



SUSTAINABLE HEALTHCARE PRACTICES AT GENERAL HOSPITAL, MAIDUGURI: IMPACT ON PATIENT WELLNESS AND ENVIRONMENTAL RESPONSIBILITY

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ABSTRACT

Sustainable healthcare delivery is increasingly recognized as essential for improving patient well-being while ensuring environmental responsibility within hospital systems. This study assessed patient satisfaction at General Hospital, Maiduguri, focusing on treatment effectiveness, medical staff professionalism, facility cleanliness, and service delivery speed. A mixed-methods approach was adopted, combining structured questionnaires and semi-structured interviews with patients from Hausari, Bulabilin, and Gwange One—areas with high utilization of the hospital's services. The findings reveal a generally low level of patient satisfaction, driven by perceived treatment inefficacy, unprofessional staff attitudes, poor hygiene, and prolonged waiting times. These outcomes indicate a significant mismatch between patient expectations and actual healthcare delivery, with implications for both patient wellness and confidence in the public healthcare system. To address these challenges, the study recommends strengthening treatment protocols, instituting continuous professional and interpersonal skills training for healthcare staff, enforcing strict facility sanitation and maintenance standards, and streamlining service delivery processes to reduce delays. Implementing these measures is critical for enhancing patient trust, promoting sustainable healthcare practices, and improving overall service quality at General Hospital, Maiduguri.

Keywords: Healthcare Sustainability, Patient Satisfaction, Hospital Cleanliness, Service Efficiency, Treatment Effectiveness

INTRODUCTION

The healthcare sector's role in societal well-being cannot be overstated, as it directly impacts on the health and longevity of a nation's citizens. Patient satisfaction serves as a pivotal metric for evaluating the quality and efficacy of healthcare services, offering crucial insights for targeted improvements (Smith et al., 2017). Maiduguri, the capital of Borno State in Nigeria, grapples with unique challenges, including socio-political upheavals that disrupt healthcare infrastructure and exacerbate existing issues (Olu, Kola, & Abimbola, 2016). While General Hospital in Maiduguri serves as a beacon of hope, the literature on patient satisfaction at this hospital is notable for its absence. Nigeria's healthcare system has a history of challenges, from inadequate facilities to a shortage of trained medical personnel (Uzochukwu et al., 2015). Patient satisfaction is influenced by various factors such as doctor-patient rapport, wait times, and facility conditions (Ogaji et al., 2013). The influx of internally displaced persons (IDPs) further strains Maiduguri's healthcare system (Owoaje et al., 2016), and patient satisfaction is intricately shaped by cultural nuances, traditional beliefs, and socio-economic dynamics (Iloh et al., 2013).

Technology's role is also noteworthy, given evolving patient expectations for swift, technologically advanced care (Adenuga et al., 2019). Maiduguri's socio-cultural fabric, with its rich tapestry of traditions and practices, plays a pivotal role in shaping healthcare expectations (Okeke et al., 2018). Evaluating patient satisfaction at General Hospital,

Maiduguri, is crucial for obtaining a holistic understanding of healthcare delivery, guiding transformative reforms aligned with the needs of its beneficiaries.

Patient satisfaction levels at General Hospital, Maiduguri, appear inconsistent, with disparities compared to other healthcare institutions in Nigeria. Preliminary observations suggest

issues ranging from treatment efficacy and medical staff expertise to facility conditions and waiting durations (Afolabi & Erhun, 2003; Ogaji et al., 2013). The significance of patient satisfaction in

the healthcare matrix, influencing adherence to medical directives and preventive healthcare measures, underscores the need for a dedicated study on Maiduguri's General Hospital. Despite previous research emphasizing the importance of understanding patient satisfaction in conflict-ridden areas (Johnson & Clark, 2015; Nwosu & Okafor, 2016), a specific study on this hospital is conspicuously absent. This research aims to assess patient satisfaction with treatments at General Hospital, Maiduguri, and examine the factors influencing patient satisfaction, including medical staff demeanour, facility conditions, and waiting durations. The existing literature lacks a comprehensive investigation into patient satisfaction at General Hospital, Maiduguri, amidst its unique challenges, and this research seeks to bridge this gap by providing insights into the determinants of patient satisfaction within this specific healthcare institution

