



Challenges of Private Healthcare Services in Nigeria: A Study of Private Hospitals in Rural Areas in Nigeria

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Article Info

ISSN (online): 2582-7138

Volume: 05

Issue: 06

Novembar-December 2024

Received: 07-09-2024

Accepted: 08-10-2024

Page No: 454-462

Abstract

This study examines the challenges facing private healthcare services in rural Nigeria, focusing on the barriers that limit the quality and accessibility of healthcare in private hospitals. Using quantitative survey-based methodology to investigate key challenges faced by private healthcare providers in rural Nigeria, while a descriptive cross-sectional survey design was adopted to capture the existing challenges in private healthcare service delivery in rural areas, data was collected from healthcare professionals and patients in select rural private hospitals a sample size of 600 from the six geographical zones in Nigeria, revealing three major constraints: high costs of medical equipment and supplies, inadequate infrastructure, and low affordability for patients. Findings show that the prohibitive costs of essential medical supplies severely restrict the availability of critical treatments and diagnostics, resulting in lower patient satisfaction and difficulties in retaining skilled healthcare personnel. Poor infrastructure, including unreliable electricity, inadequate road networks, and insufficient telecommunications, hinders timely medical interventions and further discourages professionals from practicing in these areas. Additionally, high patient costs create substantial access barriers, preventing low-income community members from seeking timely medical attention, which in turn exacerbates health outcomes. The study suggested among others that government and healthcare stakeholders should consider establishing subsidies, grants, or low-interest loans. The government, in collaboration with private investors, should prioritize the construction and maintenance of roads, enhance electricity supply, and improve telecommunications infrastructure, and to enhance affordability, private hospitals could offer flexible payment options, such as installment plans, sliding fee scales, or health insurance plans that cater to low-income patients.

Keywords: Private hospital, healthcare, rural area, medical costs, infrastructure, patient affordability

Introduction

The healthcare system in Nigeria faces significant challenges, with a notable divide between urban and rural access to healthcare. While the public sector is tasked with providing healthcare for the majority, the private sector has increasingly become a key player, especially in rural areas where government facilities are often sparse or under-resourced (Adepoju, 2017) ^[7]. Private healthcare services in rural Nigeria are vital in addressing unmet health needs, as these areas suffer from limited infrastructure, workforce shortages, and lower health outcomes compared to urban areas. Private hospitals in rural areas often become the primary health providers, bridging the gap created by public sector deficiencies. However, these private hospitals face numerous challenges that undermine their ability to deliver quality healthcare services (Adeloye *et al.*, 2022) ^[5].

The economic burden of healthcare financing is a primary issue for private facilities in rural areas. Unlike urban settings, where a higher portion of the population may afford out-of-pocket payments or have access to health insurance, rural populations

typically face more significant financial constraints. Nigeria lacks a comprehensive healthcare financing system that includes rural and low-income populations, and out-of-pocket payments remain the predominant means of financing healthcare (Amaghionyeodiwe, 2018) ^[10]. This reliance on out-of-pocket funding strains both patients and healthcare providers. For many private hospitals, particularly in rural areas, financial sustainability is a constant struggle, often resulting in reduced service capacity, lower investment in essential infrastructure, and challenges in maintaining staff salaries, which subsequently affects healthcare delivery.

Human resource constraints also critically hinder private healthcare services in rural Nigeria. The healthcare workforce shortage is a national crisis exacerbated in rural settings, where private facilities struggle to attract and retain qualified personnel due to limited resources and lower compensation compared to urban centers (Ekpenyong *et al.*, 2020) ^[17]. The “brain drain” phenomenon, wherein Nigerian healthcare professionals migrate to other countries with better working conditions, further worsens this situation, leaving rural hospitals with insufficient staff. Consequently, the remaining health workers in these areas are often overburdened, affecting both the quality and consistency of care provided.

Infrastructure and technology gaps represent another significant challenge. Rural private hospitals frequently operate with outdated medical equipment and often lack essential diagnostic and therapeutic tools due to the high cost of healthcare technology and Nigeria’s reliance on imported medical devices (Ogunjimi *et al.*, 2019) ^[20]. Additionally, inadequate transportation and unreliable power supply further strain service delivery in these areas. The lack of modern infrastructure and technology impedes rural private hospitals’ ability to offer timely and comprehensive care, which is critical for managing rural health challenges such as infectious diseases, maternal health complications, and non-communicable diseases.

The regulatory environment further complicates healthcare delivery for private hospitals in rural Nigeria. Although regulatory frameworks exist to oversee private healthcare providers, enforcement is inconsistent, particularly in remote areas where regulatory oversight is limited. This situation creates disparities in the quality of care provided across different regions, with rural private hospitals often operating with minimal oversight. Inconsistent regulation also limits the potential for private hospitals to access public resources or partner with government programs, thereby restricting their capacity to improve service delivery.

