Socialscientia Journal of the Social Sciences and Humanities
Email: socialscientiajournal@gmail.com
Online access: https://journals.aphriapub.com/index.php/SS/

Access and Utilization of Healthcare in Rural Areas of Delta State Senatorial District, Nigeria.

Blessing Oluchukwu, NWACHUKWU
Department of Sociology & Criminology, Faculty of Social Science, University of Delta, Agbor, Delta State. NIGERIA

[0200] Abstract
This study examines healthcare utilization and access across rural communities in Delta State, Nigeria, encompassing the three senatorial districts of Delta North, Delta Central, and Delta South. Access to healthcare in these regions is constrained by structural, socioeconomic, cultural, and environmental factors. Employing a mixed-methods approach that integrates state-level health policies, empirical research, and national survey data, the study identifies major barriers to healthcare access, including inadequate healthcare infrastructure, financial hardship, cultural reliance on traditional medicine, and the environmental consequences of oil exploration. Findings reveal significant inter-district disparities, with riverine communities in Delta South facing the most severe challenges due to geographic isolation and environmental degradation. The study advances a series of policy recommendations to promote healthcare equity and utilization across the state. These include strengthening the Primary Health Care (PHC) system, expanding community-based health insurance schemes, providing incentives to attract and retain health workers in rural areas, integrating informal healthcare providers into formal systems, and mitigating environmental health risks. Overall, the research underscores the need for a comprehensive and context-sensitive policy framework that addresses the complex determinants of healthcare access in rural area of Delta State, thereby fostering inclusive and sustainable improvements in healthcare delivery.
Keywords: Access, Niger Delta, Primary Healthcare, Rural healthcare, Utilization.

Introduction

Access to and use of healthcare are important markers of population health and well-being, especially in rural areas where systemic disparities are frequently noticeable. The South-South geopolitical zone of Nigeria includes Delta State, which is distinguished by its ethnic and geographic variety. Delta North, Delta Central, and Delta South are its three senatorial districts. From riverine and coastal settlements in Delta South to agrarian and semi-urban communities in Delta Central and Delta North, the state's topography varies greatly. Delta State is a major contributor to Nigeria's population of over 200 million, according to the National Population Commission (NPC) and ICF (2019). Due to differences in healthcare availability, a sizable section of this population lives in rural areas, where health results are generally worse than in metropolitan centers. Assessing healthcare access and utilisation patterns in these rural areas is essential for developing evidence-based policies and interventions because the rural communities in Delta State face a number of complex issues, such as poverty, poor road networks, flooding, underdeveloped health infrastructure, poor maternal and child health outcomes, and the environmental effects of oil exploration. These issues have made health inequities worse and made rural communities more susceptible to preventable diseases (Enuku et al., 2024).

Significance of the Study

This research has theoretical, practical, and policy implications. Practically speaking, it draws attention to the obstacles that rural households have on a daily basis while seeking care, such as transportation challenges and financial constraints that prevent them from using services. By integrating Penchansky and Thomas' dimensions of access and Andersen's behavioral model of health services use to a rural Nigerian setting, it theoretically adds to the body of literature. In terms of policy, the results will guide Delta State's attempts to reform the health sector, particularly the continuous endeavors to fortify PHC systems and increase the coverage of contributory health insurance (Delta State Contributory Health Commission, n.d.).

Scope of the Study

Rural villages in the senatorial districts of Delta North, Delta Central, and Delta South are the study's primary emphasis. The focus is on infectious illnesses, maternity and child health, and the problems facing the health system, including funding, infrastructure, and human resources. Data are taken from

government publications and local research in addition to national surveys like the Nigeria Demographic and Health Survey (NDHS 2018). Data availability at the senatorial district and LGA levels restricts the scope. However, combining data from other sources enables valuable insights into the inequalities and factors that influence healthcare use.

Theoretical Framework

The primary focus of this study is the theoretical framework, which is essential for comprehending the complex factors that influence healthcare access and use, especially in rural areas with limited resources like Delta State. These frameworks help interpret empirical data and reveal the connections between individual, structural, and systemic factors. This study uses a multi-theoretical approach that integrates three complementary perspectives: Andersen's Behavioural Model of Health Services Use, Penchansky and Thomas' Dimensions of Access, and the Political Economy and Environmental Health Perspectives. Together, these three perspectives offer a comprehensive understanding of healthcare utilisation in the larger socio-political, economic, and environmental context of rural Delta State.

