Scientific Research Publishing

Advances in Infectious Diseases, 2025, 15(2), 192-213
https://www.scirp.org/journal/aid
ISSN Online: 2164-2656
ISSN Print: 2164-2648

Patients' Decisions and Treatment Options in Nigeria's Lassa Fever Epidemic: Resilience of the Decentralised Healthcare System

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How to cite this paper: Achem, V.O., Guilavogui, J.P.Y., Ayodeji, O.O. and Ikiakhele, R.O. (2025) Patients' Decisions and Treatment Options in Nigeria's Lassa Fever Epidemic: Resilience of the Decentralised Healthcare System. *Advances in Infectious Diseases*, **15**, 192-213.
https://doi.org/10.4236/aid.2025.152016

Received: February 17, 2025
Accepted: April 20, 2025
Published: April 23, 2025

Abstract

Lassa fever (LF) remains a formidable public health challenge in Nigeria, necessitating extensive research to unravel its complex epidemiological dynamics. This study explores the pivotal role of treatment decentralisation in optimizing Lassa fever case management and outbreak responses, focusing on healthcare professionals' perspectives. Employing qualitative research methodologies, we conducted in-depth key informant interviews with 15 healthcare professionals actively engaged in Lassa fever case management in Owo, Ondo State, Nigeria. Guided by the theory of planned behaviour, this research investigates how misconceptions shape patient behaviour and, consequently, treatment outcomes. Our findings illuminate the critical challenges associated with Lassa fever case management, including patient behaviour, facility congestion, and support from other healthcare institutions. Notably, some patients harbour misconceptions regarding Lassa fever, which leads them to pursue alternative treatments prior to seeking professional medical interventions. The propensity towards seeking treatment at faith-based hospitals often stems from faith and a belief in divine intervention as a means of recovery from Lassa fever. Persistent congestion at the primary treatment facility emerges as a recurring issue during Lassa fever outbreaks. To address this challenge, it becomes essential to collaborate with research and donor organizations, aimed at providing support and training to local healthcare providers to deliver Lassa fever treatment and care. This strategic move takes some of the pressure off the main facility, making sure that patients can get to it quickly. This collaborative approach is particularly invaluable during peak outbreak periods when the central facility faces congestion. By addressing patient misconceptions, mitigat-

ing facility congestion, and reinforcing support for other healthcare centres, we pave the way for more efficient and timely management of Lassa fever cases and related diseases.

Keywords

Lassa Fever, Decentralised Healthcare System, Patient-Treatment Interaction, Misconceptions, Outbreak Response

1. Introduction

Lassa fever (LF) is a viral hemorrhagic illness endemic to West Africa, with Nigeria bearing a substantial burden of the disease [1]. The Lassa virus (LASV) is primarily transmitted through contact with Mastomys rodents, leading to recurrent outbreaks that strain public health infrastructure [2] [3]. The disease presents with a wide spectrum of clinical manifestations, ranging from mild febrile illness to severe complications such as acute kidney injury, abnormal bleeding, and multi-organ failure, contributing to a pooled mortality rate of 19% among hospitalised patients [4] [5]. Although early diagnosis, supportive care, and ribavirin administration remain the cornerstones of treatment, limitations in healthcare access, late presentation, and gaps in diagnostic capacity continue to hinder patient outcomes [6] [7].

Despite existing control measures, including surveillance, early detection, and infection prevention strategies, persistent outbreaks highlight the inadequacy of current response mechanisms. Between 2020 and 2023, Nigeria reported 28,780 suspected and 4036 confirmed cases, with a case fatality rate of 18.9%, underscoring the ongoing threat posed by LF [8]. Furthermore, studies show that there are big gaps in people's knowledge. For example, 35.43% of people don't understand how LF spreads and how to stop it. People in high-burden states are more aware of the risk and think it's higher than people in low-burden regions [8]. Although awareness levels in urban centres such as Abuja are relatively high, sustaining positive attitudes toward LF prevention necessitates continuous community engagement and education [9].

Beyond its clinical and epidemiological impact, LF exerts significant socio-economic burdens on affected communities. Outbreaks disrupt local economies, increase healthcare expenditures, and lead to the stigmatisation of patients, particularly in rural settings where healthcare infrastructure remains weak [10]. The economic consequences include productivity losses, job insecurity, and reduced foreign investment due to public health concerns [10]. Addressing these multifaceted challenges requires an integrated approach that strengthens healthcare capacity, improves diagnostic accessibility, and enhances public health education.

In response to these pressing issues, decentralisation has gained traction as a strategy to mitigate healthcare congestion, expand treatment access, and facilitate timely intervention. Decentralised care models have the potential to address lo-

gistical bottlenecks, reduce barriers to care, and enhance patient outcomes, particularly in underserved regions. This study examines the effectiveness of decentralisation in improving LF case management by analysing its implementation, associated challenges, and broader implications for outbreak responses. The goal of this study is to help make LF management strategies in Nigeria more effective and fairer by looking at how they affect healthcare access, patient engagement, and public health preparedness.

Socio-Cultural Context of Owo and Lassa Fever Case Prevalence

Owo is a vibrant and historically significant city located in the tropical rainforest zone of Nigeria [11]. Its geographical position, situated between latitude 7.1957˚N and longitude 5.5913˚E, places it within the lush vegetation of the equatorial region [12]. This tropical setting has a significant impact on the local climate, characterized by a humid atmosphere with distinct wet and dry seasons [13]. Average annual temperatures range from 25˚C to 35˚C, and the region experiences substantial rainfall from April to October [14]. Oyeniyi (2022) reveals that agriculture plays a central role in Owo's economy and daily life [13]. The fertile soil, coupled with the favourable climate, supports the cultivation of essential crops such as cocoa, yam, cassava, maize, and palm produce. These agricultural activities serve as the primary occupation for most of the population, providing livelihoods and contributing to the food security of the region. Beyond agriculture, Owo is renowned for its traditional craftsmanship and artistic heritage. The city is celebrated for its intricate wood carvings, brass works, and pottery [15]. These traditional crafts not only serve as a source of income for local artisans but also hold cultural significance, shaping the identity of the community [15]. (**Figure 1**)

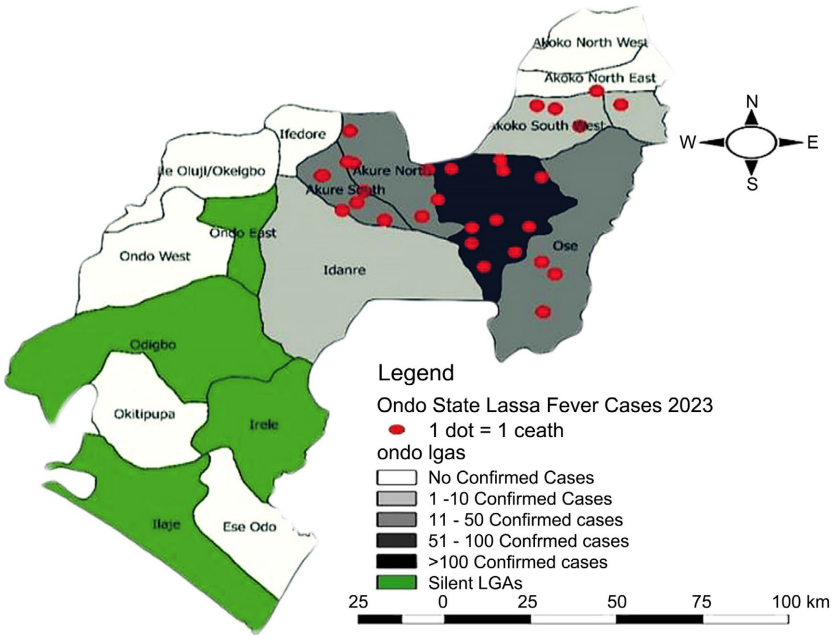

Figure 1. Map of Owo, Ondo state showing Lassa fever prevalence between 2020-2023.