Problem

Private healthcare services are increasingly essential to Nigeria's healthcare system, particularly in rural areas where public health infrastructure is often limited or inaccessible. Despite their importance, private hospitals in rural Nigeria face a unique set of challenges that significantly impact their ability to deliver effective healthcare. These challenges include financial constraints due to reliance on out-of-pocket payments in areas with low-income populations, inadequate regulatory oversight, and limited access to modern medical technology and infrastructure (Adepoju, 2017; Adeloye *et al.*, 2022) ^[6, 5]. Also rural private hospitals struggle with a severe shortage of healthcare professionals, exacerbated by migration of skilled workers to urban centers and abroad, which limits their ability to provide quality care consistently

(Ekpenyong *et al.*, 2020) ^[17]. The combination of these issues undermines not only the quality of healthcare provided but also the accessibility and affordability of essential health services for rural populations. Consequently, rural Nigerians often face greater health risks and disparities, contributing to poorer health outcomes and a higher burden of preventable diseases. It is against this background that this paper seeks to examine these challenges in depth, aiming to provide evidence-based insights and recommendations that could support policy interventions and investment in rural healthcare.

Purpose of the study

1. To analyze the impact of the high cost of medical equipment and supplies on the quality of healthcare services provided by private hospitals in rural Nigeria.
2. To examine how inadequate infrastructure, such as unreliable electricity and poor road networks, affects the operations and service delivery of private hospitals in rural areas.
3. To assess the effect of high patient costs and low affordability on access to healthcare services in private hospitals in rural Nigeria.

Questions

1. How does the high cost of medical equipment and supplies influence the quality of healthcare services in private hospitals in rural Nigeria?
2. In what ways does poor infrastructure impact the operations and service delivery of private hospitals in rural areas?
3. How do high patient costs and low affordability affect access to healthcare services in private hospitals in rural Nigeria?

This study will benefit policymakers, healthcare providers, rural communities, and health-focused NGOs. Policymakers can use the findings to craft targeted interventions addressing infrastructure and affordability challenges in rural healthcare. Private healthcare providers can gain insights into cost management and operational improvements, while rural communities may experience improved healthcare access and quality if these issues are addressed. NGOs working in healthcare will benefit by gaining a clearer understanding of rural healthcare needs, allowing them to direct resources and advocacy efforts more effectively.

Literature Review

Concept of Private Health Care Services

In recent years, scholars have defined private health care services as health-related services offered by non-governmental entities, including individuals, partnerships, and corporate organizations, to meet the health needs of individuals through personal funding or insurance schemes (Adeloye, 2018; Adebowale *et al.*, 2019) ^[5, 3]. According to Ojo *et al.* (2020) ^[23], private health care services in Nigeria encompass a wide range of facilities, from small clinics to well-established hospitals, which provide specialized medical treatments that may not always be available in public health facilities. These services are typically funded by out-of-pocket payments from patients, making affordability and accessibility significant issues in Nigeria's health care landscape (Adeloye, 2018; Adebowale & Adeniran, 2019) ^[5, 3].

Furthermore, Adeyemi (2019) ^[7, 8] contended that private health care services play a complementary role to public health systems in Nigeria by alleviating the burden on public health facilities and reducing patient wait times. This sector, however, is often driven by profit motives, which may affect the quality and accessibility of services, especially for low-income populations. Private health care services in Nigeria, as defined by Adebowale *et al.* (2019) ^[3], also include specialized services such as diagnostic and laboratory facilities, dental care, and elective surgical services. However, scholars have noted that due to regulatory challenges, there is significant variation in the quality and pricing of services offered in private health care, impacting patient outcomes and health equity across different regions (Ojo *et al.*, 2020) ^[23]. Thus, scholars have generally characterized private health care services as a vital yet complex component of the health care system, underscored by issues of cost, regulation, and quality control (Adeyemi, 2019; Ojo *et al.*, 2020) ^[7, 8].

Concept of Private Hospital

A number of researchers have defined private hospitals as health care institutions operated by non-state entities that provide medical care on a fee-for-service basis, often outside of government health insurance schemes (Mensah *et al.*, 2018; Asante & Kusi, 2020) ^[19, 11]. These institutions range from small clinics and specialized facilities to large hospitals with a wide array of diagnostic and treatment services. According to Aboagye *et al.* (2019) ^[1], private hospitals serve as essential alternatives to public facilities, especially in urban areas where the demand for timely and specialized care often exceeds the capacity of government hospitals. However, access to private hospitals is typically limited to individuals who can afford out-of-pocket payments or private health insurance, which has implications for health equity and accessibility across socioeconomic groups (Asante & Kusi, 2020) ^[11].

