

Common Community-Based Diseases: Experience From A Rural Community In Nigeria – A Three-Year Prospective Study

M O Akpo^{1,4}, D O Akpo^{2,4}, E E Akpo^{3,4}

Abstract

Background: Community-based diseases remain major contributors to morbidity and mortality in rural Nigeria. Understanding disease patterns within communities is essential for effective healthcare planning, resource allocation, and implementation of preventive interventions. This study prospectively assessed the pattern and trends of common diseases encountered in a rural Nigerian community over a three-year period, with particular emphasis on adult and childhood disease burden.

Methods: A three-year prospective community-based epidemiological study was conducted between 2023 and 2025. Data were collected during periodic free community health medical outreaches conducted in Igbide community, Delta State, Nigeria. Information on demographic characteristics, clinical diagnoses, and disease patterns was recorded using structured data collection forms. Diagnoses were categorized according to age groups and analysed using descriptive statistics. Trend analysis was performed to evaluate changes in disease occurrence over the study period.

Results: A total of 2,190 participants were enrolled. Adults accounted for 1,506 (68.8%) participants while children constituted 684

(31.2%). Females represented 1,642 (75.0%) participants compared with 548 (25.0%) males, giving a male-to-female ratio of 1:3. Hypertension was the most common disease among adults, accounting for 34.7% of adult diagnoses and demonstrating a progressive increase from 182 cases in 2023 to 342 cases in 2025, representing an 87.9% increase. Among children, skin diseases constituted the leading cause of morbidity, accounting for 29.8% of childhood diagnoses and increasing from 52 cases in 2023 to 92 cases in 2025, representing a 76.9% increase. Malaria remained a significant cause of morbidity across all age groups.

Conclusion: The study demonstrates a dual burden of communicable and non-communicable diseases in rural Nigeria. Hypertension is emerging as the dominant adult health challenge, while skin diseases are increasingly affecting children. Community-based interventions focusing on screening, health education, environmental sanitation, and strengthened primary healthcare services are required to address these challenges.

Keywords: Community health, hypertension, skin diseases, rural health, disease trends, Nigeria.

Nigerian Research J Clin. Sci. 2025; 15(2): 41-50

¹Department of Public Health, Southern Delta University, Ozoro. Delta State. Nigeria

²Thornaby and Barwick Medical Group, Stock-on-tess, United Kingdom

³Department of Surgery, Delta State University Teaching Hospital, Oghara. Delta State. Nigeria

⁴Global Medical Missions, Warri. Delta State. Nigeria

Corresponding Author: Dr. Morenike O. Akpo. Department of Public Health, Southern Delta University, Ozoro, Delta State. Email: debellaakpo@yahoo.ca

Introduction

The burden of disease in rural communities continues to represent a significant public health challenge in developing countries. In sub-Saharan Africa, including Nigeria, disease patterns are increasingly characterized by the coexistence of communicable and non-communicable diseases^{1,2}. This epidemiological transition has important implications for healthcare systems, particularly in rural settings where healthcare resources remain limited.

Nigeria is Africa's most populous country and continues to experience substantial disparities in health outcomes between urban and rural populations¹. Rural communities often face multiple health challenges including poverty, inadequate access to healthcare facilities, poor sanitation, unsafe water sources, malnutrition, and low health literacy³. These factors contribute significantly to the persistence of preventable diseases and delayed healthcare seeking behaviours.

Historically, infectious diseases such as malaria, diarrhoeal diseases, respiratory tract infections, and skin infections have dominated disease patterns in rural Africa⁴. However, recent studies indicate an increasing prevalence of chronic non-communicable diseases including hypertension, diabetes mellitus, obesity, and cardiovascular disorders¹. The coexistence of these disease categories has resulted in a double burden of disease that places additional strain on already stretched healthcare systems.