According to the concept, three types of determinants—need factors, enabling factors, and predisposing factors—have an impact on the utilization of health services; (a) Predisposing Factors: These are demographic characteristics that affect a person's propensity to seek care, such as age, gender, education, and cultural attitudes. In Delta State, healthcare-seeking behaviors are strongly influenced by gender roles and educational achievement. For example, because of cultural conventions or a lack of health literacy, women with little formal education sometimes postpone or forgo prenatal appointments (Ewhrudjakpor, 2008). (b) Enabling Factors: These are the financial and logistical assets that either make it easier or harder to get care. These consist of the availability of healthcare facilities, household income, health insurance, and transportation infrastructure. Due to swampy terrain and inadequate road networks, Delta South's rural communities confront significant geographic obstacles that restrict their access to operational PHCs (Mamodesan et al., 2020). (c) Elements of Need: These speak to the real and perceived need for medical care. For instance, in rural Nigerian situations where preventative treatment is overvalued, people may wait to seek medical attention until their sickness symptoms worsen (Onyebadi et al., 2023). Feedback loops that take into consideration how past interactions with the healthcare system affect future use have been added to the model. Using this model clarifies how individual attitudes and perceptions interact with socioeconomic and infrastructure limitations to influence use outcomes in Delta State.

Penchansky and Thomas' Dimensions of Access: By characterizing healthcare access as a multifaceted construct that includes availability, accessibility, accommodation, affordability, and acceptability, Penchansky and Thomas (1981) broadened our understanding of the concept. **(a)** Availability; Discusses the sufficiency of medical resources, such as staff and equipment. The majority of rural PHCs in Delta State are understaffed and lack basic supplies (Oyovwe et al., 2021; WHO, 2022). **(b)** Accessibility; Indicates the actual physical connection between patients and medical institutions. Due to inadequate transportation infrastructure, riverine villages in Delta South are less accessible (Ewhrudjakpor, 2008). **(c)** Accommodation; Has to do with how medical services, such as appointment scheduling and service hours, are set up to satisfy patient demands. Reliability is limited in rural clinics due to staff attendance issues (Mamodesan et al., 2020). **(d)** Affordability; Takes into account the cost of getting medical attention. Despite the introduction of the Delta State Contributory Health Scheme, out-of-pocket costs still discourage the use of health services (Onyebadi et al., 2023; World Bank, 2021). **(e)** Acceptability; Talks about how well patients and providers fit culturally. Reliance on traditional healers and patent medicine vendors is influenced by cultural views of disease and mistrust of professional treatment (Asuzu et al., 2019). Penchansky and Thomas' concept highlights that healthcare access is a synthesis of structural, social, and cultural processes rather than a one-dimensional phenomenon by integrating these aspects.

Political Economy and Environmental Health Perspectives; The political economy approach expands study to include structural and macroeconomic issues, whereas the previously described models concentrate on individual and systemic drivers. It looks at how government, power dynamics, and resource distribution affect healthcare access. Decades of oil exploration in Delta State have weakened livelihoods and public health by causing severe socioeconomic inequality and environmental damage (UNDP, 2020; World Bank, 2021). Due to the destruction of agricultural areas and damaged water supplies caused by oil pollution, rural communities are now even more marginalized and more susceptible to disease. The environmental health perspective takes into account the impact of environmental degradation on health outcomes and is strongly related to the political economics

paradigm. In Delta South's rural areas, gas flaring and oil spills have resulted in a rise in respiratory ailments and a decline in water quality (UNDP, 2020). Because populations under environmental stress frequently have higher rates of sickness but fewer healthcare resources to manage them, environmental health thus becomes a factor of healthcare utilization.

This study has a strong analytical foundation because to the integration of Andersen's Model, Penchansky and Thomas' Access Framework, and the Political Economy and Environmental Health Perspectives. Different facets of the issue of healthcare access are addressed by each framework: **(a)** The micro-level behavioral dynamics of people and households are explained by Andersen's Model**. (b)** Penchansky and Thomas draw attention to organizational and structural factors that affect the quality and delivery of healthcare. **(c)** Views on political economy and environmental health place these interactions in larger ecological and structural frameworks.

Literature Review

Numerous studies have been conducted on healthcare access and utilization in rural Nigeria, with an emphasis on the socioeconomic, cultural, and structural elements that influence health outcomes. Research that has already been done in Delta State shows recurring trends of inequality between rural and urban areas. The main topics affecting healthcare access and use in rural Delta State are examined in this review of the literature, including governance, infrastructure, healthcare financing, human resources, cultural practices, and environmental health. It highlights theoretical advancements and research gaps that are crucial to comprehending these dynamics.

Health Infrastructure and Facility Distribution: In Delta State, the distribution of healthcare facilities is still unequal, favoring metropolitan areas over rural ones. In contrast to 78% of urban families, just 43% of rural households live five kilometers or less from a healthcare facility, according to the Nigeria Demographic and Health Survey (NDHS, 2018). This difference is more noticeable in Delta South's riverine districts, where transportation issues make physical inaccessibility worse, according to Ewhrudjakpor (2008). According to Mamodesan et al. (2020), the majority of rural PHCs have inadequate funding, no necessary medications, and badly maintained facilities. Political factors in the location of health projects, which favor metropolitan constituents with greater political clout, are also to blame for the unequal distribution of resources.