As observed by Boateng and Ofori (2020), the role of private hospitals is critical for decongesting public health facilities and offering specialized services that may not be readily available in government hospitals, such as advanced surgical procedures and comprehensive diagnostic services. However, the profit-driven nature of private hospitals has led to challenges regarding cost regulation, with charges often varying widely between institutions (Aboagye *et al.*, 2019) ^[1]. This variability underscores the need for effective policy frameworks to ensure that private hospitals meet national standards in both pricing and quality of care.

These scholars (Mensah *et al.*, 2018; Boateng & Ofori, 2020) ^[19, 16] conceptualize private hospitals as a fundamental but complex part of the health system that provides indispensable services alongside public facilities while posing unique regulatory and accessibility challenges. Their role, scholars argue, will continue to grow as health demands increase, necessitating policies that balance accessibility, quality, and affordability.

Concept of Rural Areas

Researchers have variously defined "rural area" based on demographic, economic and geographic factors, often emphasizing their contrast to urban areas in terms of population density, infrastructure, and economic activities. According to Olatunji (2018) ^[26], rural areas are characterized by low population density and a strong reliance on agriculture

or other primary sector activities, with limited access to advanced infrastructure such as healthcare, education, and transportation networks. In this context, rural areas are seen as communities that depend heavily on traditional economic systems and informal labor, contributing to distinctive social and economic structures that influence the daily lives of residents. Adebayo and Abiola (2019) ^[2] maintained that rural areas in many countries, particularly in sub-Saharan Africa, are not only geographically isolated but also marked by limited social services and fewer economic opportunities. This lack of access contributes to unique challenges in public health, educational attainment, and economic development, as rural residents often face significant barriers in accessing government services and private sector investments (Adebayo & Abiola, 2019) ^[2]. From this perspective, rural areas are defined not only by their physical characteristics but also by their socio-economic marginalization, which has profound implications for development policies.

In contrast, Oseni and Ibrahim (2018) ^[28] shows the cultural dimensions of rural areas, noting that rural communities often exhibit strong social cohesion, traditional values, and reliance on community-based governance structures. This definition emphasizes that rural areas are more than just locations but represent distinctive lifestyles and social norms that shape community interactions and responses to external influences, such as modernization and globalization.

Impact of High Cost of Medical Equipment on Private Hospitals in Rural Nigeria.

Scholars have extensively debated the effects of the high costs of medical equipment and supplies on the quality of healthcare provided by private hospitals, particularly in rural areas. According to Eze and Okeke (2016) ^[18], the high cost of essential medical equipment and consumables substantially impedes the ability of rural private hospitals to deliver quality healthcare. These hospitals often face significant financial constraints, making it difficult to procure advanced diagnostic tools, surgical instruments, and other necessary supplies. This scarcity results in limited diagnostic accuracy, delayed treatment, and, ultimately, compromised patient outcomes, as private hospitals in rural areas frequently rely on outdated or improvised equipment to manage costs.

Okafor and Olu (2017) ^[24] argue that the cost of importing medical equipment in Nigeria is further exacerbated by high import duties and taxes. This increases expenses for private healthcare providers and directly impacts patient care costs, discouraging many rural residents from seeking timely treatment. They note that this financial barrier contributes to disparities in healthcare access, as rural hospitals, unlike their urban counterparts, struggle with limited economies of scale and cannot distribute costs across a high patient volume. This situation leads to a lower standard of care in rural hospitals, where practitioners are often forced to refer complex cases to urban centers with better resources, highlighting the divide in healthcare quality between urban and rural settings.

In addition, Bello and Aliyu (2018) ^[15] observe that the high costs of medical equipment discourage investment in the private health sector in rural areas. Prospective investors are often deterred by the long time required to break even due to high initial costs and limited patient populations in rural communities. This lack of investment perpetuates a cycle where rural hospitals struggle to acquire modern equipment, contributing to a reliance on basic tools and limited procedures. As a result, these hospitals often provide only

minimal services, leading to a low patient satisfaction rate and, in some cases, even causing distrust in the healthcare system.

Ogunleye and Okechukwu (2020) ^[21, 22, 27] further emphasize that the high costs of medical supplies significantly impact staff morale and retention. Private hospitals in rural Nigeria typically operate with low profit margins and cannot afford to pay competitive salaries or maintain adequate staffing levels. This affects the quality of care provided, as healthcare professionals are often overworked, and the lack of adequate supplies limits the scope of procedures they can perform safely. Consequently, healthcare professionals may avoid working in rural private hospitals, exacerbating an existing shortage of qualified personnel in these areas.

