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## A Qualitative Assessment of Non-compliance to Polio Vaccination Across Diverse Regions of Nigeria

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### Abstract

*Objective:* This study examines the fundamental factors contributing to non-compliance with polio vaccination initiatives in four Nigerian states: Kano (Northwest), Taraba (Northeast), Edo (South-South), and Abia (Southeast) through a comparative qualitative methodology. The selected states were intentionally chosen to represent Nigeria's regional diversity and past immunization issues, covering various cultural, economic, and policy contexts.

*Methods:* Data were gathered via focus group discussions (FGDs) with caregivers and key informant interviews (KIIs) with immunization stakeholders from governmental and non-governmental sectors. The focus group discussions examined personal experiences and perceptions of economic obstacles, community attitudes, misinformation, communication methods, and the impact of religious, traditional, and influential leaders. The key informant interviews offered institutional insights into how structural elements and policy execution influence adherence to vaccination initiatives.

*Results:* The results, organized into five thematic categories, showing numerous ongoing challenges: economic adversity, vaccine-related myths and misinformation, inconsistent communication, religious and customary opposition, and inadequate institutional cooperation. These variables collectively engender vaccine scepticism and diminish participation in polio immunization programmes. The study indicates that enhancing compliance necessitates context-specific measures that involve trusted local leaders, fortify community-based communication, and tackle cultural and economic realities at the grassroots level.

*Conclusion:* This study highlights that non-compliance to polio vaccination programs in Taraba, Abia, Edo, and Kano states is driven by a combination of interrelated factors.

**Keywords:** Polio Vaccination, Vaccine Hesitancy, Community Beliefs, Health Communication and Nigeria

### **Background of the Study**

Poliomyelitis (polio) is a highly infectious and incapacitating viral illness that predominantly impacts children under the age of five. The poliovirus induces a condition that can penetrate the neurological system, resulting in irreversible paralysis and, in certain instances, mortality, especially when breathing muscles are compromised (World Health Organization [WHO], 2023). Despite substantial global advancements in the eradication of polio, it persists as Circulating Polio Virus type 2 (cVDPV) in Nigeria and endemic in certain nations, notably Pakistan, and Afghanistan (Hussain *et al.*, 2019). Since the inception of the Global Polio Eradication Initiative (GPEI) in 1988, spearheaded by WHO, UNICEF, and several global health collaborators, the prevalence of polio has diminished by more than 99%. The majority of global regions have effectively eradicated the disease. Nigeria continues to record cases as Circulating Variant Polio Virus cVPV2, mostly due to ongoing deficiencies in vaccination coverage, vaccine hesitancy, and socio-cultural resistance (Singh *et al.*, 2017). Vaccination is the most efficacious approach for managing and ultimately eliminating polio. Notwithstanding extensive immunization initiatives and the accessibility of efficacious vaccines, non-adherence to vaccination programmes persists as a significant concern in Nigeria. Periodic outbreaks in several regions of the country show the vulnerability of advancements, especially in areas with low vaccine acceptance stemming from distrust or misinformation (Usman & Aliyu, 2022).

A primary obstacle to total eradication in Nigeria is vaccine hesitancy, characterised by the postponement of acceptance or outright rejection of vaccines notwithstanding their availability. Vaccine reluctance is affected by various causes, including socio-cultural attitudes, distrust in government and healthcare systems, misinformation, religious ideology, political instability, and economic difficulties (Oleribe *et al.*, 2020). These characteristics differ among areas and communities, leading to disparate immunization coverage nationwide. In Northern Nigeria, resistance to the polio vaccine has been worsened by deeply rooted cultural and religious convictions. Certain tribes harbour notions that the vaccine serves as an instrument of Western domination, while others apprehend that it may induce infertility or long-term health complications (Hussain *et al.*, 2019). Such views are frequently exacerbated by local misinformation networks, religious authorities, and community influencers who exert considerable impact on public perception and decision-making.