Hypertension is currently recognized as one of the most important public health problems globally. The World Health

Organization estimates that more than one billion people live with hypertension worldwide, with a disproportionate burden occurring in low- and middle-income countries⁵. Once considered a disease of affluent urban populations, hypertension has become increasingly prevalent in rural communities due to changes in dietary habits, reduced physical activity, increasing life expectancy, obesity, and other lifestyle factors⁶.

The consequences of uncontrolled hypertension are profound. Hypertension is a major risk factor for stroke, heart failure, chronic kidney disease, peripheral vascular disease, and premature mortality⁷. Unfortunately, many individuals remain unaware of their hypertensive status because the disease is often asymptomatic during its early stages.

Children in rural communities face a different spectrum of health challenges. Skin diseases remain among the most common causes of childhood morbidity worldwide. These conditions are frequently associated with poor hygiene, inadequate water supply, overcrowding, poverty, and environmental factors. Although often considered minor ailments, skin diseases can adversely affect growth, psychological well-being, educational performance, and social interactions.

Recent reports from sub-Saharan Africa suggest increasing rates of fungal infections, scabies, impetigo, eczema, and other dermatological conditions among school-aged children. These trends may reflect deteriorating environmental conditions,

changing behavioural patterns, and persistent socioeconomic inequalities.

Understanding local disease patterns is essential for evidence-based healthcare planning. Community-based epidemiological studies provide valuable information for policymakers, healthcare providers, and public health practitioners by identifying priority health problems and informing targeted interventions.

This study was therefore conducted to prospectively assess the pattern and trends of common community-based diseases over a three-year period in a rural Nigerian community, with particular emphasis on hypertension among adults and skin diseases among children.

Materials and Methods

Study Design

This was a prospective community-based epidemiological study conducted over a period of three years from May 2023 to May 2025.

Study Area

The study was carried out in Igbiade (GPS: latitude 6° 8' 24.00"N; Longitude 5° 22' 12.00"E), a rural community in Nigeria with a population of about 30,000 residents. The community is predominantly agrarian, with farming, petty trading, and artisan occupations constituting the major sources of livelihood. Healthcare services are provided mainly through primary healthcare centres and periodic medical outreaches. This study was carried out during medical outreaches carried out six-monthly over a period of three years.

Study Population

The study population comprised all residents who participated in community health outreaches conducted during the study period.

Inclusion Criteria

To be included, consented individuals must be permanent residents of the community, and parents or guardians who consented for participating children.

Data Collection

Data were collected prospectively using structured forms. Information obtained included age, gender, occupation, clinical diagnosis, blood pressure measurements and relevant medical history

Clinical examinations were conducted by trained healthcare personnel. Blood pressure was measured using standardized procedures. Childhood skin diseases were diagnosed clinically based on established dermatological criteria.

Data Analysis

Data were analysed using SPSS version 26.0. Frequencies, percentages, ratios, and trend analyses were calculated. Results were presented in tables and figures.

Ethical Considerations

Ethical approval was obtained from the health research ethics committee of Peerless Hospital and Wellness (PHAW/R/2023/025). Written informed consent was obtained from participants and confidentiality was maintained throughout the study.

Results

Demographic Characteristics of Participants

A total of 2,190 individuals participated during the three-year study period with 548

males and 1,642 females giving a male to female ratio of 1:3 (Table 1).

Table 1: Sociodemographic Characteristics of Participants (N = 2,190)

Variable	Frequency (n)	Percentage (%)
Sex		
Male	548	25.0
Female	1,642	75.0
Age Group		
Adults	1,506	68.8
Children	684	31.2
Total	2,190	100.0

A total of 1,506 adults were assessed. Hypertension was the leading disease,

accounting for 523 cases (34.7%) (See Table 2).