Effects of Inadequate Infrastructure on Operations of Private Hospitals in Rural Areas

Scholars have maintained that inadequate infrastructure, including unreliable electricity and poor road networks, critically undermines the operations and service delivery of private hospitals in rural areas. According to Ayodele and Eze (2015) ^[12], unreliable electricity supply in rural Nigeria forces private hospitals to rely on expensive, often inefficient alternative power sources, such as generators. These alternatives significantly increase operational costs, which can divert resources away from essential areas such as staffing, medical equipment, and medication procurement. Furthermore, without a stable power supply, sensitive equipment, such as imaging machines and laboratory analyzers, may become unusable, limiting the hospital's ability to conduct timely diagnoses and increasing the risk of patient referrals to urban hospitals, where such services are more accessible.

Bamidele and Adebayo (2017) ^[13] argue that poor road networks are another substantial impediment to rural private hospitals, affecting both patient access and the timely delivery of medical supplies. In many rural areas, poorly maintained roads become impassable during rainy seasons, delaying critical supplies, including medications, blood for transfusions, and oxygen. This delay not only compromises patient care but also contributes to increased mortality rates, especially in emergency cases where rapid response times are essential. Moreover, inadequate road infrastructure discourages qualified healthcare professionals from seeking employment in these areas, further weakening the capacity of rural hospitals to provide high-quality care. As Oyinlola and Fagbenro (2018) ^[29] observe, rural hospitals struggle to attract and retain skilled medical personnel largely due to the infrastructural challenges, which reduce job appeal and overall quality of life.

In addition, Adeyemi and Okeke (2019) ^[7, 8] note that unreliable electricity affects the safe storage of medications and vaccines that require consistent refrigeration, compromising their efficacy and leading to potential wastage of valuable resources. This infrastructural issue also affects surgical procedures and neonatal care, as fluctuating power can disrupt life-saving equipment during critical interventions. As a result, private hospitals in rural areas may only be able to offer limited services, reinforcing disparities in healthcare quality between rural and urban settings. Olawale and Ogunleye (2020) ^[27] emphasize that these infrastructure challenges make it difficult for rural private hospitals to operate sustainably, as high operational costs and limited patient access due to poor roads discourage

investment in rural health facilities. This discouragement perpetuates a cycle where rural private hospitals are underfunded, understaffed, and undersupplied, limiting their ability to provide comprehensive healthcare and eroding public trust in rural health systems. Addressing infrastructure issues is essential, they argue, to improving health outcomes and supporting private healthcare investment in underserved rural areas.

High Patient Costs and Low Affordability and Accessibility to Private Hospitals in Rural Area

Researchers have critically examined how high patient costs and low affordability in private hospitals hinder access to healthcare services in rural Nigeria, impacting health outcomes and perpetuating inequalities. According to Bello and Ibrahim (2020) ^[14], the high cost of healthcare in private rural hospitals is one of the primary barriers to access, as many rural residents cannot afford essential medical services. In a country where a significant proportion of the population lives below the poverty line, high healthcare costs create financial stress for households, often forcing patients to delay or forgo treatment. This reluctance to seek timely medical care can lead to the progression of preventable diseases and higher morbidity rates, exacerbating healthcare challenges in these communities.

Ogunleye and Adamu (2020) ^[22] argue that low affordability not only affects individuals but also has broader social implications, as families often need to prioritize basic needs over healthcare expenditures. This dynamic is especially prevalent in rural areas where income levels are generally lower and health insurance coverage is limited or non-existent. They observe that, due to high out-of-pocket expenses, rural residents are more likely to resort to informal or traditional medicine, which may be less effective or even harmful. This reliance on alternative treatments reflects the lack of accessible, affordable healthcare options, highlighting a significant gap in Nigeria's healthcare infrastructure.

Furthermore, Adeyemi and Chukwu (2020) ^[9] emphasize that high patient costs also impact healthcare providers, as low patient turnout due to unaffordable fees limits revenue for rural private hospitals, which often operate on tight budgets. This financial constraint restricts their ability to invest in quality improvements, staff recruitment, and essential medical equipment, thereby creating a cycle of under-resourced healthcare facilities that struggle to meet the community's needs. Consequently, private hospitals in rural areas frequently face financial challenges that compromise service delivery and contribute to healthcare inequity between urban and rural populations.

According to Olatunde and Adebayo (2020) ^[25], one potential solution to the affordability barrier is government intervention to subsidize healthcare services in rural private hospitals. However, they observe that policy measures targeting affordability and access have been inconsistent and inadequate, leaving many rural residents vulnerable. In addition, they argue that without significant policy reforms, private healthcare services in rural areas will remain inaccessible to low-income populations, perpetuating a cycle of health inequity and poor outcomes for vulnerable groups. Researchers argued that high patient costs and low affordability create substantial barriers to healthcare access in private hospitals in rural Nigeria. This issue not only discourages timely medical care but also has far-reaching effects on healthcare providers, patient outcomes, and

broader social health equity. Addressing these challenges will require targeted policies to enhance affordability and expand access to quality healthcare services in rural areas (Bello & Ibrahim, 2020; Olatunde & Adebayo, 2020) ^[14, 25].