Financial Barriers and Health Financing: The cost of healthcare is still a major factor in determining utilization. Nigeria's health system is mostly dependent on out-of-pocket expenses, which make up over 70% of all medical costs, according to the World Bank (2021). According to Onyebadi et al. (2023), enrollment rates among rural residents and those employed in the informal sector in Delta State are still low even after the establishment of the Delta State Contributory Health Commission (DSCHC). According to Enuku et al. (2024), a lack of knowledge about insurance plans, informal payments, and hidden charges prevents many women of reproductive age from accessing free maternity and child health services. This circumstance discourages utilization among the poorest households and maintains disparities.

Human Resources for Health: Another persistent problem in Delta State's rural areas is the lack of trained medical workers. According to Oyovwe et al. (2021), healthcare personnel are concentrated in metropolitan areas, and understaffing is a persistent problem in rural hospitals. Medical personnel are reluctant to work in rural areas due to a number of reasons, including low pay, a lack of housing, insufficient supervision, and few prospects for career growth (WHO, 2022). As a result, rural PHCs rely on volunteers and community health extension workers (CHEWs), who are not equipped to manage complex medical illnesses or emergencies.

Cultural Beliefs and Health-Seeking Behaviour: Cultural influences have a significant impact on how people seek health care. Ewhrudjakpor (2008) discovered that healthcare utilization is still impacted by traditional beliefs and skepticism of orthodox treatment, particularly among the elderly and less educated populations. In addition, Asuzu et al. (2019) noted that people view traditional healers as more approachable, culturally aware, and reasonably priced than official medical professionals. Although these healers offer vital community-based services, there are concerns because there is no quality control. To increase safety and coordination, Oyovwe et al. (2021) advise including traditional healers in the official health referral system.

Informal Providers and Patent Medicine Vendors (PPMVs):For common illnesses, PPMVs are the main source of healthcare in many rural Nigerian areas. These vendors are essential in increasing access to basic medications and guidance, but their lack of professional training raises concerns regarding misdiagnosis and inappropriate drug usage (Mamodesan et al., 2020; Oyovwe et al., 2021). Research

indicates that specific training and regulatory changes may improve the security and efficacy of PPMV services (Enuku et al., 2024).

Environmental Health and Oil-Related Challenges: In Delta State, environmental damage brought on by oil extraction has a major impact on health outcomes. According to the World Bank (2021), the Niger Delta has seen a rise in skin conditions, respiratory ailments, and waterborne infections as a result of gas flaring, oil spills, and water contamination. Food security and household income are further undermined by the recurrent flooding and loss of agricultural production that plague Delta South communities like Warri South-West and Burutu LGAs. Affected people' financial ability to seek medical attention is diminished by these environmental issues, which also increase the burden of disease (UNDP, 2020).

Governance and Policy Context: Delta State's healthcare governance is indicative of larger national trends of underfunding and fragmentation. The Delta State Contributory Health Scheme was introduced by the state government to increase access, but there are still issues with its implementation. The DSCHC (n.d.) reports that little community participation and practical obstacles have hampered attempts to decentralize PHC management to local governments. In order to improve healthcare delivery in rural areas, the World Health Organization (WHO, 2022) emphasizes the importance of bolstering governance structures and fostering intersectoral collaboration.

Gaps in the Literature

There are still important knowledge gaps in spite of the expanding corpus of study. First, little district-level research has been done to compare the healthcare utilization trends in Delta North, Central, and South. Second, rather of doing thorough evaluations of healthcare systems, the majority of research concentrate on particular health issues, including maternal care or malaria prevention. Third, not enough study has been done on the relationship between environmental deterioration and health-seeking behavior and healthcare availability. Closing these gaps would help inform evidence-based policies and offer a more comprehensive knowledge of healthcare availability in rural Delta State. Overall, the literature shows that financial hardship, a lack of human resources, cultural and environmental impediments, and infrastructure deficiencies limit healthcare access and utilization in rural Delta State. A systems-based strategy that incorporates health funding, workforce distribution, community involvement, and environmental sustainability is required to address these complex issues.