In the political context, Owo falls under the jurisdiction of the Ondo State government, specifically the Owo Local Government Area. An elected chairman and councilors, representing various wards within the city, govern Owo [11]. Additionally, traditional rulers, known as the Olowo of Owo, wield considerable influence and contribute to the governance and administration of the community. Socioculturally, Owo has a rich history and cultural heritage. The Owo indigenes maintain a distinct language, traditions, and customs that have been preserved over generations. The city's festivals, such as the Igogo Festival, are annual celebrations that showcase the cultural heritage of the Owo people and attract visitors from across Nigeria and beyond, bolstering socio-cultural tourism in the region [16]. Despite its cultural richness and agricultural productivity, Owo faces socioeconomic challenges. Poverty, limited access to healthcare, and education are prevalent issues. Particularly concerning is the region's vulnerability to infectious diseases like Lassa fever, as highlighted in this study [17]. Lassa Fever is a prevalent infectious disease that has been a persistent problem in Owo, Ondo State, in Nigeria. Despite various risk communication and preventive measures implemented by the government, the transmission of Lassa fever continues to occur on an annual basis in the state [18]. Efforts to control Lassa fever in Ondo State have involved engaging the population and providing education on the matter [19]. However, despite the preventive measures, knowledge and practices related to Lassa Fever infection prevention and control remain poor among health workers in Nigeria [20]. It is evident that Lassa Fever is a persistent problem in Owo, Ondo State, Nigeria. Despite efforts by the government and other stakeholders, sustained transmission of the disease continues to occur. Likewise, another study emphasised that prevention and control measures primarily focus on community hygiene practices and public engagement initiatives [21]. Disease surveillance and healthcare infrastructure are critical concerns for the community.

Further research and intervention efforts are necessary to address the ongoing challenges related to Lassa fever in Owo, Ondo State. In the occupational sphere, agriculture remains vital, and the impact of diseases like Lassa fever on local livelihoods underscores the importance of disease management [22]. Politically, Owo's influence extends beyond its borders, making it a potential advocate for improved healthcare infrastructure and public health policies. Sociocultural factors influence health-seeking behaviours and traditional healing practices, necessitating a culturally sensitive approach to healthcare planning. Furthermore, socioeconomic disparities affect access to essential services, making it imperative to address them in public health initiatives [18]. Owo, situated in Ondo State, Nigeria, is a dynamic city at the intersection of geographical, health, occupational, political, sociocultural, and socioeconomic influences. Its vulnerability to diseases like Lassa fever shows that it needs a broad, multidisciplinary approach to deal with health problems, improve healthcare infrastructure, boost socioeconomic growth, and protect its rich cultural heritage. This holistic perspective is crucial for the well-being and prosperity of Owo's residents in the face of evolving health threats.

2. Methodology

2.1. Study Design

This study employs a qualitative research design, utilising key informant interviews to explore the role of decentralisation in Lassa fever case management. The study population consists of healthcare professionals actively engaged in Lassa fever treatment at the Federal Medical Centre (FMC) in Owo, Ondo State, Nigeria. Participants were selected based on purposive sampling to ensure firsthand experience and expertise in Lassa Fever management. Inclusion criteria required participants to have direct involvement in Lassa Fever case management and experience with at least two previous Lassa Fever outbreaks to capture informed perspectives on system challenges and responses.

To ensure diversity and comprehensive representation of healthcare roles as noted in Table 1, the study included 15 professionals spanning different specialties: case management and study nurses, case management physicians, a consultant physician, laboratory scientists, and facility hygienists. This selection was intentional, reflecting the multidisciplinary nature of Lassa Fever management, where both clinical and non-clinical staff play crucial roles. The inclusion of laboratory scientists provided insights into diagnostic challenges, while facility hygienists contributed perspectives on infection control measures within decentralized care structures. By incorporating a range of expertise, the study ensures a holistic analysis of Lassa Fever case management within the public health system.

Table 1. Population and distribution of instrument.

Instrument (Guide)	Target Population	Number
Key Informant Interview	Study Nurse	2
Key Informant Interview	Case Management Nurse	5
Key Informant Interview	Case Management Physician	3
Key Informant Interview	Consultant Physician	1
Key Informant Interview	Lab Scientists	2
Key Informant Interview	Hygienist	2

2.2. Data Collection

Key informant interviews were conducted as the primary data collection method, offering a detailed and context-specific understanding of Lassa Fever case management within Nigeria's healthcare system. Interviews were conducted in person depending on participant availability, ensuring broad participation while adhering to ethical considerations. A semi-structured interview format was employed, allowing for open-ended questions that facilitated in-depth discussions, ensuring flexibility to explore emergent themes beyond predefined questions.

2.3. Ethical Considerations

Prior to participation, informed consent was obtained from all interviewees, en-

suring voluntary participation and comprehension of the study's objectives. Participants were provided with detailed information regarding the study's purpose, potential risks, and the measures taken to safeguard confidentiality and data security. Explicit permission was sought for audio recording to maintain data integrity, with assurances that anonymity would be preserved.

Beyond standard ethical protocols, the study also considered the ethical complexities inherent in decentralized Lassa fever treatment. The decentralization process raises critical issues such as patient autonomy, equitable access to care, and informed consent in settings where healthcare infrastructure varies significantly. In decentralized settings, patients may face disparities in the quality of care, necessitating ethical safeguards to ensure that all treatment sites uphold standardized protocols. Additionally, ensuring that patients fully understand the risks, benefits, and available treatment options in decentralized care settings remains a priority for ethical governance. Addressing these concerns requires continuous monitoring, adequate training for healthcare providers, and policy frameworks that align with global ethical standards in epidemic response.

2.4. Data Analysis

The transcribed interviews underwent a rigorous thematic analysis to extract meaningful insights into Lassa Fever case management. Using **Atlas.ti 8.0**, the analysis followed a systematic approach to ensure credibility and reliability.

2.4.1. Interview Structure and Data Processing

Each interview lasted between 45 to 90 minutes, depending on the depth of discussion and participant engagement. A semi-structured format allowed for open-ended and probing questions, enabling participants to share their experiences, perceptions, and recommendations regarding Lassa Fever treatment protocols and decentralisation. The interviews encouraged narrative storytelling, where participants recounted real-life cases and specific insights. Reflexive follow-up questions ensured clarity and depth in responses, capturing a nuanced understanding of their perspectives.

2.4.2. Thematic Analysis Approach

Data analysis began with a thorough review of the transcripts to ensure familiarity with the content. Open coding was then conducted using **Atlas.ti 8.0**, where key excerpts were tagged based on their relevance to the research objectives. This coding process was both inductive, allowing themes to emerge naturally from the data, and deductive, aligning findings with the study's conceptual framework. Following the initial coding, related data segments were grouped into broader categories, reflecting recurring challenges, decision-making patterns, and the effectiveness of decentralisation in Lassa Fever case management. A hierarchical structure helped organise primary themes and subthemes, ensuring coherence in the analysis. Data saturation was carefully assessed to confirm that all significant perspectives were captured without unnecessary repetition.

