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One Health Implementation at the Federal Level in Nigeria: A Qualitative Study

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Abstract

The One Health approach continues to stand out as a pivotal model in the public health intervention space. Sub-Saharan Africa, including Nigeria, grapples with being a hotspot for infectious diseases and various public health threats, leading to significant morbidity and mortality. The underlying cause is often linked to interactions between humans, animals, and the environment. Traditionally, the government response has adhered to a vertical approach, but a recent shift towards the holistic One Health strategy has been observed. This paper critically assesses the implementation of the One Health approach at the federal level in Nigeria. An institutional-based qualitative method was employed in this research, involving interviews with key actors at the federal level. Study participants were purposively selected using a key informant interview guide, focusing on eliciting responses regarding governance structure readiness, practical implementation, and factors influencing the One Health implementation in Nigeria. The analysis utilized the inductive analysis technique, and the findings were reported in thematic categories. Key findings reveal that stakeholders in Nigeria have a good understanding of the One Health approach and have made efforts to collaborate across sectors. However, despite this understanding and collaboration, significant challenges have hindered the successful implementation of the One Health approach in public health interventions in Nigeria. These challenges encompass a low functional status of the governance structure, limited funding, inadequate human resources and capacity-building initiatives, insufficient awareness creation, and the absence of policy implementation to guide the country's One Health strategic plan.

Keywords: *Diseases, Federal, Implementation, One Health Approach, Public health, Zoonosis.*

Introduction

The One Health concept recognizes that the health of humans, animals, and the environment is interconnected. It emphasizes the need for a collaborative, multi-sectoral, and transdisciplinary approach to address health threats at the human-animal-environment interface. The emergence of zoonotic diseases, antimicrobial resistance (AMR), and climate change-related health issues has reinforced the necessity of implementing One Health strategies globally. In Nigeria, implementing One Health at the federal level has gained traction, particularly following the increasing incidences of zoonotic diseases such as Lassa fever, avian influenza, and COVID-19 [1].

This study will significantly strengthen Nigeria's ability to prevent, detect, and respond to public health threats through a coordinated One Health framework [2]. A well-integrated One Health system is essential for addressing zoonotic disease outbreaks, ensuring food safety, and mitigating environmental hazards [3]. Furthermore, given Nigeria's diverse

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ecosystem and high population density, establishing a robust policy framework is crucial to supporting One Health initiatives, particularly in enhancing surveillance and response mechanisms [4].

Furthermore, the study aligns with global recommendations for strengthening national health security through intersectoral collaboration, as outlined by the World Health Organization and the Food and Agriculture Organization [5].

This research contributes to the growing body of knowledge by evaluating Nigeria's One Health implementation governing structure readiness, key player knowledge, and implementation of OH, identifying challenges, and proposing actionable recommendations to enhance its effectiveness. By doing so, it aims to bridge the existing gaps in policy and practice, ensuring sustainable health interventions at the federal level.

Problem Statement

Nigeria is often considered a country faced with an increased infectious and non-communicable disease burden, a situation attributed to its rising population, poverty level, and insufficient development of its healthcare system.

Since introducing the OH strategic plan, stakeholders have successfully applied the OH approach to respond to multiple outbreaks. However, despite being overdue for a review, a comprehensive assessment of the strategy's implementation has yet to be documented.

Concerning the governance structure, the National Steering Committee, which is chaired by the Honourable Minister of Health and co-chaired by the Honourable Ministers of Agriculture and Environment, with the obligation of setting the policy direction and oversight functions for the OH approach, was just inaugurated late in 2023 and has subsequently had periodic meetings. These only partly address the gap identified in different fora and documented by the Joint External Evaluation 2023.

The One Health application in Nigeria is facing various challenges. The challenges include the political sector, health professionals, and the community [1]. There is a lack of awareness among farmers and livestock owners on the appropriate use of medicines to treat their crops and animals [1]. Animals are kept for companionship, food, and work, and they are known to be potential sources of Multi-Drug Resistant (MDR) pathogens. There is inadequate health security practice in slaughterhouses; the excessive quest for quick financial gains among stakeholders in the agro-veterinary industry negates the enforcement of ethical standards in veterinary practice in Nigeria.

Recent evidence confirms the increase in animal-human relationships/bonding that has emerged as an ethical challenge to veterinarians, especially those in pet practice. The existing Nigerian One Health Strategic Plan (2019-2023) has experienced changes in implementation due to inadequate monitoring. The educational system encourages competition between health professionals and discourages multidisciplinary collaborations due to professional tussles and bureaucratic difficulties [6]. Moreover, OH professionals do not have the enabling conditions necessary for them to practice their ideas.