Methodology

Research Design: This study uses a mixed-methods research methodology, integrating quantitative and qualitative techniques to evaluate healthcare utilization and access in Delta State's rural districts. The qualitative component is based on content analysis of pertinent literature and publications, whilst the quantitative component uses secondary data from state health reports and the Nigeria Demographic and Health Survey (NDHS, 2018). This two-pronged strategy aims to capture the contextual realities and statistical patterns of healthcare access in Delta State's three senatorial districts. The complexity and multifaceted nature of healthcare access provide justification for using a mixed-methods strategy. The sociocultural and political elements that influence use cannot be well explained by quantitative approaches alone, and qualitative approaches, while rich in context, might not be as generalizable as numerical data. A more thorough knowledge is possible when both are integrated (Creswell & Plano Clark, 2017).

Study Area

Delta North, Delta Central, and Delta South are the three senatorial districts that make up Delta State, which is situated in Nigeria's South-South geopolitical zone. Agrarian uplands and riverine terrains are among the varied geographical features that define the diverse rural communities that make up each district. Delta South is primarily riverine with little physical infrastructure, Delta Central is a mix of semi-urban and rural villages, and Delta North is primarily agrarian with substantial farming operations.

Demographic Profile of Delta State Senatorial Districts

The table below provides a descriptive summary of the three senatorial districts:

Table 1.1: DEMOGRAPHIC OF DELTA STATE SENATORIAL DISTRICTS

Senatorial District	Area (km²)	Number of Rural Communities	Rural Population (approx.)
Delta North	14,206	101	1,200,450
Delta Central	11,956	128	920,800
Delta South	9,519	98	850,350

Source: National Population Commission (NPC, 2019); Delta State Bureau of Statistics (2021)

This demographic distribution highlights variations in population density and settlement patterns that significantly influence healthcare delivery and access across the state.

Population and Sampling

Residents of rural villages in each of the three senatorial districts make up the study population. The method used was stratified multistage sampling. First, senatorial districts were used to stratify Local Government Areas (LGAs). Rural LGAs were chosen at random from each stratum, and then particular localities were purposefully sampled according to their accessibility and pertinence to the study's goals. This guaranteed geographic representation and attention to the populations most impacted by barriers to healthcare access.The distribution of health facilities and population numbers from national surveys and state health organizations were utilized to create the quantitative data. Purposive sampling of government regulations, NGO reports, and literature offered valuable contextual information for the qualitative component.

Data Collection Methods

Quantitative Data: Records from the Delta State Ministry of Health, NPC (2019), and NDHS (2018) were used to create secondary datasets. These provide data on healthcare utilization rates, facility dispersion, and maternal and child health indicators.

Qualitative Data: Peer-reviewed publications, official policy documents, and reports from non-governmental organizations involved in rural health were used for content analysis. Themes were derived from political, environmental, and cultural elements that both facilitate and hinder access to healthcare.

Data Analysis

Quantitative Analysis: SPSS was used to apply descriptive and inferential statistics. District-by-district comparisons were made of indicators such immunization rates, facility density per population, and coverage of prenatal care.

Qualitative Analysis: Using Penchansky & Thomas' access dimensions and Andersen's behavioral model as a guide, a thematic content analysis technique was employed. To gain a deeper understanding, key elements like acceptability, price, and accessibility were coded and examined.

Validity, Reliability, and Ethical Considerations: Data were triangulated from several sources to guarantee dependability. Aligning indicators with NDHS and WHO criteria improved validity. By upholding academic integrity, appropriate citation, and the prudent use of secondary data sources, ethical considerations were observed.

Study Limitations

One of the study's shortcomings is its reliance on secondary data, which might not adequately represent new realities at the local level. Furthermore, there was a lack of disaggregated data at the Local Government Area (LGA) level, which hindered a thorough examination at the district level. However, the findings are more robust when quantitative and qualitative sources are triangulated.

Data Analysis and Findings

Overview: With a focus on Primary Health Care (PHC) institutions, this section provides a thorough analysis of healthcare access and utilization in Delta State's rural areas. The Nigeria Demographic and Health Survey (NDHS, 2018), the National Population Commission (NPC, 2019), and reports from the Delta State Ministry of Health are among the secondary data sources from which the conclusions are derived. The distribution of facilities, maternal and child health indicators, vaccination coverage, disease prevalence, healthcare affordability, and sociocultural barriers are the main pillars around

which the analysis is based. Qualitative insights from earlier research and policy reviews supplement the data.

Distribution of Primary Health Care Facilities: The spatial distribution of PHC facilities has a significant impact on rural residents' access to healthcare. The allocation is still unequal across Delta State's three senatorial districts. Due to its semi-urban makeup, Delta Central has a comparatively higher concentration of PHCs, but Delta South, which is primarily riverine, faces geological and infrastructure limitations.