To validate the identified themes, findings were cross-referenced with existing literature and reviewed through peer debriefing with research team members. The analysis also examined patterns across different professional roles, including physicians, nurses, laboratory scientists, and hygienists to distinguish both role-specific and overarching challenges. Synthesising these themes into actionable insights provided a basis for policy recommendations aimed at improving decentralised Lassa Fever case management.

2.5. Theory of Planned Behaviour (TPB): Understanding the Role of Misconception on Patients' Decision for Treatment Uptake in Lassa Fever Case Management

Misconceptions, as they relate to healthcare decisions, have a profound impact on patient behaviour and treatment outcomes. The study looked at misconceptions and how they affect attitudes, subjective norms, and perceived behavioural control in the context of treating Lassa fever. It used the Theory of Planned Behaviour to do this. The study stressed how important it is to address and fight these misconceptions. The Theory of Planned Behaviour (TPB) is a widely recognised social psychology model that explains human behaviour and decision-making. It was developed by Icek Ajzen, a renowned psychologist and professor at the University of Massachusetts, in 1985 [23]. According to the Theory of Planned Behaviour, human behaviour is determined by three main factors: attitudes, subjective norms, and perceived behavioural control [24]. Attitudes refer to an individual's positive or negative evaluation of a specific behaviour; subjective norms involve the influence of social pressure and the perceived expectations of others; perceived behavioural control relates to the individual's perception of their ability to perform the behaviour [25].

2.5.1. Attitudes

The Theory of Planned Behaviour posits that attitudes play a pivotal role in shaping an individual's behaviour. Misconceptions can significantly affect attitudes towards healthcare decisions. Patients may develop negative attitudes towards evidence-based medical care if they have misconceptions about the effectiveness of alternative remedies. This can lead to delayed or inadequate treatment seeking. As shown by scientific evidence, individuals' beliefs can strongly influence their treatment choices [26]. Therefore, healthcare interventions for Lassa fever patients should include efforts to correct misconceptions and promote positive attitudes towards evidence-based medical care.

2.5.2. Subjective Norms

Subjective norms represent the influence of others' opinions and expectations on an individual's behaviour. Misconceptions within a patient's social network can create pressure to conform to these false beliefs. Patients may feel encouraged or discouraged from seeking appropriate medical care based on the prevailing misconceptions among their peers or family. The study by on cancer patients' quality of life highlights the negative impact of misbeliefs on well-being, which is appli-

cable in the context of Lassa Fever [27]. Thus, healthcare providers should not only focus on patient education but also on educating the patient's social circle to ensure a supportive environment for evidence-based treatment choices.

2.5.3. Perceived Behavioural Control

Perceived behavioural control reflects an individual's confidence in their ability to perform a specific behaviour. Misconceptions can influence this perception by leading patients to believe that certain treatment options are more accessible, affordable, or less burdensome than evidence-based medical care. Similarly, another study on fertility treatment among adults with sickle cell disease demonstrates how misconceptions can impact healthcare decisions [28]. In the case of Lassa Fever, healthcare providers must address patients' misconceptions about treatment options to ensure that patients make informed choices and feel confident in their decisions.

2.5.4. Counteracting Misconceptions

The adverse consequences of misconceptions on healthcare decisions have been highlighted by [29] in their study on the uptake of treatment for opioid use disorder. Their findings underscore the importance of countering misinformation in healthcare. For Lassa fever, efforts to counteract misconceptions should include patient education, clear communication by healthcare providers, and the dissemination of accurate information through various channels. Similarly, a study on dispelling myths and misconceptions about acute hyperkalaemia treatments emphasises the need for accurate information to improve patient outcomes [30]. Likewise, healthcare providers must prioritise the dissemination of accurate information to counter misconceptions and enhance the effectiveness of Lassa Fever treatment strategies. Certainly, misconceptions have far-reaching implications for patients' behaviour and treatment decisions in the context of Lassa fever and healthcare in general. Recognising the influence of misconceptions on attitudes, subjective norms, and perceived behavioural control and taking proactive steps to counteract them is crucial for improving patient outcomes and ensuring that individuals make informed and evidence-based healthcare choices. This theoretical analysis underscores the need for targeted interventions to address and correct misconceptions, ultimately enhancing the quality of healthcare decision-making.

3. Key Findings

The narratives derived from key informant interviews shed light on crucial aspects of decentralization in Lassa Fever case management in Ondo State, Nigeria. These findings provide valuable insights into the critical challenges in patient health-seeking behaviour, the systemic strain on treatment facilities, and the role of capacity-building initiatives aimed at strengthening healthcare infrastructure for Lassa Fever response.

3.1. Patient Health-Seeking Behavior

The data reveal a prevalent trend of self-medication among patients who initially

misattribute Lassa Fever symptoms to more common febrile illnesses such as malaria or typhoid. Many individuals resort to over-the-counter medications, patronise local patent store, or rely on traditional herbal remedies before seeking professional medical intervention. The persistence of ineffective self-treatment often leads to delays in appropriate case management. A distinctive pattern observed is the preference for missionary hospitals, where patients perceive a dual approach to healing, both medical and spiritual. This inclination is largely driven by the belief that their illness has a supernatural dimension, necessitating divine intervention alongside biomedical treatment. The implications of such health-seeking behaviours highlight the need for targeted health education campaigns to dispel misconceptions and encourage early medical consultation.

3.2. Overcrowding at Specialized Treatment Centers

Lassa Fever outbreaks precipitate an overwhelming patient influx at the Federal Medical Centre (FMC) in Owo, the primary referral facility for Lassa Fever management in Ondo State. Chronic congestion at FMC Owo exacerbates the risk of nosocomial infections, compromises the efficiency of patient care, and stretches available resources beyond capacity. In response to this systemic challenge, a research-based international non-governmental organization (INGO) facilitated a strategic intervention by providing training, logistical support, and medical equipment to nearby healthcare facilities at one point in time. This initiative enabled selected hospitals and health centres in proximity to FMC Owo to integrate Lassa Fever management into their services. The decentralization of care pathways stands crucial in mitigating patient overload and optimizing resource allocation within a broader healthcare network.

3.3. Strengthening Peripheral Healthcare Facilities

Beyond the reinforcement of missionary hospitals, the study also highlights the enhanced role of the Ondo State Reference Hospital in Akure (ODSRH, formerly called the Infectious Disease Hospital - IDH) as a secondary treatment site. The ODSRH plays a pivotal role in sample collection, patient admissions, and the provision of specialised Lassa Fever treatment. Particularly during peak transmission seasons, this facility functions as an essential extension of FMC Owo, easing the strain on the primary treatment center. The redistribution of case management responsibilities ensures greater accessibility to care while enhancing the overall efficiency of the Lassa Fever response system. These findings collectively present the interaction between patient behaviour, healthcare infrastructure, and systemic response mechanisms in the management of Lassa Fever in Ondo State.

4. Discussion of Findings

4.1. Complexities Surrounding the Adoption of Decentralised Lassa Fever Response Mechanisms

The decentralisation of health systems presents several complexities, particularly

in the management and treatment of Lassa Fever. Findings from this study reveal that many patients opt for alternative treatments, including traditional medicine and faith-based healthcare rather than seeking care at designated Lassa Fever treatment centres. This preference is influenced by multiple factors, including negative perceptions of formal treatment facilities, deep-seated cultural beliefs, and the structural limitations inherent in decentralised healthcare delivery as observed in Table 2.