Understanding the factors contributing to polio vaccine non-compliance is essential for enhancing eradication initiatives. Notwithstanding comprehensive advertising and communication efforts, the rejection or protracted acceptance of the vaccine persists in obstructing national objectives. To formulate effective, context-specific intervention strategies, it is essential to examine the underlying causes of non-compliance, notably the social, cultural, political, and economic aspects affecting vaccine decisions throughout Nigeria's many regions (Oleribe *et al.*, 2020; Usman & Aliyu, 2022). This study aims to examine the socio-cultural and

contextual elements that contribute to polio vaccine non-compliance in Nigeria. This research seeks to provide significant evidence to inform policy and programming aimed at achieving a polio-free Nigeria by analysing insights from various states with differing levels of vaccine coverage and incidence.

### **Materials and Methods**

This research employed a qualitative cross-sectional study methodology to assess the factors contributing to non-compliance with polio vaccination initiatives across various socio-cultural and geographical contexts in Nigeria. The qualitative approach facilitated comprehensive understanding of personal experiences, community beliefs, institutional processes, and local narratives that quantitative tools may inadequately represent. The study sought to identify both universal and context-dependent factors influencing vaccine hesitancy by comparing chosen states with varying cultural, political, and economic characteristics.

Four states were intentionally chosen to represent Nigeria's regional diversity: Kano (Northwest), Taraba (Northeast), Edo (South-South), and Abia (South East). These states were selected due to historical difficulties with immunization rates and documented instances of ongoing vaccine non-compliance. Their selection was also guided by the necessity to comprehend regional subtleties in the impact of socio-cultural and institutional elements on polio vaccine adoption. The research population comprised essential stakeholders with direct or indirect participation in polio immunization initiatives. The participants were caregivers of children under five years, traditional and religious leaders, healthcare practitioners, and immunization programme officials from governmental and non-governmental organizations. A purposive sample strategy was employed to guarantee the inclusion of participants capable of offering substantial, context-specific insights regarding vaccine non-compliance. This strategy allowed the researchers to access individuals whose experiences were most pertinent to the study's aims.

Data collection was carried out utilizing three principal ways. Initially, Focus Group Discussions (FGDs) were conducted with caregivers in each state to assess local opinions, beliefs, and experiences related to the polio vaccine. Each group comprised 6 to 8 members and was facilitated via a semi-structured conversation interview guide. Secondly, Key Informant Interviews (KIIs) were conducted with health authorities, community leaders, and immunization stakeholders to obtain their insights on overarching structural and policy-related obstacles to vaccination. Third, informal observations and field notes supplemented interviews and conversations by documenting social cues, environmental background, and exchanges throughout community engagements.

All focus group discussions and key informant interviews were audio-recorded with participants' consent and subsequently transcribed verbatim. Thematic content analysis was employed to examine the data. Transcripts were manually coded and augmented by NVivo software to discern important patterns, reoccurring narratives, and emerging themes. Codes were categorized in accordance with the research objectives, including cultural and religious resistance,

disinformation and distrust, economic obstacles, and institutional inefficiencies. The utilization of many data sources and collection techniques facilitated triangulation, hence enhancing the credibility and trustworthiness of the results.

Ethical considerations were followed strictly. All participants were informed about the purpose and procedures of the study, and both verbal and written consent were secured prior to participation. Confidentiality and anonymity were maintained throughout the research process, and participants were assured of their right to withdraw at any stage without any consequences.

## **Results**

The research indicates that financial limitations significantly hinder vaccine accessibility in the four states (table 1). In Taraba and Kano, the high transportation costs and ancillary expenses such as food and time lost from income-generating activities hinder caregivers, primarily daily wage workers, from prioritizing immunization. Marginalized populations, including single mothers, those with disabilities, and migrant families, are disproportionately impacted, suggesting that economic adversity connects with social fragility.

Notwithstanding the presence of strong national immunization policies and collaborations with WHO and UNICEF, systemic deficiencies impede the effective implementation of polio vaccination programmes (table 2). All states indicated implementation hurdles, including logistical issues in accessing rural regions (Taraba and Edo), insufficient finance (Abia), and security threats or monitoring deficiencies (Kano). Local government participation is apparent through resource coordination and outreach; nevertheless, these initiatives are frequently undermined by inadequate infrastructure, insufficient political will, or disjointed community engagement.