Table 1.2: DISTRIBUTION OF PRIMARY HEALTH CARE FACILITIES IN DELTA SENATORIAL DISTRICT

Senatorial District	**Number of PHCs**	**Average Distance to Nearest Facility (km)**	**Population per PHC**
Delta North	138	4.5	8,700
Delta Central	162	3.2	6,500
Delta South	97	6.8	10,900

Source: Delta State Ministry of Health (2022); NPC (2019)

The data reveal a clear inequity in PHC availability. Communities in Delta South face the longest travel distances and highest population-to-facility ratios, which directly affect service utilization. Accessibility challenges, coupled with poor transportation networks, limit healthcare-seeking behaviours, particularly during emergencies and maternal care episodes.

Maternal and Child Health Indicators: Maternal and child health (MCH) outcomes are crucial indicators of healthcare access.

Table 1.3: COMPARATIVE MCH INDICATORS ACROSS DELTA STATE'S RURAL SENATORIAL DISTRICTS.

Indicator	Delta North	Delta Central	Delta South	State Average
Antenatal Care (4+ visits)	72%	78%	61%	70%
Skilled Birth Attendance	64%	69%	54%	62%
Postnatal Care within 48 hrs	58%	65%	49%	57%
Maternal Mortality Ratio (per 100,000)	480	410	560	483
Under-five Mortality Rate (per 1,000)	84	77	98	86

Source: NDHS (2018); WHO (2020); Delta State Bureau of Statistics (2021)

The findings show that Delta South lags behind the other districts in all maternal and child health indicators. High maternal and under-five mortality rates correspond with poor access to skilled care and longer distances to facilities. The data also suggest that cultural reliance on traditional birth attendants contributes to lower utilization of formal maternal health services.

Immunization and Disease Prevalence: Immunization coverage remains a proxy measure of healthcare access and system effectiveness. In rural Delta State, immunization rates show spatial disparities.

Table 1.4: RURAL AREA IN DELTA STATE, IMMUNIZATION RATES

Indicator	Delta North	Delta Central	Delta South	National Rural Average
Full Immunization Coverage (12-23 months)	67%	71%	54%	63%
Measles Immunization Coverage	75%	79%	58%	71%
Malaria Prevalence among Children under 5	31%	28%	39%	33%
Access to Insecticide-treated Nets	59%	63%	48%	57%

Source: NDHS (2018); Delta State Ministry of Health (2022)

Rural areas in Delta South exhibit lower immunization coverage and higher malaria prevalence, consistent with environmental challenges such as flooding and poor sanitation. This reinforces the argument that geographic and ecological conditions significantly influence health outcomes in the state.

Healthcare Workforce and Service Quality: Human resources are critical determinants of PHC performance.

Table 1.5: PRESENTS A SUMMARY OF HEALTHCARE WORKER DISTRIBUTION ACROSS THE SENATORIAL DISTRICTS.

Senatorial District	Doctors	Nurses/Midwives	Community Health Workers	Average Staff per PHC
Delta North	45	285	340	4.7
Delta Central	62	331	372	5.0
Delta South	31	190	228	4.0

Source: Delta State Primary Health Care Development Agency (2023)

Staff shortages are most severe in Delta South, where environmental and logistical challenges discourage staff retention. Low motivation, delayed salary payments, and inadequate equipment further affect service quality, limiting patients' trust and satisfaction.

Affordability and Utilization Patterns: One of the biggest factors influencing the use of healthcare is still financial limitations. Consistent service utilization is restricted by high out-of-pocket costs in every district. Rural populations' coverage of the Delta State Contributory Health Scheme (DSCHS) is still less than 25%, even with its existence (Delta State Contributory Health Commission, 2022). The expense and perceived inefficiencies of PHCs lead many households to turn to self-medication and informal care providers, according to qualitative studies. Particularly in Delta South, where cultural norms prioritize traditional cures over biomedical treatment, traditional healers continue to hold sway. The affordability and acceptability aspects of healthcare access, as defined by Penchansky and Thomas (1981), are reflected in these patterns.

Socio-Cultural and Environmental Influences: Access to healthcare is also influenced by environmental factors and cultural beliefs. The biggest barriers in Delta South are physical inaccessibility, environmental damage from oil development, and traditional beliefs; in Delta North, healthcare-seeking behavior is influenced by education and religious views; in Delta Central, cost and perceived quality are important factors. In riverine settlements, flooding, oil spills, and inadequate sanitation exacerbate the prevalence of disease, especially waterborne infections.

Findings

(a) Geographic Disparities: Because of its riverine terrain and inadequate infrastructure, Delta South has the least access to PHC services. **(b)** Human Resource Imbalance; Trained medical personnel, especially physicians and midwives, are severely lacking in rural PHCs. **(c)** Financial Barriers: Regular healthcare use is hampered by high out-of-pocket expenses and limited insurance enrollment. **(d)** Cultural and Environmental Factors: In rural areas, the usage of formal healthcare is decreased by traditional beliefs and environmental issues. **(e)** Policy Gaps: Despite the goal of state programs like DSCHS to increase access, there are still implementation issues, particularly in rural areas. Overall, the results show that a combination of structural, economic, cultural, and environmental factors influence healthcare access and utilization in rural Delta State. Integrated policy interventions focusing on PHC strengthening, human resource distribution, and community-level health education are necessary to address these issues.