Table 2. Thematic composition on complexities surrounding decentralisation.

Treatment Decision	Treatment Alternatives	Possible Outcome
Negative Perceptions	Symptomatic neglect	Desensitization
Faith And Traditional Beliefs	Faith based consultations	Late presentation
Wrong Narratives	Herbs and Traditional medicine	Increased mortality

One of the most critical challenges to decentralising Lassa Fever response mechanisms is the prevailing misinformation and mistrust surrounding treatment centres, particularly the Federal Medical Centre (FMC) in Owo. Key informants noted that some members of the community avoid these centres due to misconceptions about the quality of care provided; they often believe that seeking treatment at these facilities is either futile or associated with negative outcomes. Instead, they turn to traditional remedies such as *Agbo*, a locally made herbal concoction, or faith-based healthcare facilities, where healing is perceived as a divine intervention rather than a medical process. As one healthcare provider explained:

"*Due to the wrong perception and narratives about the Lassa fever treatment center in FMC Owo, some of the community members infected with* [*Lassa fever*] *will either try to take* '*Agbo*,' *a known traditional medicine made from herbs, or visit the missionary hospital. This is one of the reasons why the missionary hospital is being supported to treat and care for Lassa Fever patients who mostly visit this particular hospital based on their faith and belief in God to healing them*" **(KII/Nurse/Owo/15/09/2023)**.

This finding aligns with broader discussions in the literature on healthcare-seeking behaviours in contexts of weak health system trust. Studies have shown that religious and cultural beliefs often play a crucial role in shaping treatment preferences, particularly in settings where biomedical interventions are met with scepticism [31] [32]. The preference for missionary hospitals, despite their limited specialised capacity for Lassa Fever treatment, highlights the connection of health-seeking behaviour and deeply entrenched social and religious norms. Beyond issues of perception and trust, the study also highlights the structural limitations faced by decentralised Lassa Fever treatment centres. During periods of peak outbreaks, the primary treatment centre at FMC Owo often becomes overwhelmed, necessitating support from other facilities such as the Ondo State Reference Hospital in Akure. However, these decentralised facilities struggle with shortages of personnel, diagnostic tools, and medical supplies, which limits their ability to pro-

vide adequate care. This challenge mirrors broader concerns about the decentralisation of healthcare, as identified by Bossert [33], where decentralised systems often face difficulties in maintaining equitable resource distribution, coordinating service delivery, and ensuring adherence to national treatment protocols.

The challenges identified in the decentralisation of Lassa Fever treatment also resonate with the broader discourse on decentralised clinical trials (DCTs). While decentralisation is often promoted as a means of enhancing local responsiveness and improving healthcare access, existing research suggests that it frequently introduces governance and logistical challenges. Studies have documented how decentralised health systems can exacerbate regional disparities in service availability, particularly in low-resource settings where local governance capacity is weak [34]. Similarly, fragmented policy frameworks often hinder the effective integration of decentralised interventions within existing healthcare infrastructures, creating inconsistencies in service delivery [34].

For decentralised clinical trials, these challenges manifest in ethical and logistical complexities, as highlighted by recent studies [35] [36]. Ensuring participant protection, maintaining data privacy, and addressing regulatory inconsistencies remain persistent concerns. Although decentralised trials have the potential to enhance participant inclusion, particularly among hard-to-reach populations, they also risk reinforcing existing health inequalities if not carefully implemented [37]. Furthermore, despite increasing regulatory support for DCTs, adoption has been slower than anticipated due to operational difficulties and concerns from trial sponsors regarding data integrity and compliance [38]. The experiences from past infectious disease outbreaks, such as Ebola and COVID-19, provide valuable lessons for addressing these challenges. Some studies emphasise the critical role of community engagement and trust-building in ensuring the success of decentralised response efforts [39] [40]. Similarly, another research highlights how digital health technologies facilitated decentralised clinical trials during the COVID-19 pandemic, although ethical and logistical challenges persisted [41].

4.2. The Interplay of Local Norms, Perceptions and Treatment Choices

The decentralisation of treatment centres for Lassa Fever outbreaks presents several challenges, particularly in influencing patient choices regarding healthcare access. One of the critical challenges observed is the prevailing mistrust in centralised healthcare systems, which prompts many patients to seek alternative treatments, including traditional medicine and missionary hospitals. This is reflected in the narrative of a key informant who describes common patient behaviours:

"*Sometimes, these patients try to treat malaria and typhoid and when they don't feel better, they patronize the local pharmacy, or even traditional herbs and concoction which also ends up not working for them. At the end of the day, they think of visiting the missionary hospital as a better option where they can receive both spiritual and physical treatment for their ailing condition which is mostly as a result of the Lassa Fever disease*" **(KII/Med-doctor/Owo/15/09/2023)**.

This response highlights a sequential decision-making process wherein patients initially attempt self-treatment with over-the-counter medications before exploring alternative healthcare providers, ultimately resorting to missionary hospitals when other options fail. The literature corroborates these findings, emphasising how decentralisation can exacerbate perceptions of inequality and limited access to quality care, further reinforcing distrust of centralised systems [33]. Such mistrust weakens the credibility of government-managed treatment centres, leading patients to seek alternatives they perceive as more reliable and holistic. Another factor influencing patient choices is the persistent misconception surrounding Lassa Fever treatment centres. Interviews reveal that some community members infected with the Lassa virus opt for traditional medicine or missionary hospitals due to prevailing myths and misinformation about the treatment centre at the Federal Medical Centre (FMC), Owo. This tendency can be attributed to cultural beliefs, superstitions, and community narratives that frame centralised treatment centres as either ineffective or unsafe. Studies in global health echo this observation, noting that during past health crises such as the Ebola outbreak, misconceptions significantly influenced healthcare-seeking behaviours, necessitating targeted community engagement strategies to rebuild trust [39] [42] [43]. Effective social mobilisation efforts are critical in addressing these misconceptions, as evidenced by public health interventions that emphasise trust-building and transparency in healthcare delivery [39].

The implications of these misconceptions extend beyond individual patient choices, affecting the overall functionality of the healthcare system. Decentralised facilities, despite their potential to enhance accessibility, may struggle with underutilisation if community perceptions remain unfavourable. This can place an increased burden on centralised facilities, leading to overcrowding and resource depletion during outbreak or peak periods. Additionally, patients' preference for alternative treatment options can delay timely medical intervention, exacerbate disease severity, and contribute to higher morbidity and mortality rates. The impact of mistrust in centralised healthcare systems is well-documented in health research, particularly in relation to marginalised populations. Historical and systemic factors have contributed to a persistent reluctance to engage with formal healthcare institutions, leading individuals to explore alternative treatment modalities [44]. Mistrust is strongly correlated with negative health behaviours, such as vaccine hesitancy and non-compliance with medical advice, further complicating public health efforts [45]. Similar patterns have been observed among Ethiopian immigrant women, who often prefer traditional remedies over modern medical interventions due to longstanding scepticism about the healthcare system's reliability [46].

Religious beliefs also play a significant role in shaping healthcare decisions, as individuals may seek treatments that align with their spiritual convictions [47]. The preference for alternative medicine, while offering cultural and personal relevance, can impede access to essential healthcare services and perpetuate health disparities [46]. Structural reforms aimed at improving healthcare experiences,

fostering inclusivity, and addressing patient concerns can help mitigate these challenges [46]. While mistrust often drives patients toward alternative treatments, it is essential to recognise the complexity of these choices. Some individuals derive significant value from traditional and faith-based treatments, viewing them as holistic approaches that integrate spiritual and physical healing. Strengthening trust in decentralised treatment centres through transparency, improved service delivery, and inclusive policymaking will be instrumental in optimising healthcare access and outcomes for Lassa Fever patients.

