akinyemiju, T., Ogunsina, K., Sakhuja, S., Ogbhodo, V., Braithwaite, D., & Chen, W. (2020). Childhood cancer burden in sub-Saharan Africa: A review of current evidence and future directions. *Cancer Epidemiology*, 65, 101701. https://doi.org/10.1016/j.canep.2020.101701

3. Amo-Antwi, K., et al. (2020). Barriers to early diagnosis of childhood cancer in Ghana: A qualitative study. *BMC Public Health*, 20, 1–10. https://doi.org/10.1186/s12889-020-09020-0

4. Bello, J. A., Magaji, S. & Ismail, Y. (2025). The Impact of Agricultural Growth on Health and Nutritional Status of Rural Households in Adamawa State, Nigeria. International Journal of Innovative Food, Nutrition & Sustainable Agriculture, 13(4), 13-24

5. Eze, C. N., Ugwueze, C. V., & Ezeonu, P. O. (2019). Awareness and presentation patterns of childhood cancers in Nigeria: A hospital-based study. *Nigerian Journal of Clinical Practice*, 22(3), 345–351.

6. Geel, J. A., et al. (2021). The impact of cancer awareness campaigns on early diagnosis in South Africa. *South African Medical Journal*, 111(5), 456–462.

7. Githanga, J., et al. (2020). Determinants of delayed diagnosis of childhood cancer in Kenya. *Pediatric Blood & Cancer*, 67(9), e28475. https://doi.org/10.1002/pbc.28475

8. Gupta, S., Rivera-Luna, R., Ribeiro, R. C., & Howard, S. C. (2014). Pediatric oncology as the next global child health priority: The need for national childhood cancer strategies in low- and middle-income countries. *PLoS Medicine*, 11(6), e1001656. https://doi.org/10.1371/journal.pmed.1001656

9. Hafizu, S. L., Magaji, S., & Ismail, Y. (2025a). Assessment of The Impact of Community Engagement on Sustainable Urban Planning and Environmental Management in Nigeria. *International Journal of Innovative Social Sciences & Humanities Research* 13(4):105-116, doi:10.5281/zenodo.17394701

10. Hafizu, S. L., Magaji, S., & Ismail, Y. (2025b). Role of Community Engagement in Reducing Inequalities and Promoting Sustainable Cities in Nigeria. *ISRG Journal of Economics, Business & Management (ISRGJEBM),* 3(5), 199-208. DOI: 10.5281/zenodo.17423283

11. Ijoko, A. O., Magaji, S. & Gombe, B. M. (2021). Impact of Public Health Expenditure on Health Infrastructure in Primary Health Care centres in FCT. 1st International Conference on Socio-economic and Health Shocks: Policy uncertainty and the need for Institutional Reforms. Department of Economics, Faculty of Arts and Social Sciences, Gombe State University, 8th-9th December.

12. Ismail, Y., Musa, I., & Magaji, S. (2024). Assessment of the Impact of Government Health Expenditure on Economic Growth in Nigeria. *Journal of Arid Zone Economy* 4(3): (2024) 132 – 151. www.https://bit.ly/JazeIssue4(3)

13. Knaul, F. M., Bhadelia, A., Atun, R., & Rodriguez-Galindo, C. (2019). Childhood cancer: Opportunities for global progress. *The Lancet Oncology*, 20(10), e516–e528. https://doi.org/10.1016/S1470-2045(19)30424-1

14. Knaul, F. M., et al. (2019). The hidden costs of childhood cancer in low- and middle-income countries. *The Lancet Oncology*, 20(1), e14–e25. https://doi.org/10.1016/S1470-2045(18)30720-8

15. Magaji, S. & Ismail, Y. (2025). Smart Medicine, Fewer Jobs? A Global Assessment of AI's Disruptive Force in Healthcare. *International Journal of Spectrum Research in Medical and Clinical Practice (IJSRMCP)* 1(4), 75-88. https://doi.org/10.5281/zenodo.18051037

16. Magaji, S. Musa, I., & Yusuf, A.T. (2022). Impact of Covid-19 Lockdown on Savings Mobilisations in Nigeria. *Abuja Journal of Economics and Allied Fields,10(2) 17-25.*

17. Magaji, S., Ismail, Y., Yakubu, J. & Musa, I. (2025b). Analysing the socioeconomic ordeals faced by poor households in the aftermath of the Alau Dam breach in Maiduguri. Journal of Arid Zone Economy 6(3): 132 – 145, https://doi.org/10.63660/jaze.2025.0603.010

18. Magaji, S., Yahaya, I. & Musa, I. (2025a). The Role of Population Dynamics in Advancing Sustainable Economic Growth: A Study Aligned with SDG 8 in Nigeria. 2nd International Conference of the Faculty of Social Sciences, University of Abuja. July 30th to August 1st, 2025.

19. Mostert, S., et al. (2011). Cultural beliefs and health-seeking behaviour in childhood cancer in Africa. *Psycho-Oncology*, 20(8), 831–838.

20. National Cancer Institute. (2022). *Childhood cancers and awareness strategies*. https://www.cancer.gov

21. Rodriguez-Galindo, C., Friedrich, P., Alcasabas, P., et al. (2015). Global challenges in pediatric oncology: Current status and future directions. *Pediatric Blood & Cancer*, 62(4), 587–592. https://doi.org/10.1002/pbc.25481

22. Rosenstock, I. M., Strecher, V. J., & Becker, M. H. (1988). Social learning theory and the Health Belief Model. *Health Education Quarterly*, 15(2), 175–183. https://doi.org/10.1177/109019818801500203

23. Stefan, D. C., et al. (2021). Childhood cancer survival in sub-Saharan Africa: A review. *Cancer*

Epidemiology, 72, 101938. https://doi.org/10.1016/j.canep.2021.101938

24. United Nations Children's Fund (UNICEF). (2020). *Health communication for behavioral impact*. https://www.unicef.org

25. Wakefield, M. A., Loken, B., & Hornik, R. C. (2010). Use of mass media campaigns to change health behaviour. *The Lancet*, 376(9748), 1261–1271. https://doi.org/10.1016/S0140-6736(10)60809-4

26. World Health Organization. (2018). *Childhood cancers: Early detection and management*. https://www.who.int/news-room/fact-sheets/detail/childhood-cancers

27. World Health Organization. (2021). *Global initiative for childhood cancer*. https://www.who.int