Table 2: Common Adult Diseases (2023–2025)

Disease	Frequency (n)	Percentage (%)
Hypertension	523	34.7
Malaria	284	18.9
Osteoarthritis	186	12.4
Diabetes Mellitus	122	8.1
Peptic Ulcer Disease	109	7.2
Respiratory Tract Infections	101	6.7
Eye Disorders	92	6.1
Others	89	5.9
Total	1,506	100.0

Among the 684 children assessed, skin diseases were the most prevalent condition (Table 3).

Table 3: Common Childhood Diseases (2023–2025)

Disease	Frequency (n)	Percentage (%)
Skin Diseases	204	29.8
Malaria	152	22.2
Upper Respiratory Tract Infection	104	15.2
Diarrhoeal Diseases	79	11.5
Nutritional Deficiencies	58	8.5
Intestinal Helminthiasis	46	6.7
Others	41	6.1
Total	684	100.0

The annual distribution of major diseases in in the community shows a steady rise as shown in Table 4.

Table 4: Three-Year Trend of Hypertension and Childhood Skin Diseases

Year	Hypertension (Adults)	Skin Diseases (Children)
2023	182	52
2024	241	60
2025	342	92
Total	765*	204

**Includes newly diagnosed and previously known hypertensive patients encountered during the surveillance period.*

Trend analysis demonstrated a marked increase in hypertension cases from 182 cases in 2023 to 342 cases in 2025, representing an overall increase of 87.9% over the study period. Similarly, childhood skin diseases increased from 52 cases in 2023 to 92 cases in 2025, representing a 76.9% increase. These findings suggest an increasing burden of both chronic non-communicable diseases and environmentally related childhood illnesses within the community.

Annual Disease Trends

Analysis of the three-year prospective surveillance data revealed important changes in the pattern of disease occurrence within the community. Hypertension demonstrated the most pronounced increase among adult diseases, while skin diseases showed a substantial upward trend among children.

Table 5. Comparative Trend of Hypertension and Childhood Skin Diseases (2023–2025)

Indicator	2023	2024	2025	Overall Change (%)
Hypertension (adults)	182	241	342	87.9
Skin diseases (children)	52	60	92	76.9

Percentage Changes Over Time

Both major conditions increased steadily over the three-year study period. Hypertension increased from 182 cases in 2023 to 241 cases in 2024 accounting for 32.4% increase. Overall, hypertension rose by 87.9% between 2023 and 2025 (Table 5). Childhood skin diseases increased by 76.9% overall between 2023 and 2025 (Table 5).

Discussion

This three-year prospective community-based study provides important insight into the evolving disease pattern within a rural Nigerian community. The findings demonstrate the coexistence of communicable and non-communicable diseases, reflecting the epidemiological transition occurring across many low- and middle-income countries. The most notable observations were the predominance and increasing trend of hypertension among adults and the rising burden of skin diseases among children. These findings are similar to earlier reports by Schutte et. al.⁸ and Sarki et. al.⁹.

Hypertension accounted for 34.7% of adult diagnoses and showed an 87.9% increase over the three-year period. This finding is consistent with reports from other parts of Nigeria and sub-Saharan Africa indicating a rising prevalence of hypertension in rural populations⁶. Historically, hypertension was considered more common in urban areas,

but changing lifestyles, dietary transitions, ageing populations, and increasing obesity have contributed to its emergence as a major rural health problem⁶.

Several factors may explain the increasing trend observed in this study. First, the ageing of the rural population may increase susceptibility to hypertension^{6,10}. Second, dietary patterns are changing, with greater consumption of processed foods and salt-rich meals^{6,11}. Third, reduced physical activity resulting from mechanization and changing occupational patterns may contribute to increased cardiovascular risk^{6,12}. Finally, improved screening during community health programmes may have identified previously undiagnosed cases⁶.

The public health significance of this finding is considerable. Hypertension is a major risk factor for stroke, heart failure, chronic kidney disease, and premature mortality. In many rural settings, awareness, treatment, and control rates remain low. The increasing trend observed in this study suggests that rural communities are increasingly vulnerable to cardiovascular disease and its complications.