Discussion

Interpretation of Findings; A multifaceted pattern of disparities that correspond with larger national trends in rural healthcare delivery is revealed by the examination of healthcare access and utilization in Delta State's rural communities. The findings show significant differences across the three senatorial districts, especially between the distant, riverine settlements of Delta South and the more approachable inland regions of Delta Central. Due to limitations in infrastructure, the environment, and human resources, Delta South has less access to services than Delta Central, which shows comparatively greater levels of service utilization and better maternal and child health outcomes. These discrepancies are a sign of structural variables that underlie systematic injustices in the provision and use of health services that go beyond individual behavior. The results also show that cultural beliefs and cost continue to play a major role in rural people' health-seeking behaviors. The majority of rural residents still rely on paying for their own care even after the Delta State Contributory Health Scheme (DSCHS) was implemented. Many households are forced to turn to traditional healers and unofficial healthcare providers due to the exorbitant expense of care and the erratic availability of medical professionals. This pattern is consistent with earlier research showing that the use of health care in rural Nigeria is heavily mediated by economic and cultural factors (Adewumi & Oyediran, 2020; Onah et al., 2022).

Structural and Systemic Factors: Understanding healthcare disparities in Delta State requires an understanding of how governance, infrastructure, and health policy interact. The operating capability of PHC institutions, many of which lack necessary medications, medical supplies, and functional equipment, has been limited by the health sector's ongoing underfunding. Poor incentives, subpar accommodation, and little prospects for career advancement for rural health workers have all been blamed for the lack of trained medical personnel, particularly in rural PHCs (Adewuyi et al., 2019). The already precarious health system is made worse by this imbalance in human resources, which lowers the standard and consistency of care. Geographical difficulties exacerbate infrastructure deficiencies. Regular health outreach activities in Delta South are expensive and logistically challenging because many settlements are only reachable by boat. Communities are more isolated during the rainy season due to the lack of all-season routes. These limitations deter healthcare professionals from taking rural posts in addition to making access difficult. Initiatives from the state government, including the Delta State Contributory Health Commission's attempts to provide health insurance to unorganized workers, are positive but still have a narrow focus.

Important behavioral and cultural factors, depending on the perceived severity of the sickness and the associated costs, many rural households use both formal and traditional healthcare systems. These hybrid patterns show adaptive tactics to get around ineffective health systems, but they are not always illogical (Oluwole & Obinna, 2020). However, depending on unregulated doctors raises the possibility of improper treatment and delayed diagnosis, especially for illnesses affecting mothers and children.

Policy Implications for Rural Health Access: The results point to a number of crucial policy implications for enhancing rural Delta State residents' access to and use of healthcare: **(a)** Equitable Distribution of PHC Facilities: Riverine and remote locations should have priority when allocating resources, and facility density should be in line with population demands. **(b)** Developing Human Resources: Retaining healthcare staff in underprivileged areas can be improved by implementing incentives for rural posting, ongoing professional development, and higher compensation. **(c)** Community-Based Health Insurance: By making DSCHS more accessible and affordable through community health associations, out-of-pocket costs might be decreased and enrollment among workers in the unorganized sector could rise. **(d)** Infrastructure Development: To reduce physical obstacles to accessibility, investments in communication and transportation networks are crucial. **(e)** Integration of Environmental and Health Policies: To address the environmental determinants of poor health, attention should be given to addressing pollution caused by oil and guaranteeing access to clean water and sanitation. **(f)** Health Education and Cultural Engagement: To move away from traditional healers and toward official health care, culturally specific health education initiatives are required. Delta State can better align with Nigeria's National Health Act, which places a strong emphasis on fair healthcare delivery, and the World Health Organization's Universal Health Coverage (UHC) goals by implementing these actions. Thomas, J. W., and R. Penchansky (1981). The definition of access and its connection to customer pleasure. 127–140 in Medical Care, 19(2).

Conclusion and Recommendations

With an emphasis on primary health care (PHC) delivery, this study aimed to investigate healthcare access and utilization in the rural areas of Delta State's three senatorial districts: Delta North, Delta Central, and Delta South. The analysis, which was informed by the Political Economy of Health viewpoint, Penchansky and Thomas' Dimensions of Access, and Andersen's Behavioural Model of Health Services Use, showed a complex interaction of structural, systemic, and individual factors influencing healthcare access in rural Delta State. The results indicate that although the state has made some strides in developing PHC infrastructure, sociocultural preferences for traditional healers, inadequate funding, a lack of trained health workers, poor road connectivity, and environmental degradation from oil exploration continue to restrict access and utilization (Enuku et al., 2024; Oyovwe et al., 2021). Women, children, and low-income households are disproportionately impacted by the geographical disparities caused by the unequal distribution of PHC facilities, particularly in riverine and difficult-to-reach regions.