4.3. Leveraging Decentralized Frameworks to Amplify the Effectiveness of Lassa Fever Response Mechanism

The decentralization of Lassa Fever treatment centers is a strategic approach employed by the government and partner organizations to address the challenges posed by overcrowded facilities, improve accessibility, and enhance response mechanisms. One of the participants narrated:

"*At Akure, we also support the Infectious Disease Hospital* (*IDH*) *to manage Lassa Fever response by collecting samples, admitting, providing treatment and care for patients. This has been helpful mostly during the peak periods of the Lassa Fever outbreak where the main treatment site at FMC Owo gets full and crowded*" **(KII/Consultant-physician/Owo/25/09/2023)**.

Overcrowding in the main facility at FMC Owo has been a challenge and could lead to delays in treatment and compromised patient care. As mentioned in the interview response, the main treatment facility at Federal Medical Centre (FMC) Owo in Ondo State, Nigeria, often becomes congested during Lassa Fever outbreaks. This overcrowding can lead to insufficient resources, limited capacity to accommodate patients, and compromised quality of care.

As shown in above Table 3, improving patient care in Lassa Fever case management centralises the composited adoption of a decentralisation strategy. By decentralising the treatment centres, the government and organisations can distribute the patient load across multiple healthcare facilities in close proximity, ensuring that services are not overwhelmed during outbreaks. This helps to alleviate the strain on the main facility and ensures that patients receive timely and appropriate care. By distributing the treatment centres, the pressure on FMC Owo is relieved, allowing more effective management of Lassa Fever cases and reducing the risk of nosocomial transmission.

Table 3. Thematic composition on leveraging decentralised frameworks.

Improving Patient Care	Accessibility and Patient Options	Strengthening Collaborations
Distrain on main facilities	Improving rural access to care	Train, equip, and support facilities
Resource availability	Offering alternatives for treatment centers	Coordinated approach among facilities
Patient load distribution	Respect for people's beliefs	Leveraging partnerships

Another objective behind decentralisation is to improve access to testing and treatment facilities. In some cases, community members infected with Lassa virus may opt for traditional medicine or visit missionary hospitals due to negative perceptions or narratives surrounding the main treatment facility. By supporting and equipping other hospitals and health centres in close proximity, as mentioned in the interview response, individuals have easier access to Lassa Fever treatment and care. This is particularly crucial in rural areas or areas with limited transportation options, where reaching the main treatment facility might be challenging for patients.

4.4. Decentralization in Infectious Disease Management: A Proven Success

In recent years, the global health landscape has witnessed a growing trend towards decentralisation of treatment facilities for disease outbreaks, particularly in Africa. This shift represents a significant departure from the traditional centralized healthcare systems, aiming to make healthcare services more accessible by bringing them closer to local communities. Studies have consistently demonstrated the efficacy of decentralisation in disease management in Africa [48] [49]. This approach, evident in the management of HIV/AIDS epidemics, has significantly increased access to healthcare services. Local health facilities, such as clinics and decentralized treatment centers, have played a pivotal role in expanding the reach of HIV/AIDS treatment programs. Moreover, these facilities have not only increased the number of individuals receiving treatment but have also contributed to a notable decrease in AIDS-related mortality rates [50].

Decentralisation has not been confined to HIV/AIDS management; it has also proven its worth during disease outbreaks. By bringing healthcare services closer to affected communities, decentralised treatment facilities have facilitated faster and more efficient responses to outbreaks, enabling timely diagnosis, treatment initiation, and containment of infectious diseases [51]. The Africa Centers for Disease Control and Prevention (Africa CDC) have played a pivotal role in promoting decentralisation efforts. Through partnerships and collaborative efforts with local institutions, the Africa CDC has worked to strengthen disease surveillance and response systems across the continent, including the establishment and support of decentralized treatment facilities. This collective approach aims to improve disease management in Africa [52].

4.5. Efficacious Decentralisation Techniques: Adoptive Insights from Practice

Ethiopia: The Health Extension Program in Ethiopia has been a remarkable success story in decentralising healthcare services for managing diseases like HIV/AIDS and malaria. The program involved training and deploying community health workers, resulting in improved access to treatment and prevention services in rural areas and a significant reduction in disease burden [53].

Rwanda: Rwanda's community-based health insurance system, Mutuelles de Santé, exemplifies a successful decentralised approach to healthcare delivery and outbreak management. The system ensures affordable access to healthcare services for the entire population, leading to early detection and response to epidemics like Ebola and cholera [54].

Nigeria: The Nigerian National Primary Healthcare Development Agency (NPHCDA) has adopted a decentralised approach to tackle disease outbreaks, particularly in the case of polio. The Polio Eradication Initiative by NPHCDA established community-based surveillance systems and engaged local healthcare workers, leading to successful disease control and prevention [55].

Uganda: Uganda's Village Health Team (VHT) strategy effectively decentralized healthcare services for managing diseases such as tuberculosis and HIV/AIDS. Trained community volunteers provide awareness, prevention, and treatment services at the grassroots level, leading to improved health outcomes and reduced disease transmission [56]. From the analysis of proven cases, the success of decentralization strategies in managing disease outbreaks in Africa is evident. Ethiopia, Rwanda, Nigeria, and Uganda have all demonstrated the positive impact of bringing healthcare services closer to communities. These examples provide valuable insights into how decentralisation can be a powerful tool for enhancing disease management.

4.6. Support and Training as a Major Component for a Successful Decentralisation in Lassa Fever Management

One of the key strategies used in decentralising the treatment centers is training. The government and partnering organisations provide training programs to equip healthcare professionals in other hospitals and health centres with the necessary skills and knowledge to effectively manage Lassa Fever cases. This includes training on diagnosis, treatment, infection prevention & control measures, and patient care. By expanding the pool of healthcare professionals capable of handling Lassa Fever cases, the response capacity is strengthened, and patients have increased access to timely and appropriate care. One of the medical practitioners narrated during an interview:

"*When there is an outbreak of the Lassa virus disease, the main facility at Federal Medical Center (FMC) Owo is usually congested since it is the main site for treatment and care in Ondo state, Nigeria. But overtime, it has been a problem and the hospital with a partnership and support from a research-based INGO has been able to train, equip and support some other hospitals and health centers within close proximity to manage Lassa Fever treatment and care. By so doing, the Lassa Fever response mechanism is strengthened and patients are able to access these supported facilities to get tested and admitted into the treatment corridor*" **(KII/Consultant-physician/Owo/22/09/2023)**.

In addition to training, there is also a focus on equipping the decentralized treatment centers. This involves providing the necessary medical equipment, supplies, and infrastructure to ensure that these centers are adequately prepared to

handle Lassa Fever cases. This may include providing personal protective equipment (PPE) for healthcare workers, diagnostic tools, medication, isolation units, and other essential resources. By ensuring that the decentralised treatment centres are properly equipped, the government and partnering organizations are able to enhance the quality of care provided to patients and improve the overall response to Lassa Fever outbreaks. A participant narrated thus:

"*Although, these facilities are supported to manage mild case and they could make referral for patients with critical condition because these facilities do not have the capacity and equipment to manage such cases. Just imagine a patient who needs dialyses due to AKI and other complications, it would be difficult for them to manage the case over there. Aside that, decentralisation has helped us control the amount of pressure and improved our quality of care for Lassa patients*" **(KII/Nurse/Owo/04/10/2023).**

Moreover, supporting other hospitals and health centres within close proximity is another important approach to decentralisation. This support can come in various forms, such as financial assistance, technical guidance, and resource sharing. By partnering with these facilities, the government and partners aim to strengthen their capacity to effectively respond to Lassa Fever cases. This includes establishing communication channels, sharing best practices, and facilitating coordination between the main facility and the decentralised centres. By supporting these centers, patients are able to access testing and treatment services closer to their communities, reducing the need for them to travel long distances to the main facility.