Misinformation and cultural ideas significantly influence community sentiments towards the polio vaccine across all four states (table 3). Prevalent beliefs encompass anxieties that the vaccine induces infertility or constitutes a component of a Western population control scheme. These convictions are particularly evident in Kano and certain regions of Taraba, where religious narratives and a historical mistrust of governmental health initiatives perpetuate scepticism. In comparatively cooperative states such as Abia and Edo, the dissemination of rumours regarding adverse effects (e.g., paralysis or immunological suppression) fosters reluctance. This issue highlights the necessity for culturally attuned communication tactics that directly confront deep-seated beliefs and foster trust in biomedicine.

Although radio broadcasts, door-to-door visits, posters, and religious announcements are commonly employed, the efficacy of these techniques differs by locale and audience (table 4). Direct human engagement, including house-to-house visits and community gatherings, proves to be the most effective approach, particularly in remote regions with restricted media access. Announcements from radio and religious leaders are beneficial but frequently lack frequency, clarity, or cultural relevance. Posters and flyers are often ineffectual for communities lacking

literacy. Notwithstanding these endeavours, disinformation endures, highlighting a disparity between communication transmission and message comprehension. Enhanced grassroots, culturally tailored, and engaging communication is essential.

The backing or opposition of leadership significantly influences immunization outcomes. In all states, endorsement from religious and traditional leaders is associated with increased compliance, as these individuals possess considerable trust (table 5). Conversely, when leaders dissent or remain reticent on the matter, it engenders confusion and resistance. Kano, specifically, displays extensive religious dissent, but in Abia and Edo, contradictory communications from prominent individuals erode communal confidence. Educators, legislators, and community influencers function as significant opinion leaders who can either narrow or exacerbate the trust disparity between health initiatives and the public.

Table 1: Economic barriers and influences that affect participation in polio vaccination programs in the selected states of Nigeria

Theme	Taraba	Abia	Edo	Kano
<b>Transportation Costs</b>	High cost of transport to vaccination centres, especially for those in remote areas.	Public transport is unreliable and expensive, making travel difficult.	Some families cannot afford bus or motorcycle fares to vaccination sites.	Families struggle with transport expenses, especially in remote areas.
<b>Lost Income</b>	Caregivers, mostly farmers and traders, lose income when they leave work to attend vaccination sessions.	Daily wage earners and traders miss a day's income if they attend vaccination sessions.	Many rely on daily wages and cannot afford to miss work for vaccination.	Parents working as traders or farmers lose money when they take time off for vaccination.
<b>Indirect Expenses</b>	Families fear hidden costs, such as payment for medical supplies.	Parents may need to buy food/snacks for children during long vaccination sessions.	Costs of food and travel for follow-up doses add up over time.	Some caregivers worry about additional expenses like food or supplies needed during vaccination trips.
<b>Lack of Economic Incentives</b>	Many families feel that they should receive transport subsidies or allowances to encourage participation.	Stipends for transportation would help, but some parents still distrust vaccines despite incentives.	Financial support or free services encourage participation, especially for low-income families.	Incentives like free transportation or stipends increase vaccination turnout.
<b>Marginalized Groups</b>	Single mothers, orphaned children, and people with disabilities struggle to access vaccination services.	Rural dwellers, displaced persons, and seasonal workers miss vaccinations due to economic barriers.	Migrant families, disabled caregivers, and families in conflict areas face more difficulties.	Low-income families, single mothers, and indigenous groups have limited financial resources for accessing vaccination.