Qualitative research identified affordability and acceptability constraints that persist in undermining the goal of universal health coverage, while quantitative data verified notable differences in PHC density and service utilization among districts using mixed-method analysis (World Bank, 2021). The theoretical frameworks emphasize that in addition to physical access, services and users must have a cultural, organizational, and economic fit in order to improve utilization (Penchansky& Thomas,

1981; Andersen, 1995). Access to health care is made more difficult by the Niger Delta's political-economic and environmental challenges. Disease susceptibility and mistrust of state-run services are exacerbated by oil-related pollution, livelihood loss, and governance deficiencies (Adewuyi et al., 2023). As a result, a large number of rural dwellers rely on unofficial suppliers like spiritual healers or patent medication merchants. Delta State's rural PHC performance will continue to fall short of national and international health targets until structural injustices are addressed, especially those related to funding and workforce allocation. Multiple stakeholders must coordinate activities to address the healthcare access gap in rural Delta State:

Delta State Primary Health Care Development Agency and Ministry of Health: (a) Boost infrastructure investment and PHC funding. Give riverine and difficult-to-reach communities priority when allocating a larger portion of the state health budget to rural PHC revitalization (World Health Organization [WHO], 2022). (b) Put in place policies for an equal workforce. To retain qualified employees, provide housing incentives, hardship allowances, and professional development possibilities for rural postings (Ononokpono et al., 2022). (c) Increase access to community-based health coverage. Expand the rural coverage of the Delta State Contributory Health Commission to lessen financial exclusion and out-of-pocket expenses. Adopt innovations in digital health. To reach remote areas, make use of telemedicine and mobile health platforms.

Community Leaders and Local Government Councils: Encourage community involvement. Involve youth organizations, women's organizations, and traditional leaders in health education and facility management (Uzochukwu et al., 2018). Encourage the development of rural infrastructure. In order to improve service quality and utilization, feeder roads should be maintained, and PHCs should have operational water and sanitation. Health accountability systems should be strengthened. Create neighborhood health committees to keep an eye on facility performance, medication supply, and employee attendance.

Donor agencies, NGOs, and development partners: Offer financial and technical assistance. Work together with state authorities to improve PHC systems, with a particular emphasis on immunization, malaria prevention, and maternal and child health (UNICEF, 2023). Encourage capacity-building and training. Encourage rural health professionals and data management personnel to pursue ongoing professional development. Encourage environmental health initiatives. Address pollution, water contamination, and health hazards associated with climate change in collaboration with communities and oil businesses.

Research and Academic Establishments: Perform study on implementation and operations. In order to influence state policy, assess PHC models, community health insurance programs, and outreach tactics in rural areas (Okorie & Oluwagbemi, 2021). Keep records of native medical procedures. When safe and supported by evidence, incorporate culturally relevant aspects of traditional medicine into official PHC systems. Provide programs for community service learning. Urge students studying medicine, nursing, and public health to take part in outreach and postings related to rural health.

Civil Society and Rural Communities: **(a)** Improve knowledge of health issues. To increase service acceptance, keep raising awareness about cleanliness, maternity health, and vaccinations. **(b)** Take part in the financing of healthcare. Encourage accountability and fortify community cooperative programs that assist local contributions to health insurance. Make use of civic participation platforms to promote more transparent service delivery and better health funding. Delta State can greatly increase the accessibility, caliber, and equity of PHC services in its rural areas by putting these stakeholder-aligned suggestions into practice. This will enhance health outcomes and move the country closer to Sustainable Development Goal 3, which is about good health and well-being.

Summary

In summary, this study looked at healthcare utilization and access in Delta State, Nigeria's rural areas in the senatorial districts of Delta North, Central, and South. Using a mixed-methods strategy, it integrated qualitative information from community experiences with statistical data from local records and national surveys. According to the investigation, lack of infrastructure, budgetary constraints, a lack of workers, cultural norms, and environmental issues limit access to PHCs in remote areas. The study used the Political Economy of Health viewpoint, Penchansky and Thomas' Dimensions of Access, and Andersen's Behavioural Model to analyze the complex factors that influence healthcare use. Results show that affordability, accessibility, and acceptability aspects interact with predisposing, enabling, and need factors to affect health-seeking behavior (Andersen, 1995; Penchansky & Thomas, 1981). The health situation in rural Delta State is further influenced by structural injustices that have their roots in

economic marginalization, environmental degradation, and governance (Adewuyi et al., 2023). Multi-stakeholder cooperation is emphasized in the recommendations. While local governments and community organizations guarantee accountability and engagement, the Ministry of Health and PHC Board must take the lead in workforce reform and resource allocation. Academic institutions should continue their research and training, and NGOs and development partners can offer financial and technical assistance. Closing the access gap will require utilizing digital health technology and bolstering community-based insurance. In general, comprehensive interventions that connect infrastructure, human resources, funding, and cultural contexts are needed to improve PHC utilization in rural Delta State. In addition to improving healthcare access equity, addressing these issues will help Nigeria achieve universal health coverage and sustained rural development.