5. Conclusions

It is important to note that while decentralisation of treatment facilities has shown efficiency in managing disease outbreaks in Africa, challenges and barriers still exist. These include limited resources, inadequate infrastructure, and the need for ongoing capacity building. However, the complexities surrounding the adoption of a decentralised Lassa Fever response mechanism are multifaceted and underscore the challenges faced in managing this infectious disease. Patients affected by Lassa Fever often turn to alternative treatments due to a combination of negative perceptions, faith-based beliefs, and misconceptions about the quality of care provided at centralised treatment centres. These challenges are exacerbated during peak outbreaks when overcrowding strains the capacity of centralised facilities.

Insights from the literature on health system decentralisation and decentralised clinical trials highlight the broader challenges of ensuring equitable access, coordinating resources, and maintaining quality standards in the context of infectious disease outbreaks. Lessons from previous infectious disease outbreaks, like Ebola and COVID-19, emphasise the importance of community engagement and trust-building in decentralised treatment centres. The interplay of local norms and perceptions, as well as treatment facility selection, further complicates the adoption of decentralised Lassa Fever response mechanisms. Mistrust in centralised healthcare systems and misconceptions about treatment centres drive patients to seek alternative options, ultimately affecting the use of decentralised facilities.

However, decentralisation remains a promising strategy for addressing these challenges. By distributing the patient load, improving accessibility, and enhancing response mechanisms, decentralised treatment centres aim to alleviate strain on the main facility, provide timely care, and strengthen the overall response to Lassa Fever outbreaks. Success stories of decentralisation in Africa's healthcare systems, including the management of HIV/AIDS and other disease outbreaks, demonstrate its efficacy in expanding access to healthcare services and reducing disease burdens. Critical to the success of decentralisation in Lassa Fever management is the support and training of healthcare professionals in other facilities. Training equips these professionals with the necessary skills and knowledge to manage Lassa Fever cases effectively, while equipping facilities with essential resources ensures high-quality care. Partnering and supporting facilities within close proximity fosters collaboration and coordination, allowing patients to access care in their communities. While challenges persist, decentralisation offers a promising path forward for addressing the complexities surrounding Lassa Fever response mechanisms. By building trust, improving accessibility, and enhancing response mechanisms, decentralised treatment centres have the potential to strengthen the fight against this infectious disease by offering patients more options and better care. The adoption of decentralised frameworks, supported by lessons from successful practices, underscores the importance of a comprehensive approach to Lassa Fever management.

5.1. Recommendations

These misconceptions about Lassa Fever treatment can significantly influence patient choices, as demonstrated by the theory of planned behaviour. Negative attitudes toward evidence-based treatments, subjective norms favoring non-evidence-based therapies, and perceived control over alternative treatments can all contribute to suboptimal decision-making. To address these misconceptions, healthcare providers should prioritise patient education, disseminate accurate information, and actively engage in conversations to dispel myths and misconceptions. By promoting awareness and understanding of evidence-based treatments, patients can make informed choices that align with their health and well-being. Establishing several coordinated response mechanisms will foster collaboration between decentralised treatment centres and the main treatment centre. This will ensure effective communication, information sharing, and resource allocation during outbreaks of Lassa Fever. Additionally, involving international organizations and implementing a robust monitoring system will further enhance decentralised response strategies. Government commitment and international collaboration are also crucial for the successful implementation of these recommendations.

5.2. Policy Recommendations

To enhance the effectiveness of decentralised Lassa Fever response mechanisms,

the following policy recommendations are proposed:

1) Strengthening Community Engagement and Health Education: Public health initiatives must prioritise culturally sensitive education campaigns to address misinformation and build trust in decentralised treatment centres. Community health workers, traditional leaders, and religious institutions should be actively involved in disseminating accurate health information.

2) Expanding and Equipping Decentralised Facilities: The government should invest in training healthcare personnel, upgrading medical infrastructure, and ensuring the consistent supply of essential medications in decentralised centres. Strengthening these facilities will enhance their credibility and encourage greater patient utilisation.

3) Establishing Partnerships with Research Organisations and NGOs: Collaborations with organisations such as ALIMA - Alliance for International Medical Action, amongst others, can provide technical expertise, funding, and logistical support to enhance decentralised response capacity.

4) Developing Digital Health Solutions for Decentralised Care: Implementing telemedicine and mobile health applications can improve patient monitoring, data collection, and adherence to treatment protocols in decentralised settings.

5) Institutionalising Decentralised Clinical Trials: Given the complexities associated with decentralised clinical trials, ethical frameworks must be adapted to ensure participant protection, data security, and regulatory compliance. Policymakers should integrate digital health tools to enhance trial efficiency while maintaining ethical and legal standards.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

References

[1] WHO (2018) Lassa Fever. https://www.afro.who.int/health-topics/lassa-fever

[2] Africa Centers for Disease Control and Prevention (2018) Lassa Fever. https://africacdc.org/disease/lassa-fever/

[3] Africa Centers for Disease Control and Prevention (2022) Lassa Fever—Centers for Disease Control and Prevention. https://www.cdc.gov/vhf/lassa/index.html

[4] Okwuraiwe, A.P., Onyeaghala, C.A., Ozoude, O.T., Suleiman, M.O., Abdu-Aguye, S.N., Ezekwelu, N.J., Oyeniyi, T.A., Jegede, A.O., Egwudo, A.E., Okeke, O.P., Abodunrin, O.R., Akinsolu, F.T. and Sobande, O.O. (2025) Clinical Outcomes of Lassa Fever in West Africa: A Systematic Review and Meta-Analysis. https://doi.org/10.1101/2025.01.10.24319564

[5] Gompf, S.G. and Davis, C.P. (2023) Lassa Fever. https://www.medicinenet.com/lassa_fever/article.htm

[6] Ilori, E.A., Frank, C., Dan-Nwafor, C.C., Ipadeola, O., Krings, A., Ukponu, W., *et al.* (2019) Increase in Lassa Fever Cases in Nigeria, January-March 2018. *Emerging Infectious Diseases*, **25**, 1026-1027. https://doi.org/10.3201/eid2505.181247

[7] Dalhat, M.M., Olayinka, A., Meremikwu, M.M., Dan-Nwafor, C., Iniobong, A., Ntoimo, L.F., *et al.* (2022) Epidemiological Trends of Lassa Fever in Nigeria, 2018-

2021. *PLOS ONE*, **17**, e0279467. https://doi.org/10.1371/journal.pone.0279467

[8] Al-Mustapha, A.I., Adesiyan, I.M., Orum, T.G., Ogundijo, O.A., Lawal, A.N., Nzedibe, O.E., *et al.* (2024) Lassa Fever in Nigeria: Epidemiology and Risk Perception. *Scientific Reports*, **14**, Article No. 27669. https://doi.org/10.1038/s41598-024-78726-3