Table 2: Role of institutional structures and government policies in shaping compliance with polio vaccination efforts across the selected states of Nigeria

Theme	Taraba	Abia	Edo	Kano
<b>Government Policies</b>	Routine immunization as part of the National Immunization Schedule; collaboration with WHO and UNICEF.	National Immunization Schedule mandates polio vaccination at specific intervals.	Strict cold chain regulations for vaccine storage and handling; integration of polio vaccination with other healthcare services.	National immunization policy ensures routine vaccination and mass campaigns.
<b>Role of Healthcare Facilities</b>	Administer vaccines, track coverage, and provide education to caregivers.	Serve as key centres for vaccine administration and tracking coverage.	Ensure vaccines are properly stored and administered per protocol.	Primary health centres (PHCs) manage immunization services and vaccine distribution.
<b>Role of Local Government</b>	Coordinates resources, monitors vaccination efforts and ensures outreach in underserved areas.	Provides logistical support and mobilizes vaccination teams.	Supports immunization campaigns by ensuring logistics, outreach, and security.	Oversees mobilization, provides logistical support, and works with traditional leaders.
<b>Challenges in Policy Implementation</b>	Logistical hurdles in reaching remote areas, vaccine hesitancy in some communities.	Funding inconsistencies, vaccine misinformation, and inadequate community engagement.	Limited infrastructure in remote areas, vaccine wastage due to poor cold chain management.	Insecurity, religious resistance, and inadequate monitoring of vaccination efforts.

Table 3: Impact of community beliefs and misinformation on public perception and adherence to polio vaccination campaigns across the selected states in Nigeria

Theme	Taraba	Abia	Edo	Kano
<b>Vaccine Causes Infertility</b>	Belief that polio vaccine leads to infertility, discouraging parents from vaccinating their children.	Some parents fear their children, especially girls, will become infertile after receiving the vaccine.	Misinformation that the vaccine causes reproductive harm is widespread in rural areas.	Many people worry about infertility risks, causing hesitation and non-compliance.
<b>Vaccine as a Western Conspiracy</b>	Concerns that the polio vaccine is part of a Western plot to control population growth.	Some international organizations use the vaccine to harm African children.	Fear that the vaccine is a hidden agenda to reduce the African population.	Widespread belief that polio vaccination is a form of Western control.
<b>Vaccine Side Effects</b>	Rumours that children develop fever, rashes, or other illnesses after vaccination.	Concerns that polio vaccine weakens a child's immune system, leading to other diseases.	Misinformation that the vaccine causes paralysis or brain damage.	Fear that vaccinated children may develop disabilities, making parents avoid it.
<b>Religious Beliefs &amp; Resistance</b>	Some parents believe faith alone protects children, making vaccination unnecessary.	Religious leaders discourage vaccination, citing it as unnecessary for faithful followers.	Resistance due to religious teachings that claim divine protection is enough.	Religious objections lead to vaccine refusal, despite awareness campaigns.
<b>Mistrust in Health Workers &amp; Government</b>	Rumours that health workers secretly harm children or experiment with vaccines.	Lack of trust in health officials fuels vaccine hesitancy in some communities.	Some believe vaccination campaigns serve hidden government agendas.	Fear that health workers may use harmful or expired vaccines discourages participation.

Table 4: Effectiveness of current communication strategies used in promoting polio vaccination and their impact on compliance rates across the selected states in Nigeria

Theme	Taraba	Abia	Edo	Kano
<b>Radio Broadcasts</b>	Commonly used; local radio stations announce vaccination dates and benefits.	Effective but sometimes unclear or late announcements.	Broadcasts in local dialects help spread awareness.	Radio announcements are a primary source of information but need more frequency.
<b>Community Meetings</b>	Health workers and leaders hold meetings to answer questions.	Community leaders invite health workers to educate parents.	Effective in rural areas where many gather for meetings.	Religious and community gatherings serve as platforms for health talks.
<b>House-to-House Visits</b>	Trusted health workers visit homes to educate and remind families.	Parents prefer direct contact with health workers for clarification.	Effective for reaching those without access to media.	Essential for rural and underserved areas with limited media access.
<b>Religious Leaders</b>	Pastors and imams announce vaccination campaigns during services.	Church leaders play a role in mobilizing participation.	Religious figures endorse vaccination to increase trust.	Religious leaders' support is crucial in overcoming hesitancy.
<b>Posters and Flyers</b>	Displayed in marketplaces, schools, and health centres.	Some people do not read them, limiting effectiveness.	Visual aids help those who are illiterate.	Bright images and simple messages work best.
<b>Word of Mouth</b>	Information spreads through friends and family.	Parents share updates with each other in social spaces.	Trusted community members play a role in awareness.	Rural communities rely heavily on interpersonal communication.
<b>Challenges Identified</b>	Some people lack access to radios and social media.	Messages sometimes do not align with cultural beliefs.	Need for more house-to-house sensitization.	Misinformation remains a barrier despite efforts.