MATERIALS AND METHODS

Study Area

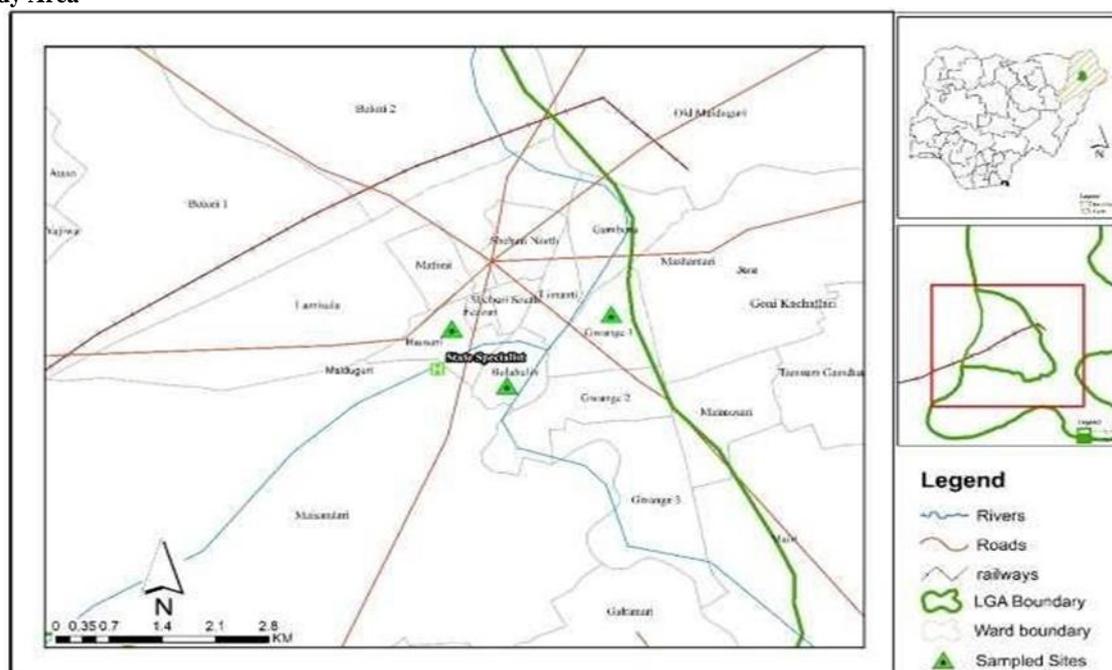


Figure 1: Showing the Hospital and Sample Areas

Source: GIS Lab University of Maiduguri

Maiduguri, colloquially known as Yerwa, serves as the capital and most populous city of Borno State, situated in Nigeria's northeastern region (Van Broeckhoven et al., 2021). Geographically located at a latitude of 11.8469° N and a longitude of 13.1571° E, the city is adjacent to the seasonal Ngadda River, whose waters eventually merge into the Firki swamps, part of the expansive Lake Chad basin to the city's northeast. The historical roots of Maiduguri trace back to the amalgamation of the twin towns of Yerwa and the original Maiduguri. In 1907, Yerwa was established as the new traditional centre for the Kanuri people, while the British identified the market village of Maiduguri to the south as their military base, leading to the establishment of a British residency in 1908. Over time, the combined city, locally termed Yerwa, was bifurcated into the urban district of Yerwa and the rural district of Maiduguri in 1957. However, beyond the borders of Borno, the two entities are collectively recognized as Maiduguri.

Strategically situated in northeastern Nigeria, Maiduguri serves as a pivotal commercial hub. Its geographical coordinates place it alongside the Ngadda River, historically acting as a catalyst for trade and commerce. The city boasts robust connectivity through primary railway lines and an extensive road network, positioning it as a central point for secondary highways serving the state. An airport located approximately 5.5 miles to the west further enhances its connectivity (Mukhtar & Akpan, 2018). In addition, Maiduguri, the capital of Borno State, is situated in the northeastern part of Nigeria, integral to the Sahel region. Its relief features a flat-to-gently rolling landscape, serving as a transitional zone between the arid Sahara Desert in the north and more tropical savannas to the south. Although lacking towering mountains, the terrain is punctuated by occasional low-lying hills and ridges. The drainage system is influenced by its Sahelian position, with seasonal rivers and streams that exhibit variations in flow across seasons (Usman & Shettima, 2015). Moreover, the soil and vegetation, underpinned by