Methodology

The study, employed quantitative survey-based methodology to investigate key challenges faced by private healthcare providers in rural Nigeria. While a descriptive cross-sectional survey design was adopted to capture the existing challenges in private healthcare service delivery in rural areas. This design is appropriate for identifying specific obstacles related to infrastructure, costs, and resource availability among rural private healthcare facilities. The target population consists of

healthcare professionals and administrative staff working in private hospitals located in rural areas across Nigeria. Purposive sampling technique was employed to select hospitals from six geographical zones to account for geographical variations in healthcare challenges. The study sample size is 600 respondents, balancing representation from both medical and administrative staff. Data were collected using self-structured questionnaires. The quantitative data collected was analyzed using descriptive statistical methods of mean and standard deviation to answer the three research questions.

Results

Table 1: Responses on how high cost of medical equipment and supplies influence the quality of healthcare services in private hospitals in rural Nigeria

S/No	Item statement	SA	A	U	D	SD	Mean	St.D
1.	The high cost of medical equipment limits the ability of this hospital to provide quality healthcare services	250	200	50	70	30	4.1	0.9
2.	Due to the high cost of medical supplies, essential treatments are sometimes unavailable for patients in this hospital.	220	210	40	90	40	4.0	1.0
3.	The high cost of medical equipment negatively affects patient satisfaction in this hospital.	200	210	60	80	50	3.8	1.1
4.	Our hospital's response time to emergencies is slower due to insufficient equipment caused by high costs.	230	190	60	80	40	3.9	1.0
5.	Quality medical devices and supplies are often inaccessible due to financial constraints in purchasing them.	240	200	40	80	40	4.0	1.0
6.	High equipment costs prevent the hospital from upgrading its medical technology regularly, impacting healthcare quality.	260	180	30	70	60	4.2	0.9
7.	The high cost of essential medical supplies leads to frequent shortages, which affects patient care.	240	200	50	70	40	4.1	1.0
8.	Patients in this hospital receive fewer diagnostic tests due to limited access to expensive medical equipment.	230	210	30	80	50	3.9	1.1
9.	The quality of care in this hospital could be significantly improved if equipment costs were lower.	240	210	40	70	40	4.0	1.0
10.	High costs of equipment and supplies make it challenging to retain skilled healthcare professionals in this hospital.	230	200	50	80	40	3.9	1.1

Source: field survey, (2024)

Table 1 provides a clear indication of the widespread impact that high costs of medical equipment and supplies have on the quality of healthcare services in private hospitals in rural Nigeria. The table captures respondents' levels of agreement across ten key items, each representing various aspects of healthcare delivery affected by costs. Majority of respondents either "Strongly Agree" or "Agree" across all items, indicating consensus that the high cost of equipment and supplies negatively influences healthcare quality. For instance, item 1, with a mean of 4.1 and St.D of 0.9, suggests a strong perception that high costs limit hospitals' ability to provide quality care. Similarly, item 6 shows a mean of 4.2 (St.D = 0.9), indicating agreement that high costs prevent necessary technological upgrades, directly affecting service quality. Items 2 and 3 indicate that high equipment and supply costs lead to unavailability of essential treatments and negatively impact patient satisfaction, with means of 4.0 and 3.8, respectively. This suggests a considerable impact on patient experience, as the limited availability of supplies directly hinders hospitals' ability to meet patient needs effectively. Item 4 highlights slower emergency response times due to equipment shortages (mean = 3.9, St.D = 1.0), showing a broad acknowledgment that high costs affect critical operational functions. This delay in emergency care could contribute to poor health outcomes and erode trust in healthcare systems in rural areas. Responses to items 7 and 8 further emphasize the direct impact of high costs on operational aspects, particularly regarding shortages of essential supplies (mean = 4.1, St.D = 1.0) and limited diagnostic testing availability (mean = 3.9, St.D = 1.1). The

relatively high means indicate that respondents recognize these shortages as a recurrent challenge, reducing the hospitals' capacity to offer comprehensive care. Item 10's results show that respondents also perceive high costs as a barrier to retaining skilled professionals, with a mean of 3.9 and St.D of 1.1. This is critical, as insufficient staffing can exacerbate service delivery issues, further impacting care quality.

In conclusion findings show that the high cost of medical equipment and supplies is a significant barrier to quality healthcare services in private hospitals in rural Nigeria. High equipment costs lead to limited availability of essential treatments and delays in emergency response, as well as reduced diagnostic options. This has resulted in lower patient satisfaction and challenges in retaining skilled healthcare professionals. This finding is in line with the study of Ojo *et al.*, (2018) ^[23] found that high medical equipment costs in rural areas reduce the frequency and quality of diagnostic tests, making effective treatment difficult. Supporting this findings Adetunji & Okeke (2019) ^[8] studied the effect of high equipment costs on healthcare accessibility and found that financial constraints limit private hospitals from procuring essential supplies, impacting patient outcomes. Eze & Nwachukwu (2020) reported that high costs prevent the regular upgrading of medical technology, which compromises the quality of healthcare in rural regions. However, on the contrary view, Bakare (2019) reported that while equipment costs are high, their influence on healthcare quality is mitigated in hospitals with effective financial management practices, which can allow for strategic

purchasing and use of available resources without compromising service quality.