Despite the lack of routine sharing of surveillance information between the Ministry of Health (for human health) and the Ministry of Agriculture and Rural Development (for veterinary health), health surveillance still makes up a part of the country's health infrastructure. However, owing to a lack of adequate monitoring infrastructure and information sharing, the impact of environmental health surveillance is low [7]. Therefore, due to the obvious presence of the Integrated Disease Surveillance and Response (IDSR) system, which has been implemented for human and animal health surveillance, the

same system will be utilized to conduct environmental surveillance in Nigeria.

Study Objective

This qualitative study aims to describe the implementation of the OH approach at the federal level in Nigeria since 2017. Understanding such factors from the key actors can inform policy reform interventions and adaptation to suit the local context.

Specific Objectives

1. To understand the governance structure readiness for the implementation of OH in the public health space at the federal level in Nigeria.
2. To explore what the public health key actors at the federal level in Nigeria understand about the OH approach.
3. To describe the practice of the OH approach among public health key actors at the federal level in Nigeria.
4. To explore factors influencing the practice of the OH approach among key actors at the federal level in Nigeria.

Materials and Methods

This institutional-based qualitative study assessed Nigeria's readiness for One Health (OH) implementation and influencing factors at the federal level. Ethical approval was obtained from the National Health Research Ethics Committee. Key Informant Interviews (KII) and In-depth Interviews (IDI) were conducted using structured guidelines. OH readiness was evaluated using the IHR strategy for global comparability.

A two-stage sampling approach was used: purposive sampling to select ministries and stratified selection of key actors meeting predefined inclusion criteria. The study involved 18 key actors from the Federal Ministries of Health, Agriculture & Rural Development, and Environment. Saturation determined the study size, with 4 KIIs and 2 IDIs per ministry. Participants were required to have held their positions for at least 24 months. Qualitative data were gathered using IDI and KII guides, covering socio-demographics, governance structures, and OH implementation practices. Informed consent was obtained, and interviews lasted about 60 minutes. Sessions were recorded, supplemented with backup notes documenting non-verbal cues. All interviews were conducted in English. The study posed no emotional or professional risks.

Interviews were transcribed verbatim and coded using NVivo version 11. Two analysts independently developed a codebook, resolving discrepancies with the supervisors and principal investigator. Thematic analysis was conducted using a six-phased approach of familiarization, initial coding, theme identification, review, naming, and reporting. This iterative process ensured comprehensive analysis, with findings presented through interaction themes and illustrative quotes. Please see Table 1 for the phases of data analysis.

Table 1. Phases of Data Analysis

Phases	**Summary**
Phase 1 – Familiarization	The analysis began with a time of familiarization, which included listening to audio records and jotting down preliminary comments in the transcript.
Phase 2 – Initial coding	2 experienced qualitative data analysts generated a study codebook based on intriguing characteristics and recurring patterns in the data.

Phase 3 – Searching for themes	All data related to each prospective theme were gathered, and agreed-upon codes were aggregated into potential themes.
Phase 4 – Reviewing themes	Constant comparison and consensus building among the data analysts were used to double-check themes by going over the data again to make sure it was representative, and then creating a thematic map of the analysis.
Phase 5 – Defining and naming themes	Continuous analysis to refine the details of each topic and the broad tale, resulting in unambiguous definitions and labels for each theme.
Phase 6 – Reporting	Extracts from the illustrations were chosen to be included in the narrative that told the entire story.

Results

The participants for the study included 18 government employees from the federal ministries of health, agriculture, and environment, made up of five women and thirteen men, each with a tenure of at least two years in their current roles. On average, the respondents had spent 17 years of total service experience, with four years in their current position and four years practicing OH.

Additionally, some respondents reported a service duration of approximately 20 years, with 14 years progressively in various roles within the civil service and three years of experience in OH practice.

Regarding the readiness of One Health (OH) governance structure in Nigeria, findings revealed that Nigeria has established a formal OH governance structure, but implementation remains inconsistent. The Federal Ministries of Health, Agriculture & Rural Development, and Environment collaborate under a multi-sectoral coordination framework. However, stakeholders noted a lack of clarity in roles, limited funding, and weak institutional frameworks, hindering effective OH implementation.

While some inter-ministerial collaborations exist, they are largely ad hoc and reactive rather than systematic and proactive. Limited joint planning and poor communication channels were cited as critical bottlenecks. Participants emphasized the need to strengthen coordination of OH activities, improve resource allocation, and foster accountability.

Several factors were identified to influence the implementation of the OH approach, including Policy and institutional challenges, such as the absence of a legally binding OH policy. This was identified as a key barrier because while OH-related policies exist, they are fragmented and lack integration across sectors. Participants highlighted the need for a harmonized OH framework backed by legislation to enhance sustainability.