Skin diseases constituted 29.8% of childhood diagnoses and increased by 76.9% over the study period. Fungal infections, scabies, impetigo, eczema, and contact dermatitis were the predominant conditions observed during clinical assessment.

The rising burden of childhood skin diseases likely reflects a combination of environmental and socioeconomic factors. Overcrowding, poor personal hygiene, limited access to clean water, inadequate sanitation, and poverty are well-recognized determinants of skin infections in children^{13,14}. The marked increase between 2024 and 2025 may indicate worsening environmental conditions or increased transmission within households and schools.

Although often perceived as minor illnesses, skin diseases can have significant consequences. Children may experience discomfort, itching, secondary bacterial infections, sleep disturbance, social stigma, and reduced school attendance¹⁵. Chronic dermatological conditions may also affect self-esteem and psychosocial development.

Malaria remained one of the most common diseases across both age groups. Despite ongoing malaria control efforts in Nigeria, rural communities continue to experience substantial transmission because of favourable mosquito breeding environments, inconsistent use of insecticide-treated nets, and limited vector control measures¹⁶.

The persistence of malaria alongside rising non-communicable diseases highlights the double burden of disease confronting rural populations. Health systems must therefore address both infectious and chronic conditions simultaneously.

The findings align with previous Nigerian studies reporting increasing hypertension prevalence in rural communities. Similar trends have been documented in South Africa, Ghana, and other sub-Saharan African countries^{16–19}. The predominance of skin

diseases among children also agrees with school-based surveys that identify dermatological conditions as a major cause of childhood morbidity^{20,21}.

However, the magnitude of the increase in both hypertension and skin diseases observed in this study is noteworthy. The prospective design allowed direct observation of changes over time rather than relying on retrospective records, strengthening the evidence for a genuine upward trend.

The trend analysis suggests that the burden of both non-communicable and communicable diseases increased during the surveillance period. The steeper rise in hypertension indicates a growing cardiovascular risk profile among adults in the community, while the marked increase in skin diseases among children suggests worsening environmental and hygiene-related determinants of health.

Public Health Implications

The findings have several important public health implications. The key public health implications include:

1. Need for routine hypertension screening. Community-wide blood pressure screening should become a regular component of primary healthcare services. Early detection and treatment can prevent cerebrovascular accident, heart failure, and kidney disease.
2. Strengthening primary healthcare systems. Primary healthcare centres should be equipped to manage chronic diseases, including hypertension and diabetes.

Healthcare workers require training in non-communicable disease prevention and management.

3. Improving child health and hygiene. School health programmes should incorporate routine skin examinations and hygiene education. Access to clean water and sanitation facilities should be improved and community campaigns should promote handwashing, regular bathing, and avoidance of sharing personal items.
4. Integrated disease control strategies. Interventions should simultaneously address communicable diseases such as malaria and skin infections and non-communicable diseases such as hypertension. Community health workers can play a central role in health education, screening, and follow-up.
5. Policy implications. Health planners should allocate resources for both infectious disease control and chronic disease prevention in rural communities. Community-based surveillance systems should be strengthened to monitor emerging health trends.

Conclusion

This three-year prospective community-based study demonstrates a changing

disease landscape in rural Nigeria. Hypertension emerged as the most common adult disease and showed a marked upward trend. Among children, skin diseases were the leading cause of morbidity.

The coexistence of chronic non-communicable diseases and persistent infectious and environmental illnesses highlights the double burden of disease facing rural communities. Strengthened primary healthcare services, routine screening, health education, improved sanitation, and community-based preventive interventions are essential to reduce this growing burden and improve population health outcomes.

Recommendations

There is the need to implement community-based hypertension screening programmes in rural, strengthen rural primary healthcare centres for chronic disease management, improve access to affordable antihypertensive medications, establish school-based skin disease screening and treatment programmes, enhance community hygiene and sanitation campaigns, improve access to clean water and environmental sanitation facilities, strengthen malaria prevention and vector control measures, develop community health surveillance systems for early detection of emerging disease trends and conduct multicentre rural studies to validate and expand these findings.