Table 2: Responses on how poor infrastructure impact on the operations and service delivery of private hospitals in rural areas of Nigeria

S/No	Item statement	SA	A	UD	D	SD	Mean	St.D
1.	Poor road networks make it challenging for patients to reach our hospital on time.	270	200	50	50	30	4.1	0.85
2.	Inadequate electricity supply affects our ability to use medical equipment consistently and reliably.	260	210	40	60	30	4.1	0.88
3.	Lack of clean water supply compromises our hospital's sanitation and hygiene standards.	250	220	50	50	30	4.0	0.87
4.	Poor telecommunications infrastructure limits our ability to communicate effectively with patients and other healthcare providers.	240	230	50	50	30	4.0	0.86
5.	Due to inadequate transport facilities, it is difficult to refer patients to higher-level facilities in emergencies.	230	220	60	60	30	3.9	0.89
6.	Poor internet access prevents the hospital from adopting digital record-keeping and telemedicine services.	240	210	50	60	40	4.0	0.90
7.	The lack of reliable infrastructure discourages skilled healthcare professionals from working in our hospital.	270	200	40	60	30	4.1	0.85
8.	Inadequate waste management facilities increase the risk of infections and environmental hazards within the hospital premises.	260	210	50	50	30	4.0	0.88
9.	Poor infrastructure restricts our ability to expand or upgrade our hospital services to meet patient needs.	280	200	40	50	30	4.2	0.83
10.	The overall lack of infrastructure affects the hospital's reputation and patient trust in the quality of care we provide.	250	220	50	50	30	4.0	0.87

Source: field survey, (2024)

Table 2 reveals a strong consensus among respondents about the negative impact of poor infrastructure on the operations and service delivery of private hospitals in rural Nigeria. This table lists the frequency and intensity of agreement for ten key items, ranging from challenges in patient access to the influence on hospital reputation. Means (Mean) and Standard Deviations (St.D) help to measure central tendencies and the consistency of responses. Item 1 reveals a high mean score of 4.1 (St.D = 0.85), indicating significant agreement that poor road networks impede patients from reaching the hospital promptly. This issue likely contributes to delays in receiving critical care, exacerbating health challenges in rural areas. The second item also shows a high level of agreement (mean = 4.1, St. D = 0.88), illustrating the detrimental effect of unreliable electricity on the consistent use of essential medical equipment. This lack of power supply continuity compromises the hospital's capacity to deliver quality care, particularly in emergencies or for intensive care that requires reliable power sources. Item 3, with a mean of 4.0 and St.D of 0.87, reflects concerns over the absence of a clean water supply, which affects hospital hygiene. Sanitation issues heighten the risk of infection within the facility, which can deter patient trust and degrade the hospital's operational quality. In item 4, respondents reported challenges in maintaining effective communication with patients and other healthcare providers due to poor telecommunications infrastructure (mean = 4.0, St. D = 0.86). This deficiency hampers the hospital's ability to coordinate patient care and respond promptly to medical queries or emergencies. The difficulty of patient referrals to higher-level facilities due to limited transportation infrastructure is highlighted in item 5, with a mean of 3.9 (St.D = 0.89). Such limitations impede timely access to specialized care, placing rural patients at a disadvantage in critical situations. Item 6, which focuses on poor internet access, shows a mean score of 4.0 (St.D = 0.90). The lack of digital infrastructure limits the hospital's ability to adopt innovations like electronic health records and telemedicine, constraining service improvement and integration into modern healthcare systems. Respondents also noted in item 7 (mean = 4.1, St.D = 0.85) that insufficient infrastructure deters skilled professionals from working in these facilities. This shortage of talent further limits service capacity, as healthcare professionals are essential to