Table 5: Influence of religious, traditional, and Opinion Leadership on community attitudes towards polio vaccination programs across the selected states in Nigeria

Theme	Taraba	Abia	Edo	Kano
<b>Religious Leaders' Support</b>	When religious leaders endorse polio vaccination in their sermons, it increases trust and participation.	Church and mosque leaders play a key role in encouraging vaccination among followers.	Religious leaders help clarify myths about vaccination, increasing confidence.	Strong influence: when religious leaders advocate for vaccination, acceptance improves.
<b>Religious Leaders' Opposition</b>	Some religious leaders discourage vaccination, citing faith-based concerns.	A few leaders express doubts, leading to community hesitancy.	If religious figures are silent or oppose vaccination, many parents refuse to vaccinate.	Widespread religious opposition in some areas leads to vaccine refusal.
<b>Traditional Leaders' Role</b>	Elders and chiefs promote vaccination through community meetings.	Traditional leaders' endorsements help in gaining community acceptance.	Elders educate people about past polio cases, reinforcing the need for vaccination.	Traditional rulers influence attitudes, but resistance exists in conservative communities.
<b>Opinion Leaders' Role</b>	Teachers, local influencers, and business leaders play a role in spreading awareness.	Politicians and activists use local events to advocate for vaccination.	Opinion leaders bridge the gap between health officials and the public.	Strongly trusted; if they endorse vaccination, many follow suit.
<b>Impact of Leadership Disagreements</b>	Conflicting messages among leaders cause confusion and hesitation.	Mixed messages from religious and traditional leaders reduce compliance.	If key leaders disagree, the community remains divided on vaccination.	Strong disagreements among religious and community leaders weaken trust in vaccination programs.

### **Discussion of Findings**

This study examined the multiple drivers of non-compliance to polio vaccination programs in four Nigerian states, namely: Taraba, Abia, Edo, and Kano through themes categorized in five major areas that is economic barriers, institutional structures, community beliefs, communication strategies, and the influence of religious and traditional leadership.

Economic constraints emerged as a significant factor influencing vaccine uptake in the study States. Across the states, caregivers reported challenges such as high transportation costs, income loss from time taken off work, and concerns over indirect expenses like food and supplies during vaccination visits. These findings are consistent with existing literature highlighting those out-of-pocket costs, even when vaccines are free, can deter low-income families from participating in vaccination programs (Ozawa *et al.*, 2019). Additionally, the absence of economic incentives was noted as a demotivating factor, especially for marginalized populations such as single mothers and internally displaced persons. Incentive-based interventions, such as conditional cash transfers or transport stipends, have been shown to increase vaccine coverage in low-resource settings (Banerjee *et al.*, 2010), suggesting their potential utility in Nigerian states with poor coverage.

The role of government policies and health institutions was also explored. Although the National Immunization Schedule mandates polio vaccination, implementation challenges persist. Health centres and local governments serve as the frontlines of vaccination delivery; however, participants noted weak coordination, poor outreach logistics, and cold chain failures in some areas. For instance, in Edo and Taraba, remote and underserved communities experienced delays or missed vaccinations due to logistical shortcomings. These structural gaps are echoed in findings by Jegede (2007), who emphasized the need for improved healthcare infrastructure to support immunization programs. Additionally, policy inconsistencies and lack of community engagement were cited as barriers to successful execution, aligning with previous observations that central policies often fail to translate effectively at local levels in Nigeria (Ophori *et al.*, 2014).

