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OVERVIEW OF MONKEYPOX IN NIGERIA: A NARRATIVE REVIEW

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Abstract

Monkeypox (recently referred to as mpox) is a re-emerging zoonotic viral disease caused by the monkeypox virus, a member of the Orthopoxvirus genus within the Poxviridae family. Although historically endemic to Central and West Africa, Nigeria has become a major epidemiological hotspot following the re-emergence of the disease in 2017 after nearly four decades of absence. Since then, Nigeria has experienced recurrent outbreaks with increasing evidence of sustained human-to-human transmission and expanding geographic spread.

The disease presents clinically with fever, lymphadenopathy, and a characteristic vesiculopustular rash resembling smallpox, although generally associated with lower mortality. This narrative review synthesizes the epidemiology, transmission dynamics, clinical presentation, diagnosis, public health impact, and control strategies of monkeypox in Nigeria. It further highlights ecological and behavioral drivers such as deforestation, bushmeat consumption, wildlife-human interaction, and declining immunity following the cessation of smallpox vaccination.

Nigeria continues to serve as a critical epidemiological hub for monkeypox transmission in Africa. Strengthening surveillance systems, laboratory diagnostic capacity, vaccination strategies, and community awareness remains essential for effective disease control. The review emphasizes that monkeypox is no longer a sporadic zoonosis in Nigeria but an evolving public health threat with epidemic potential (Yinka-Ogunleye *et al*., 2019; WHO, 2023; Bunge *et al*., 2022).

Keywords

Monkeypox; mpox; Orthopoxvirus; zoonosis; Nigeria; epidemiology; outbreak; public health; surveillance; One Health

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Search strategy and selection criteria

This narrative review was developed using literature from PubMed, Google Scholar, WHO, CDC, Nigeria Centre for Disease Control (NCDC), and peer-reviewed infectious disease journals. Searches focused on English-language publications from 2016 to May 2026. Keywords included "monkeypox", "mpox", "Nigeria outbreak", "Orthopoxvirus", "zoonotic transmission", and "West African clade monkeypox". Priority was given to epidemiological studies, outbreak reports, systematic reviews, and public health surveillance data. Landmark older studies were included where necessary to support historical context and viral characterization.

Introduction: an old zoonosis with renewed epidemiological relevance

Monkeypox is an emerging zoonotic disease caused by the monkeypox virus, a double-stranded DNA virus belonging to the genus Orthopoxvirus, which also includes variola virus (smallpox), vaccinia virus, and cowpox virus (Reynolds and Damon, 2017).

The disease was once considered rare in humans but has gained renewed global attention following repeated outbreaks in West and Central Africa. Nigeria has become a key focal point following its re-emergence in 2017 after approximately 39 years without confirmed cases (Yinka-Ogunleye *et al*., 2019).

Clinically, monkeypox presents with fever, lymphadenopathy, fatigue, and a progressive vesiculopustular rash. Lymphadenopathy remains a distinguishing feature from other rash illnesses such as chickenpox (WHO, 2023).

Monkeypox is primarily maintained in nature by animal reservoirs, especially rodents and small mammals. Human infection occurs through direct contact with infected animals or through human-to-human transmission via respiratory droplets, lesion contact, or contaminated materials (Doty *et al*., 2017).

In Nigeria, ecological disruption, bushmeat consumption, and increasing human encroachment into forested areas have contributed significantly to disease emergence (Durski *et al*., 2018). Additionally, population-wide waning immunity following the discontinuation of smallpox vaccination has increased susceptibility (Adler *et al*., 2022).

Historical background of monkeypox in Nigeria

Monkeypox virus was first identified in 1958 in laboratory monkeys, while the first human case was reported in 1970 in the Democratic Republic of Congo (Reynolds and Damon, 2017).

In Nigeria, the first human case was recorded in 1971. However, after sporadic early cases, the disease disappeared from surveillance records for nearly four decades.

A major epidemiological shift occurred in 2017 when Nigeria reported a large outbreak across multiple states, marking the re-emergence of monkeypox as a public health threat (Yinka-

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Ogunleye *et al*., 2019). This outbreak provided evidence of increasing human-to-human transmission, which was previously considered rare.

Genomic studies confirmed circulation of the West African clade, associated with lower mortality but increasing transmission adaptability (Beer and Rao, 2019). Since then, Nigeria has experienced recurrent outbreaks, maintaining its position as a key monkeypox hotspot globally (WHO, 2023).