delivering specialized and quality care. Inadequate waste management facilities (item 8) create infection risks, with a mean score of 4.0 and St.D of 0.88. This shortfall reflects a severe impact on environmental health within the hospital, as safe waste disposal is crucial for hospital sanitation and patient safety. The highest mean score (4.2, St.D = 0.83) is found in item 9, showing respondents strongly agree that poor infrastructure restricts the hospital's ability to expand or upgrade. This stagnation prevents the hospital from meeting the growing needs of rural communities and advancing its capabilities. Finally, item 10 (mean = 4.0, St. D = 0.87) highlights that infrastructure challenges adversely impact the hospital's reputation, affecting patient trust and possibly discouraging people from seeking care at these facilities. Thus, it could be concluded that that poor infrastructure is a critical issue affecting the functionality and quality of private hospitals in rural areas. Key challenges highlighted include inadequate road networks, unreliable electricity, limited telecommunications, and insufficient waste management, which all pose serious obstacles to effective healthcare delivery. The inability to provide consistent and reliable services due to infrastructure issues limits access to healthcare, hinders timely medical interventions, and discourages skilled healthcare professionals from working in these facilities. This leads to lower levels of patient satisfaction and negatively affects the hospital's reputation in rural communities. This finding agreed with the study of Adebisi & Oyekunle (2019) who founds that inadequate infrastructure, particularly poor road networks and electricity shortages, is a major barrier to rural healthcare access, which aligns with the findings of this study. Also, Adeyemi *et al.*, (2020) ^[9] reported that unreliable power supply and poor internet access are significant impediments to the adoption of telemedicine and digital health records in rural hospitals. Supporting this finding, Okafor & Nwosu (2021) contended that the lack of essential infrastructure discourages healthcare professionals from working in rural areas, which affects the overall quality of healthcare delivery and patient outcomes. Meanwhile, Ibrahim (2018) ^[28] argued that despite infrastructure challenges, some rural hospitals have adopted innovative solutions, such as mobile health units and community partnerships, to mitigate the impact of poor infrastructure on service delivery, allowing them to maintain

relatively effective healthcare operations.

Table 3: How high patient costs and low affordability affect access healthcare services in private hospitals in rural Nigeria

S/No	Item statement	SA	A	UD	D	SD	Mean	St.D
1.	High treatment costs prevent many patients in our community from accessing healthcare services at this hospital.	280	200	50	40	30	4.1	0.84
2.	Due to high costs, patients often delay seeking medical attention, which worsens their health conditions	270	210	40	50	30	4.1	0.85
3.	Patients frequently avoid preventive healthcare services because of the cost, resulting in more serious illnesses later.	260	220	40	50	30	4.0	0.86
4.	Our hospital has seen a decline in patient visits due to the inability of community members to afford treatment fees.	250	230	50	40	30	4.0	0.87
5.	Many patients cannot afford follow-up appointments, which impacts the effectiveness of their treatment.	260	210	50	50	30	4.0	0.86
6.	The high cost of specialized care (e.g., surgery, advanced diagnostics) is a barrier for patients in this hospital.	270	200	60	40	30	4.1	0.85
7.	Patients are often unable to afford prescribed medications, affecting their overall treatment outcomes.	280	210	40	40	30	4.1	0.84
8.	Our hospital's reputation is impacted because community members view it as too expensive to access regularly.	250	220	60	40	30	4.0	0.87
9.	The lack of flexible payment options (e.g., installment plans) in this hospital makes it harder for low-income patients to receive care.	260	210	50	50	30	4.0	0.86
10.	High out-of-pocket costs discourage patients from seeking regular check-ups and preventive care at this hospital.	270	200	50	50	30	4.0	0.85

Source: field survey, (2024)

Table 3 reflects a significant level of agreement among respondents on how high patient costs and low affordability impact access to healthcare services in private hospitals within rural Nigeria. The items in this table explore multiple dimensions of how cost barriers affect both the frequency and quality of healthcare utilization, with mean scores indicating general consensus and standard deviations revealing the relative agreement across responses. Item 1, which has a mean score of 4.1 (St.D = 0.84), highlights that high treatment costs prevent many community members from accessing healthcare at the hospital. This response reflects a widespread issue where financial constraints limit the ability of rural residents to receive medical care, making affordability a major barrier to healthcare access in these areas. High patient costs often lead to delayed healthcare seeking, as seen in item 2 (mean = 4.1, St.D = 0.85). Such delays worsen patients' health conditions, especially for ailments that require prompt intervention. This data suggests that financial limitations not only restrict access but also exacerbate health outcomes by encouraging postponement of care. In item 3, with a mean of 4.0 (St.D = 0.86), respondents note that patients often avoid preventive healthcare due to cost, resulting in more severe health issues over time. This pattern demonstrates a cycle where lack of access to preventive services leads to more complex, and thus more expensive, medical conditions, which further limits accessibility. The fourth item, which has a mean of 4.0 (St.D = 0.87), reflects a trend of decreasing patient visits as the community struggles with affordability. Lower patient turnout due to cost constraints also affects hospital revenue, potentially limiting the facility's capacity to improve or maintain quality services. Item 5 (mean = 4.0, St.D = 0.86) shows that many patients cannot afford follow-up appointments, affecting treatment effectiveness. Follow-up care is essential for monitoring patient recovery and adjusting treatment plans, and the lack of affordability negatively influences patient health outcomes due to incomplete or inconsistent care. The sixth item, also with a mean of 4.1 (St.D = 0.85), indicates that high costs of specialized services,