References

1. John Dike ON, Aguiyi-Ikeanyi CN, Isah A, Mosanya AU, Okonkwo-Uzor NJ, Okeke GN, et al. Assessment of Prevalence of Communicable and Non-Communicable Diseases in a Rural Community and its Neighborhood in Enugu State, Nigeria: A

- Cross-Sectional Epidemiological Survey from a Health Outreach. 2023;
2. The Global Burden of Disease: Main Findings for Sub-Saharan Africa [Internet]. [cited 2026 Jun 15]. Available from: <https://www.worldbank.org/en/region/afr/publication/global-burden-of-disease-findings-for-sub-saharan-africa>
 3. Niohuru I. Disease Burden and Mortality. 2023 [cited 2026 Jun 15];35–85. Available from: https://link.springer.com/chapter/10.1007/978-3-031-19719-2_3
 4. Feikin DR, Olack B, Bigogo GM, Audi A, Cosmas L, Aura B, et al. The Burden of Common Infectious Disease Syndromes at the Clinic and Household Level from Population-Based Surveillance in Rural and Urban Kenya [Internet]. Vol. 6. 2011 [cited 2026 Jun 15]. Available from: <http://stacks.cdc.gov/view/cdc/4307>
 5. WHO. Hypertension [Internet]. 2025. [cited 2026 Jun 15]. Available from: <https://www.who.int/news-room/fact-sheets/detail/hypertension>
 6. Gafane-Matemane LF, Craig A, Kruger R, Alaofin OS, Ware LJ, Jones ESW, et al. Hypertension in sub-Saharan Africa: the current profile, recent advances, gaps, and priorities. *J Hum Hypertens* 2024 392 [Internet]. 2024 May 2 [cited 2026 Jul 5];39(2):95–110. Available from: <https://www.nature.com/articles/s41371-024-00913-6>
 7. Schutte AE, Gona PN, Delles C, Uys AS, Burger A, Mels CMC, et al. The African Prospective study on the Early Detection and Identification of Cardiovascular disease and Hypertension (African-PREDICT): Design, recruitment and initial examination. *Eur J Prev Cardiol* [Internet]. 2019 Mar 1 [cited 2026 Jul 5];26(5):458–70. Available from: <https://pubmed.ncbi.nlm.nih.gov/30681377/>
 8. Schutte AE, Srinivasapura Venkateshmurthy N, Mohan S, Prabhakaran D. Hypertension in Low- and Middle-Income Countries. *Circ Res* [Internet]. 2021 Apr 2 [cited 2026 Jul 5];128(7):808. Available from: <https://pmc.ncbi.nlm.nih.gov/articles/PMC8091106/>
 9. Sarki AM, Nduka CU, Stranges S, Kandala NB, Uthman OA. Prevalence of Hypertension in Low- and Middle-Income Countries: A Systematic Review and Meta-Analysis. *Medicine (Baltimore)* [Internet]. 2015 [cited 2026 Jul 5];94(50):e1959. Available from: <https://pmc.ncbi.nlm.nih.gov/articles/PMC5058882/>
 10. Gómez-Olivé FX, Ali SA, Made F, Kyobutungi C, Nonterah E, Micklesfield L, et al. Regional and Sex Differences in the Prevalence and Awareness of Hypertension: An H3Africa AWI-Gen Study Across 6 Sites in Sub-Saharan Africa. *Glob Heart* [Internet]. 2017 Jun 1 [cited 2026 Jul 5];12(2):81–90. Available from: <https://pubmed.ncbi.nlm.nih.gov/28302553/>
 11. Chin JH, Twinobuhungiro A, Sandhu A, Hootsmans N, Kayima J, Kalyesubula R. Determinants of Raised Blood Pressure in Urban Uganda: A Community-Based Case-Control Study. *Ethn Dis* [Internet]. 2017 Dec 1 [cited 2026 Jul 5];27(1):15–20. Available from: <https://pubmed.ncbi.nlm.nih.gov/28115817/>
 12. Gebremichael GB, Berhe KK, Zemichael TM. Uncontrolled hypertension and associated factors among adult hypertensive patients in Ayder comprehensive specialized hospital,