Epidemiology of monkeypox in Nigeria

Nigeria remains one of the most affected countries in West Africa. Since 2017, confirmed cases have been reported across multiple states including Lagos, Rivers, Bayelsa, Delta, Enugu, and the Federal Capital Territory (NCDC, 2022).

Transmission is more common in rural and forested regions due to closer human-wildlife interaction (Ng *et al*., 2019). Young adult males are disproportionately affected due to occupational exposure such as farming, hunting, and wildlife handling.

Children and immunocompromised individuals tend to experience more severe disease outcomes (Adler *et al*., 2022). Increasing urban expansion, deforestation, and bushmeat trade continue to drive spillover events (Durski *et al*., 2018).

Transmission dynamics

Monkeypox transmission occurs via zoonotic and human-to-human routes.

Zoonotic transmission

Human infection occurs through direct contact with infected animals, body fluids, or consumption of undercooked bushmeat. Rodents such as rope squirrels, Gambian pouched rats, and dormice are suspected reservoirs (Doty *et al*., 2017).

Human-to-human transmission

Transmission occurs through respiratory droplets, direct lesion contact, and contaminated fomites. Household transmission has been frequently documented in Nigeria (Yinka-Ogunleye *et al*., 2019). Increasing outbreak frequency suggests possible improved viral transmissibility (WHO, 2023).

Clinical features

The incubation period ranges from 5 to 21 days. Early symptoms include fever, fatigue, headache, muscle pain, and lymphadenopathy (Reynolds and Damon, 2017).

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A characteristic rash develops, progressing synchronously from macules to papules, vesicles, and pustules. Lymphadenopathy remains a key diagnostic feature distinguishing monkeypox from smallpox and chickenpox (WHO, 2023).

Severe cases may result in pneumonia, encephalitis, and secondary bacterial infections.

Diagnosis

Diagnosis is based on clinical suspicion and laboratory confirmation.

PCR diagnosis

Polymerase chain reaction (PCR) testing of lesion samples remains the gold standard (WHO, 2023).

Diagnostic capacity in Nigeria

Following the 2017 outbreak, Nigeria strengthened laboratory systems through the Nigeria Centre for Disease Control (NCDC, 2022). However, rural diagnostic limitations persist.

Public health impact

Monkeypox places significant burden on Nigeria's healthcare system, particularly in settings already challenged by malaria and Lassa fever.

Economic impacts include treatment costs, productivity loss, and outbreak containment expenses. Social stigma associated with skin lesions further complicates case management (Nguyen *et al*., 2022).

The disease also exposes weaknesses in surveillance and emergency preparedness systems (Durski *et al*., 2018).

Prevention and control

Key strategies include:

- **Surveillance:** Early detection and reporting systems (NCDC, 2022)
- **Vaccination:** Smallpox vaccine cross-protection, though population immunity is declining (Adler *et al*., 2022)
- **Infection control:** Isolation, PPE use, and hygiene practices
- **Public awareness:** Education on wildlife exposure and early reporting (WHO, 2023)

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Challenges in Nigeria

Major challenges include weak surveillance, limited diagnostics, inadequate funding, and low public awareness (Ng *et al*., 2019).

Cultural practices such as bushmeat consumption increase exposure risk (Doty *et al*., 2017). Environmental changes such as deforestation and urbanization also contribute to spillover (Durski *et al*., 2018). Stigma and misinformation delay response and treatment (WHO, 2023).

Future perspectives

Future control depends on strengthened vaccination strategies, genomic surveillance, and improved health systems (Beer and Rao, 2019).

Whole-genome sequencing is increasingly important for tracking viral evolution and transmission patterns (Bunge *et al*., 2022). International collaboration and vaccine development remain essential.

Conclusion

Monkeypox has evolved from a rare zoonotic infection into a recurrent public health threat in Nigeria. Since its re-emergence in 2017, repeated outbreaks have demonstrated increasing human-to-human transmission. Ecological disruption, declining immunity, and human-animal interaction remain key drivers. Strengthening surveillance, diagnostics, vaccination coverage, and public awareness is essential. Nigeria remains central to global monkeypox epidemiology and requires sustained One Health intervention and research focus (Yinka-Ogunleye *et al*., 2019; WHO, 2023).

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