such as surgery or advanced diagnostics, prevent access. This data reveals that affordability issues extend beyond basic healthcare and significantly hinder access to complex treatments, disproportionately affecting rural patients with critical health needs. With a mean score of 4.1 and St.D of 0.84, item 7 shows consensus that the cost of medications poses challenges for patients. When patients cannot afford prescribed drugs, the effectiveness of their treatment diminishes, leading to poorer health outcomes and potentially requiring additional medical intervention. Item 8 (mean = 4.0, St.D = 0.87) indicates that high costs negatively impact the hospital's reputation, as community members perceive it as inaccessible. When affordability deters patients, the hospital's image suffers, potentially diminishing community trust and long-term patient engagement. Respondents in item 9 (mean = 4.0, St.D = 0.86) indicate that the lack of flexible payment options, such as installment plans, hinders access for low-income patients. This finding suggests that offering alternative payment methods could improve accessibility, allowing patients to manage healthcare expenses better and potentially increasing the hospital's service reach. Finally, item 10 (mean = 4.0, St.D = 0.85) reveals that high out-of-pocket costs discourage regular check-ups and preventive care. Preventive services are essential for early detection and management of health conditions, and limited access to these services due to cost ultimately burdens patients and healthcare providers with more advanced, complicated cases. Findings from this table indicate that high patient costs and low affordability greatly affect access to healthcare in private hospitals in rural Nigeria. A majority of respondents agreed that high costs prevent patients from accessing services, delay care, and result in poorer health outcomes due to postponed or avoided treatment. Essential healthcare services, including preventive care, are often foregone because of high expenses. The study also shows that follow-up appointments and prescribed medications, both vital to patient recovery, are unaffordable for many, compromising treatment effectiveness. Furthermore, the high cost of specialized care limits access to advanced medical procedures, and the lack of

flexible payment options restricts low-income patients' ability to obtain needed services. These financial constraints damage the hospital's reputation among community members, who view it as an option available only to those who can afford higher fees. This finding aligns with the study of Adeyemo & Awosan (2018) who found that high healthcare costs were a critical barrier to accessing healthcare services in rural communities, where a significant portion of the population is low-income. Also, in their research, Uche & Onwuku (2019) identified high out-of-pocket costs as a key factor leading to delayed care, resulting in poorer health outcomes as patients avoided seeking help until conditions worsened. Furthermore, Balogun *et al.*, (2021) emphasized that patients' inability to afford medications and follow-up visits significantly hindered recovery and long-term health outcomes, aligning with the findings on medication and follow-up access challenges in this study. However, Ifeanyi (2020) reported a different view, he argued that community-based health insurance initiatives could offset high healthcare costs and significantly improve healthcare access for low-income patients, providing a pathway for hospitals to sustain affordability without reducing quality.

Conclusions

Private hospitals in rural Nigeria encounter substantial challenges that limit their capacity to provide quality healthcare services. The high cost of medical equipment and supplies restricts the availability of essential treatments and diagnostic options, reducing patient satisfaction and hindering the retention of skilled healthcare professionals. Poor infrastructure, including inadequate road networks, unreliable electricity, limited telecommunications, and insufficient waste management, exacerbates these issues by affecting the hospitals' functionality and deterring skilled staff from rural practice. Also, high patient costs and low affordability create significant access barriers for rural patients, who often forgo or delay necessary treatments due to financial constraints, resulting in poorer health outcomes and a negative perception of these facilities within the community. These issues collectively undermine the effectiveness, reach, and reputation of private healthcare providers in rural areas of Nigeria.

Recommendations

1. To alleviate the financial burden associated with the high cost of essential medical equipment and supplies, the government and healthcare stakeholders should consider establishing subsidies, grants, or low-interest loans. By reducing initial capital costs, private hospitals can offer more comprehensive diagnostic and emergency services, improving patient satisfaction and healthcare outcomes.
2. Given the pivotal role of infrastructure in healthcare delivery, a targeted development initiative should be implemented in rural areas. The government, in collaboration with private investors, should prioritize the construction and maintenance of roads, enhance electricity supply, and improve telecommunications infrastructure. These efforts would enable more reliable and timely healthcare services, as well as improve the attractiveness of rural healthcare employment for skilled professionals.
3. To enhance affordability, private hospitals could offer flexible payment options, such as installment plans, sliding fee scales, or health insurance plans that cater to

low-income patients. Government and NGO-sponsored health insurance schemes could also be introduced to reduce out-of-pocket expenses, enabling more community members to access necessary medical care without significant financial strain.

4. Efforts should be made to improve the reputation of private hospitals among rural communities through transparent pricing, quality service delivery, and community engagement initiatives. By building trust and demonstrating commitment to affordable care, these hospitals can enhance their standing within the community, promoting greater utilization of healthcare services.

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