Also, Financial and Human Resource Constraints were noted. Funding for OH initiatives is inadequate and heavily donor-dependent. Ministries struggle with budgetary constraints, leading to insufficient personnel, training, and infrastructure. Participants stressed the need for government-led financial commitment and capacity-building programs.

Findings also revealed that the effectiveness of OH implementation depended on political commitment and stakeholder engagement, while some progress has been made, inconsistent leadership and changing government priorities affect continuity. Private sector involvement and community engagement were also found to be minimal.

Several successful OH practices were identified, notably joint outbreak investigations, zoonotic disease surveillance, and cross-sectoral response to health threats. However, these efforts are not institutionalized and often depend on external funding. The study found that knowledge of OH principles among stakeholders varied, affecting implementation efficiency.

Discussion

The findings revealed that key actors from various ministries had a good understanding of the governance structure readiness for the OH implementation. They recognized OH as a multi-stakeholder approach involving experts from health, environment, and agriculture ministries at both the federal and state levels. This aligns with the widely accepted definition of OH as a multisectoral strategy aimed at optimizing health outcomes by acknowledging the interconnectedness of humans, animals, plants, and their shared environment [8]. However, while some respondents were knowledgeable about OH governance, not all were fully aware of the specific laws and policies guiding its implementation, or if such laws and policies existed. This knowledge gap poses a challenge for effective coordination and enforcement of OH strategies.

Participants emphasized the importance of stronger collaboration between ministries responsible for human, animal, and environmental health, which is consistent with the findings by Fakae and Fakae [8]. They highlighted the role of national and international institutions such as the World Health Organization, Food and Agriculture Organization, and Nigeria's National Agency for Food and Drug Administration and Control. Their involvement has been instrumental in shaping OH policies and interventions, aligning with the CDC's report on global OH collaboration [8]. The governance structure for OH was described as having three primary layers: the Steering Committee, the Technical Committee, and the OH Implementation Unit. While this structure provides a framework for inter-sectoral collaboration, respondents identified challenges related to ineffective coordination, inconsistent communication, and infrequent meetings, as confirmed by the 2023 JEE report [9]. The inaugural convening of Steering Committee meetings in late 2023 and subsequent periodic meetings was seen as a step forward in addressing these issues.

One Health has played a crucial role in managing zoonotic disease outbreaks in Nigeria, including Lassa fever, COVID-19, and avian influenza. Participants noted that OH has strengthened surveillance systems, facilitated joint investigations, and improved laboratory testing capacities [10]. However, despite these successes, collaboration between ministries remains a challenge. Some respondents pointed out that the underrepresentation of the environmental sector in OH discussions and decision-making processes limits a truly holistic approach, as noted by Ayobami et al. [10].

The practice of OH among federal key actors primarily involves experts from human, animal, and environmental health, aligning with Zhang R et al.'s findings on the integration of these domains in OH [11]. These professionals include veterinarians, medical doctors, pharmacists, microbiologists, and epidemiologists, among others. Social scientists and mental health professionals are also engaged to address the sociocultural and psychological dimensions of public health issues. This integration of diverse expertise aligns with global OH principles, emphasizing interdisciplinary cooperation for more effective disease prevention and control.

Several factors influence the successful implementation of OH in Nigeria. Limited funding remains one of the most significant barriers, affecting program sustainability, infrastructure development, and workforce capacity; these are similar to challenges reported in Palestine and Uganda [12].

Inadequate human resources and a shortage of specialized expertise further hinder effective OH operations. Some respondents also noted challenges in information dissemination, inter-agency rivalries, and sectoral dominance, which create bottlenecks in decision-making and response efforts, consistent with Ayobami et al.'s observations of technical and operational barriers [10]. Additionally, professional competition, conflicting institutional priorities, and bureaucratic inertia make inter-sectoral collaboration difficult [13].

To enhance OH implementation, respondents suggested increased budget allocations, capacity-building programs, and stronger institutional frameworks to ensure sustained collaboration. They also emphasized the need for awareness campaigns to engage the public and promote risk communication strategies. Addressing these challenges will be key to strengthening Nigeria's OH approach, ensuring a coordinated response to public health threats, and improving overall health outcomes for humans, animals, and the environment.

Conclusion

One Health, a public health initiative, has an established and active governance structure in Nigeria, which has aided its practice and operational dynamics in reducing zoonotic diseases such as avian influenza, Lassa fever, and other diseases in human and animal populations.

Despite this, the study highlights the challenges and opportunities in the implementation of the One Health (OH) approach at the federal level in Nigeria. While key actors recognize the importance of OH, gaps in governance, funding, and technical capacity hinder its effective implementation. Strengthening intersectoral collaboration, improving stakeholder understanding, and addressing institutional barriers are crucial for advancing OH. Policy reforms and increased political commitment are needed to drive sustainable progress.

Conflict of Interest

There was no conflict of interest.

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