Sociocultural beliefs and misinformation remain powerful deterrents to vaccine acceptance. Myths such as the vaccine causing infertility, being part of a Western conspiracy, or leading to severe side effects were commonly reported across all four states, especially Kano and Taraba. These misperceptions are not new; studies have long identified cultural and religious scepticism as barriers to polio eradication in northern Nigeria (Yahya, 2007). Misinformation, often disseminated through community networks, has led to mistrust in both government health workers and the vaccines themselves. This aligns with findings from Larson *et al.* (2016), which identified trust deficits and social narratives as core elements of vaccine hesitancy worldwide. The role of religious doctrines that prioritize divine protection over medical intervention was also significant in promoting resistance to polio immunization. Also, a study by Babylon *et al.* (2025) documented how cultural resistance, misinformation, and traditional health beliefs serve as major barriers to childhood immunization.

Effective communication was recognized as an important component for improving vaccination compliance. Radio announcements, community meetings, house-to-house visits, and acceptance by religious leaders were among the most utilized strategies. Participants especially valued interpersonal communication, such as house visits and discussions during religious meetings, over impersonal means like posters and flyers. This preference reflects the findings of Adebowale *et al.* (2021), who stressed the importance of localized, culturally sensitive messaging in public health campaigns. Nevertheless, challenges such as lack of access to radio, timing of announcements, and misalignment of messages with local beliefs limited the overall effectiveness of communication efforts. The persistence of misinformation, despite these strategies, suggests that communication must be more targeted, frequent, and community led. Finally, the study revealed the influential role of community leaders. Where religious and traditional leaders supported vaccination, compliance increased markedly; conversely, their opposition fostered mistrust and refusal. Kano and parts of Edo exhibited strong resistance linked to religious scepticism, confirming the pivotal role such figures play in shaping public health behaviour (Kaufmann & Feldbaum, 2009). Disagreements among community influencers led to conflicting messages, contributing to confusion and hesitancy, especially in rural and conservative settings. Engaging these leaders through capacity-building and trust-building measures could enhance community buy-in, as they act as gatekeepers to community behaviour and attitudes (Olumide *et al.*, 2020).

### **Conclusion**

This study reveals that non-compliance to polio vaccination programs in Taraba, Abia, Edo, and Kano states is caused by a combination of interrelated factors. Economic barriers such as transportation costs and lost income limit caregivers' ability to access vaccination services. Institutional challenges including inconsistent vaccine supply and poorly timed immunization sessions reduce service effectiveness. Deep-rooted community beliefs and cultural misconceptions contribute significantly to vaccine hesitancy, often reinforced by misinformation. Communication strategies that fail to adequately engage and inform communities further exacerbate resistance. Additionally, the critical influence of religious and traditional leaders shapes public attitudes either facilitating acceptance or reinforcing refusal depending on their stance.

### **Recommendations**

- i. Local Government Authorities (LGAs) and partner Non-Governmental Organizations (NGOs) should implement economic support measures such as transportation subsidies, mobile vaccination clinics, and flexible immunization schedules to reduce the financial burden on families and improve vaccine accessibility.
- ii. State Ministries of Health and the National Primary Health Care Development Agency (NPHCDA) must prioritize improving vaccine availability by preventing stockouts and ensuring consistent immunization sessions that align with caregivers' schedules.

- iii. Public Health Communication Teams and Community-Based Organizations (CBOs) should design culturally sensitive educational campaigns that address myths and misinformation, emphasizing the safety and benefits of polio vaccination tailored to specific community beliefs.
- iv. Community Development Officers and Local Government Councils need to actively engage, train, and support influential religious and traditional leaders to promote vaccination, counteract resistance, and build trust within their communities.
- v. Healthcare workers and Monitoring & Evaluation Officers should establish regular reminder systems, provide personalized counselling, and use clear messaging through multiple channels to address caregivers' concerns and encourage timely vaccine compliance.

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