- Tigray, Ethiopia, 2018. BMC Cardiovasc Disord [Internet]. 2019 May 22 [cited 2026 Jul 5];19(1). Available from: <https://pubmed.ncbi.nlm.nih.gov/31117945/>
13. Emodi IJ, Ikefuna AN, Uchendu U, Duru A. Skin diseases among children attending the out patient clinic of the University of Nigeria teaching hospital, Enug. Afr Health Sci [Internet]. 2010 [cited 2026 Jul 5];10(4):362. Available from: <https://pmc.ncbi.nlm.nih.gov/articles/PMC3052811/>
 14. Akinkugbe AO, Amira C, Ozoh B, Fasanmade O, Bandele E. PATTERN OF SKIN DISORDERS IN A RURAL COMMUNITY IN SOUTHWEST NI. NMJ [Internet]. 2016 [cited 2026 Jul 5];16(2). Available from: <http://tnhjph.com/index.php/tnhj/>
 15. Yotsu RR, Comoé CC, Ainyakou GT, Konan N, Akpa A, Yao A, et al. Impact of common skin diseases on children in rural Côte d'Ivoire with leprosy and Buruli ulcer co-endemicity: A mixed methods study. PLoS Negl Trop Dis [Internet]. 2020 May 1 [cited 2026 Jul 5];14(5):e0008291. Available from: <https://pmc.ncbi.nlm.nih.gov/articles/PMC7274456/>
 16. Avenié TJD, Silué KD, Guindo-Coulibaly N, Koné N, Touré S, Valian KL, et al. Epidemiological Profile and Risk Factors for Malaria in Rural Communities Before the Operationalization of the Singrobo–Ahouaty Dam, Southern Côte d'Ivoire. Trop Med Infect Dis [Internet]. 2025 Jul 1 [cited 2026 Jul 5];10(7):197. Available from: <https://pmc.ncbi.nlm.nih.gov/articles/PMC12300484/>
 17. Balmith M, Basson C, Brand SJ. The Malaria Burden: A South African Perspective. J Trop Med [Internet]. 2024 [cited 2026 Jul 5];2024:6619010. Available from: <https://pmc.ncbi.nlm.nih.gov/articles/PMC10907104/>
 18. Amoah LE, Abankwa J, Oppong A. Plasmodium falciparum histidine rich protein-2 diversity and the implications for PfHRP 2: Based malaria rapid diagnostic tests in Ghana. Malar J. 2016 Feb 18;15(1).
 19. SMO. Malaria in Ghana: Statistics & Facts | Severe Malaria Observatory [Internet]. [cited 2026 Jul 5]. Available from: <https://www.severemalaria.org/countries/ghana>
 20. Alex-Hart BA, Altraide DD. Prevalence of Skin Diseases among Primary School Children in Three Semi Urban Communities in Rivers State, Nigeria: A Community Based Study. Asian J Med Heal [Internet]. 2020 Apr 30 [cited 2026 Jul 5];58–65. Available from: <https://journalajmah.com/index.php/AJMAH/article/view/400>
 21. Ewurum O, Ibeneme CA, Nnaji TO, Ikefuna AN. Spectrum of skin disorders among primary school children in Umuahia, South-East Nigeria. Niger J Clin Pract [Internet]. 2022 Jul 1 [cited 2026 Jul 5];25(7):1076–82. Available from: https://journals.lww.com/njcp/fulltext/2022/25070/spectrum_of_skin_disorders_among_primary_school.15.aspx