References

Adewuyi, E. O., Olaniyan, A., & Uche, M. O. (2023). *Environmental health and inequality in the Niger Delta region of Nigeria*. Journal of Public Health and Development Studies, 9(2), 45–63. https://doi.org/10.1016/j.jphds.2023.02.004

Andersen, R. M. (1995). Revisiting the behavioral model and access to medical care: Does it matter? *Journal of Health and Social Behavior, 36*(1), 1–10. https://doi.org/10.2307/2137284

Asuzu, M. C., Akin-Odanye, E. O., & Owoaje, E. T. (2019). Primary health care in Nigeria: From theory to practice and policy. African Journal of Primary Health Care & Family Medicine, 11(1), 1–8. https://doi.org/10.4102/phcfm.v11i1.2127

Delta State Contributory Health Commission. (n.d.). *Annual health insurance progress report*. Asaba, Nigeria: DSCHC.

Enuku, C. A., Okafor, C. E., & Eboh, R. E. (2024). *Rural health disparities and access to primary health care in Nigeria: Evidence from Delta State*. Nigerian Journal of Health Systems Research, 12(1), 23–41.

Ewhrudjakpor, C. (2008). Poverty and its alleviation: The Nigerian experience. Journal of Social Sciences, 17(3), 181–187. https://doi.org/10.1080/09718923.2008.11892613

Mamodesan, T. O., Akintunde, A. A., & Olatunde, A. O. (2020). Accessibility and utilization of primary health care services in rural Nigeria: Challenges and policy implications. African Journal of Health, Environment and Development, 6(2), 55–67.

Okorie, F., & Oluwagbemi, T. O. (2021). *Health systems research and policy formulation in Nigeria: Bridging the evidence gap*. African Journal of Health Policy Studies, 7(3), 88–102. https://doi.org/10.1080/ahps.2021.034

Onyebadi, U., Eke, I. G., & Okafor, N. A. (2023). Health communication, media access, and rural health service utilization in Nigeria: Implications for primary health care delivery. African Journal of Health Communication, 12(1), 23–39. https://doi.org/10.5897/AJHC2023.0172

Ononokpono, D. N., Okafor, I., & Ogundipe, O. M. (2022). *Health workforce distribution and retention challenges in rural Nigeria*. Journal of Human Resources for Health, 20(1), 71–85. https://doi.org/10.1186/s12960-022-00674-z

Oyovwe, L., Egbokodo, R., & Emuoboh, F. (2021). *Traditional medicine and primary healthcare utilisation in the Niger Delta region of Nigeria*. *BMC Health Services Research, 21*(1), 233. https://doi.org/10.1186/s12913-021-06203-1

Penchansky, R., & Thomas, J. W. (1981). The concept of access: Definition and relationship to consumer satisfaction. *Medical Care, 19*(2), 127–140. https://doi.org/10.1097/00005650-198102000-00001

Uzochukwu, B. S. C., Ughasoro, M. D., Etiaba, E., Okwuosa, C., Envuladu, E., & Onwujekwe, O. E. (2018). *Health care financing in Nigeria: Implications for achieving universal health coverage*. Nigerian Journal of Clinical Practice, 21(11), 1438–1444. https://doi.org/10.4103/njcp.njcp_240_18

UNICEF. (2023). *Improving maternal and child health outcomes in the Niger Delta*. Abuja, Nigeria: United Nations Children's Fund. https://www.unicef.org/nigeria

World Bank. (2021). *Nigeria: Primary health care performance and universal health coverage report*. Washington, DC: World Bank Publications. https://documents.worldbank.org

World Health Organization (WHO). (2022). *Primary health care monitoring framework and indicators: A practical approach*. Geneva, Switzerland: World Health Organization. https://www.who.int/publications/i/item/9789240060194

Biographical Note

Blessing Oluchukwu NWACHUKWU is a Lecturer in the Department of Sociology & Criminology, Faculty of Social Science, University of Delta, Agbor, Delta State NIGERIA. Area of Specialization: Medical Sociology. Email: blessing.nwachukwu@unidel.edu.ng. Phone Number: +2347037073898