[9] Eke, M. and Adiri, F. (2025) Cross-Sectional Study of the Knowledge, Attitude, and Preventive Practices Towards Lassa Fever among Residents of Karu, Abuja, Nigeria. *Tropical Journal of Health Sciences*, **31**, 1-11. https://doi.org/10.4314/tjhc.v31i4.1

[10] Akindokun, S.S., Adeleye, O.O. and Olorunlowu, D.R. (2024) The Socioeconomic Impact of Lassa Fever in Nigeria. *Discover Public Health*, **21**, Article No. 133. https://doi.org/10.1186/s12982-024-00265-z

[11] McKenna, A. (2009) Owo Nigeria. https://www.britannica.com/place/Owo

[12] Geodatos (2023) Owo Geographic Coordinates. https://www.geodatos.net/en/coordinates/nigeria/owo

[13] Oyeniyi, T. (2022) History of Owo, Ondo State. https://naijabiography.com/history-culture/history-of-owo-ondo-state/

[14] Weather Atlas (2025) Climate and Monthly Weather Forecast: Owo, Nigeria. https://www.weather-atlas.com/en/nigeria/owo-climate

[15] Oziogu, I.A. (2012) Owo Culture of Ancient Nigeria. https://www.vanguardngr.com/2012/06/owo-culture-of-ancient-nigeria/

[16] Dada, P. (2023) Igogo Festival to Attract 500,000 Tourists to Ondo—Monarch. https://punchng.com/igogo-festival-to-attract-500000-tourists-to-ondo-monarch/

[17] Salu, O.B., Amoo, O.S., Shaibu, J.O., Abejegah, C., Ayodeji, O., Musa, A.Z., *et al.* (2020) Monitoring of Lassa Virus (LASV) Infection in Suspected and Confirmed Cases in Ondo State, Nigeria. *Pan African Medical Journal*, **36**, Article 253. https://doi.org/10.11604/pamj.2020.36.253.22104

[18] Duvignaud, A., Jaspard, M., Etafo, I.C., Serra, B., Abejegah, C., Gabillard, D., *et al.* (2020) Lassa Fever Clinical Course and Setting a Standard of Care for Future Randomized Trials: A Protocol for a Cohort Study of Lassa-Infected Patients in Nigeria (LASCOPE). *Travel Medicine and Infectious Disease*, **36**, Article 101557. https://doi.org/10.1016/j.tmaid.2020.101557

[19] Bolaji, A. (2023) The View from the Frontline: How Nigeria Is Handling Resurgent Lassa Fever. https://www.gavi.org/vaccineswork/view-frontline-how-nigeria-handling-resurgent-lassa-fever

[20] Ukwenya, V.O., Fuwape, T.A., Fadahunsi, T.I. and Ilesanmi, O.S. (2021) Disparities in Knowledge, Attitude, and Practices of Infection Prevention and Control of Lassa Fever among Health Care Workers at the Federal Medical Centre, Owo, Ondo State, Nigeria. *Pan African Medical Journal*, **38**, Article 357. https://doi.org/10.11604/pamj.2021.38.357.26208

[21] Duvignaud, A., Jaspard, M., Etafo, I.C., Gabillard, D., Serra, B., Abejegah, C., *et al.* (2021) Lassa Fever Outcomes and Prognostic Factors in Nigeria (LASCOPE): A Prospective Cohort Study. *The Lancet Global Health*, **9**, E469-E478. https://doi.org/10.1016/s2214-109x(20)30518-0

[22] World Health Organization (2022) Lassa Fever—Nigeria. World Health Organization. https://www.who.int/emergencies/disease-outbreak-news/item/lassa-fever---nigeria

[23] Ajzen, I. (1985) From Intentions to Actions: A Theory of Planned Behavior. In: Kuhl,

J. and Beckmann, J., Eds., *Action Control. SSSP Springer Series in Social Psychology*, Springer, 11-39. https://doi.org/10.1007/978-3-642-69746-3_2

[24] Ajzen, I. (1991) The Theory of Planned Behavior. *Organizational Behavior and Human Decision Processes*, **50**, 179-211. https://doi.org/10.1016/0749-5978(91)90020-t

[25] Ajzen, I. (2002) Perceived Behavioral Control, Self-Efficacy, Locus of Control, and the Theory of Planned Behavior. *Journal of Applied Social Psychology*, **32**, 665-683. https://doi.org/10.1111/j.1559-1816.2002.tb00236.x

[26] Wancata, L.M., Billingsley, K.G., Pailet, J., Mayo, S.C., Sheppard, B.C. and Hansen, L. (2021) The Patient's Perspective: A Qualitative Study of Individual Experience with Decision-Making, Treatment, and Recovery for Resectable Pancreatic Cancer. *Supportive Care in Cancer*, **30**, 2581-2589. https://doi.org/10.1007/s00520-021-06690-z

[27] Shachar, E., Hasson, S.P., Ferro, L., Pundak, C., Nikolaevski-Berlin, A., Waller, E., *et al.* (2022) Real-Life Daily Activity: The Impact of Misbeliefs on Quality of Life among Cancer Patients. *ESMO Open*, **7**, Article 100498. https://doi.org/10.1016/j.esmoop.2022.100498

[28] Carrithers, B.K., Mathias, J., Montana, M.P., Mahesh, J., Hussain, S., Lanzkron, S.M., *et al.* (2021) Knowledge of Fertility and Perception of Fertility Treatment among Adults with Sickle Cell Disease (*KNOW FERTILITY*). *Blood*, **138**, 3101-3101. https://doi.org/10.1182/blood-2021-154040

[29] Garett, R. and Young, S.D. (2022) The Role of Misinformation and Stigma in Opioid Use Disorder Treatment Uptake. *Substance Use & Misuse*, **57**, 1332-1336. https://doi.org/10.1080/10826084.2022.2079133

[30] Gupta, A.A., Self, M., Mueller, M., Wardi, G. and Tainter, C. (2022) Dispelling Myths and Misconceptions about the Treatment of Acute Hyperkalemia. *The American Journal of Emergency Medicine*, **52**, 85-91. https://doi.org/10.1016/j.ajem.2021.11.030

[31] Abimbola, S. (2021) The Uses of Knowledge in Global Health. *BMJ Global Health*, **6**, e005802. https://doi.org/10.1136/bmjgh-2021-005802

[32] Dimmock, J., Krause, A.E., Rebar, A. and Jackson, B. (2021) Relationships between Social Interactions, Basic Psychological Needs, and Wellbeing during the COVID-19 Pandemic. *Psychology & Health*, **37**, 457-469. https://doi.org/10.1080/08870446.2021.1921178

[33] Bossert, T.J. (2013) Decentralization of Health Systems: Challenges and Global Issues of the Twenty-First Century. In: Regmi, K., Ed., *Decentralizing Health Services*, Springer, 199-207. https://doi.org/10.1007/978-1-4614-9071-5_12

[34] Charles, A.M., Sarwatt, A.C. and Yusuf, O.M. (2025) Navigating the Paradox of Decentralisation by Devolution: An Evaluation of Public Healthcare Service Delivery in Developing Countries. *Eastern African Journal of Humanities and Social Sciences*, **4**, 87-98. https://doi.org/10.58721/eajhss.v4i1.898

[35] Iannaccone, R. and Ferbitz-Scheurer, S. (2024) Decentralised Clinical Trials: A New Approach with Opportunities and Challenges. *Regulatory Affairs Watch*, **6**, 14-16. https://doi.org/10.54920/scto.2024.rawatch.9.14

[36] Chen, J., Di, J., Daizadeh, N., Lu, Y., Wang, H., Shen, Y., *et al.* (2025) Decentralized Clinical Trials in the Era of Real-World Evidence: A Statistical Perspective. *Clinical and Translational Science*, **18**, e70117. https://doi.org/10.1111/cts.70117

[37] Aiyegbusi, O.L., Cruz Rivera, S., Kamudoni, P., Anderson, N., Collis, P., Denniston, A.K., *et al.* (2024) Recommendations to Promote Equity, Diversity and Inclusion in

Decentralized Clinical Trials. *Nature Medicine*, **30**, 3075-3084. https://doi.org/10.1038/s41591-024-03323-w

[38] Theogaraj, E., Leyens, L. and Wingate, J. (2024) Why Is the Uptake of Decentralised Elements in Clinical Trials Slower than Expected? *Regulatory Affairs Watch*, **6**, 20-24. https://doi.org/10.54920/scto.2024.rawatch.9.20

[39] Gillespie, A.M., Obregon, R., El Asawi, R., Richey, C., Manoncourt, E., Joshi, K., *et al.* (2016) Social Mobilization and Community Engagement Central to the Ebola Response in West Africa: Lessons for Future Public Health Emergencies. *Global Health: Science and Practice*, **4**, 626-646. https://doi.org/10.9745/ghsp-d-16-00226

[40] Mobula, L.M., Samaha, H., Yao, M., Gueye, A.S., Diallo, B., Umutoni, C., *et al.* (2020) Recommendations for the COVID-19 Response at the National Level Based on Lessons Learned from the Ebola Virus Disease Outbreak in the Democratic Republic of the Congo. *The American Journal of Tropical Medicine and Hygiene*, **103**, 12-17. https://doi.org/10.4269/ajtmh.20-0256

[41] Nachega, J.B., Atteh, R., Ihekweazu, C., Sam-Agudu, N.A., Adejumo, P., Nsanzimana, S., *et al.* (2021) Contact Tracing and the COVID-19 Response in Africa: Best Practices, Key Challenges, and Lessons Learned from Nigeria, Rwanda, South Africa, and Uganda. *The American Journal of Tropical Medicine and Hygiene*, **104**, 1179-1187. https://doi.org/10.4269/ajtmh.21-0033

[42] Reuben, R.C., Danladi, M.M.A., Saleh, D.A. and Ejembi, P.E. (2020) Knowledge, Attitudes and Practices Towards COVID-19: An Epidemiological Survey in North-Central Nigeria. *Journal of Community Health*, **46**, 457-470. https://doi.org/10.1007/s10900-020-00881-1

[43] Onyilor Achem, V. and Johnmary Ani, K. (2022) Systemic Crisis of Infodemic in a Pandemic: COVID-19, 5G Network, Society and Symbolic Interactionism. *Journal of African Films and Diaspora Studies*, **5**, 29-51. https://doi.org/10.31920/2516-2713/2022/5n4a2

[44] McKee, M., van Schalkwyk, M.C. and Greenley, R. (2024) Meeting the Challenges of the 21st Century: The Fundamental Importance of Trust for Transformation. *Israel Journal of Health Policy Research*, **13**, Article No. 21. https://doi.org/10.1186/s13584-024-00611-1

[45] Prall, S.P. (2024) Quantifiable Cross-Cultural Research on Medical Mistrust Is Necessary for Effective and Equitable Vaccination in Low- and Middle-Income Countries. *Journal of Epidemiology and Global Health*, **14**, 1771-1777. https://doi.org/10.1007/s44197-024-00319-0

[46] Tefera, G.M. (2024) Exploring Lack of Trust and Its Impact on Access and Utilization of Primary Healthcare Services among African Immigrant Women in the United States: A Qualitative Study of Ethiopian Immigrant Women. *BMC Health Services Research*, **24**, Article No. 1605. https://doi.org/10.1186/s12913-024-11798-z

[47] Darwiche, G., Palaoro, G.S., Micheletto, L.C., Oliveira, L.C.S.d., Bueno, M.A., Leczko, M.T., *et al.* (2024) The Influence of Religiosity on Medical Treatment Choice. *Brazilian Journal of Development*, **10**, e74109. https://doi.org/10.34117/bjdv10n10-073

[48] Fox, M.P., Pascoe, S., Huber, A.N., Murphy, J., Phokojoe, M., Gorgens, M., *et al.* (2019) Adherence Clubs and Decentralized Medication Delivery to Support Patient Retention and Sustained Viral Suppression in Care: Results from a Cluster-Randomized Evaluation of Differentiated ART Delivery Models in South Africa. *PLOS Medicine*, **16**, e1002874. https://doi.org/10.1371/journal.pmed.1002874

[49] Oru, E., Trickey, A., Shirali, R., Kanters, S. and Easterbrook, P. (2021) Decentralisation, Integration, and Task-Shifting in Hepatitis C Virus Infection Testing and Treat-

ment: A Global Systematic Review and Meta-Analysis. *The Lancet Global Health*, **9**, e431-e445. https://doi.org/10.1016/s2214-109x(20)30505-2

[50] Winchester, M.S. and King, B. (2018) Decentralization, Healthcare Access, and Inequality in Mpumalanga, South Africa. *Health & Place*, **51**, 200-207. https://doi.org/10.1016/j.healthplace.2018.02.009

[51] Kolawole, G.O., Gilbert, H.N., Dadem, N.Y., Genberg, B.L., Agaba, P.A., Okonkwo, P., *et al.* (2017) Patient Experiences of Decentralized HIV Treatment and Care in Plateau State, North Central Nigeria: A Qualitative Study. *AIDS Research and Treatment*, **2017**, Article 2838059. https://doi.org/10.1155/2017/2838059

[52] Michaud, J. and Isbell, M. (2023) Africa CDC: Its Evolution and Key Issues for Its Future. https://www.kff.org/global-health-policy/issue-brief/africa-cdc-its-evolution-and-key-issues-for-its-future/

[53] Assefa, Y., Gelaw, Y.A., Hill, P.S., Taye, B.W. and Van Damme, W. (2019) Community Health Extension Program of Ethiopia, 2003-2018: Successes and Challenges toward Universal Coverage for Primary Healthcare Services. *Globalization and Health*, **15**, Article No. 24. https://doi.org/10.1186/s12992-019-0470-1

[54] Nyandekwe, M., Nzayirambaho, M. and Kakoma, J.B. (2020) Universal Health Insurance in Rwanda: Major Challenges and Solutions for Financial Sustainability Case Study of Rwanda Community-Based Health Insurance Part I. *Pan African Medical Journal*, **37**, Article 55. https://doi.org/10.11604/pamj.2020.37.55.20376

[55] Eboreime, E.A., Nxumalo, N., Ramaswamy, R. and Eyles, J. (2018) Strengthening Decentralized Primary Healthcare Planning in Nigeria Using a Quality Improvement Model: How Contexts and Actors Affect Implementation. *Health Policy and Planning*, **33**, 715-728. https://doi.org/10.1093/heapol/czy042

[56] Turinawe, E.B., Rwemisisi, J.T., Musinguzi, L.K., de Groot, M., Muhangi, D., de Vries, D.H., *et al.* (2015) Selection and Performance of Village Health Teams (VHTs) in Uganda: Lessons from the Natural Helper Model of Health Promotion. *Human Resources for Health*, **13**, Article No. 73. https://doi.org/10.1186/s12960-015-0074-7