Precambrian rocks and overlaid by younger sedimentary deposits, primarily consist of sandy soils covering approximately 70% of the land surface. Exceptions include areas adjacent to the floodplains of the Ngadda River, which feature weakly developed soils, such as loose sandy soils from the Chad Basin and reddish-brown soils from kaolin deposits (Sambo et al., 2018). Furthermore, the geological composition of Maiduguri comprises crystalline and sedimentary formations, with basement complex rocks providing the foundation beneath the surface. Granites of Precambrian origin are sporadically interspersed throughout the southern parts of Maiduguri, exhibiting metamorphic characteristics such as amphiboles (Usman & Shettima, 2015). In addition to being the capital of Borno State, Maiduguri has witnessed significant population growth. As of 2006, the city had a population of approximately 540,016, projected to reach around 650,000 by 2023. The population density is estimated to be about 60 people per square kilometre, covering an area of 25.20 km^2 . The city is home to diverse ethnic groups, with the Kanuri being predominant, followed by the Shuwa Arabs, Hausa, and Fulani. The Ngadda River facilitates fishing activities, attracting individuals from various parts of Nigeria. Additionally, fertile soils support agricultural endeavors, with residents predominantly engaged in farming crops like millet, maize, and sorghum (Abubakar and Falmata, 2018).

MATERIALS AND METHODS

A descriptive cross-sectional survey design was adopted to assess patient satisfaction at General Hospital, Maiduguri, at a single point in time. This design was considered appropriate because it allows assessment of existing healthcare conditions and patient perceptions without manipulating variables, thereby providing a realistic reflection of patients' experiences within the hospital environment. Both quantitative and qualitative approaches were employed to ensure a comprehensive assessment of patient satisfaction.

Furthermore, quantitative data were collected through structured questionnaires administered to patients, while qualitative data were obtained through semi-structured interviews with selected respondents to provide deeper insights into the reasons behind satisfaction or dissatisfaction. Data were predominantly sourced from patients residing in Hausari, Bulabulin, and Gwange One, areas identified as having a high concentration of users of General Hospital Maiduguri. Primary data offered firsthand information on healthcare experiences, while secondary data were drawn from relevant literature, previous research studies, and hospital records to complement and strengthen the analysis. Moreover, the study was conducted in Maiduguri, the capital of Borno State, with an estimated population of approximately 845,000 as of 2023. The city's diverse demographic composition makes it a suitable setting for examining patient satisfaction within a public healthcare

facility. Consequently, the Maiduguri Metropolitan Council was purposively selected, with Bulabulin, Gwange One, and Hausari selected for their significant reliance on services provided by the General Hospital Maiduguri.

On the other hand, to ensure adequate representation of the study population, the sample size was determined using the Krejcie and Morgan sample size table, resulting in a total of 370 respondents. Questionnaires were distributed proportionately across the selected areas, with 150 administered in Gwange One, 100 in Bulabulin, and 120 in Hausari. Finally, the data collected were analyzed using the Statistical Package for Social Sciences (SPSS). Descriptive statistical techniques, including frequencies, percentages, and charts, were employed to present the findings clearly and enhance interpretation

RESULTS AND DISCUSSION

Demographic Characteristics

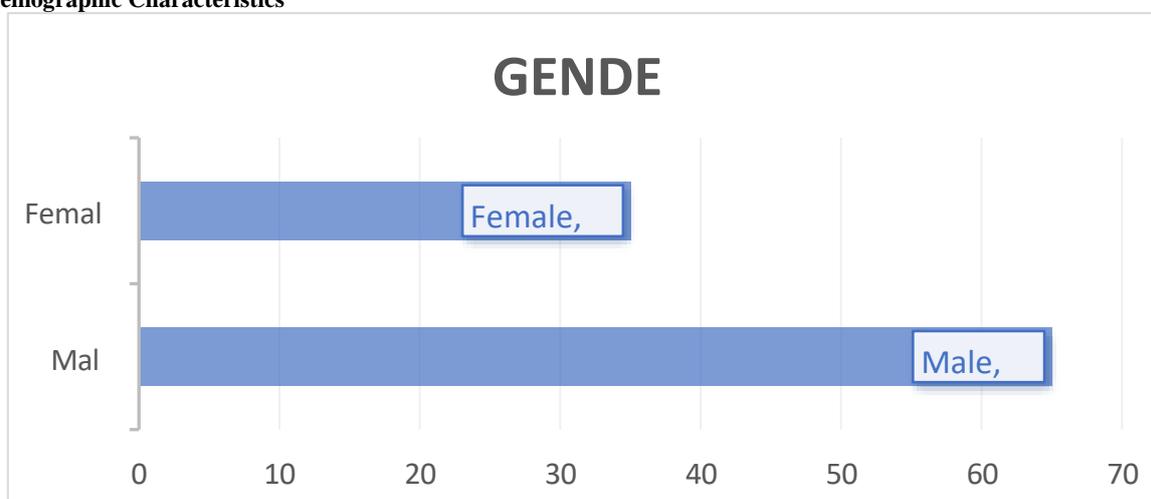


Figure 2: Gender of the Respondent
Source: Fieldwork 2023

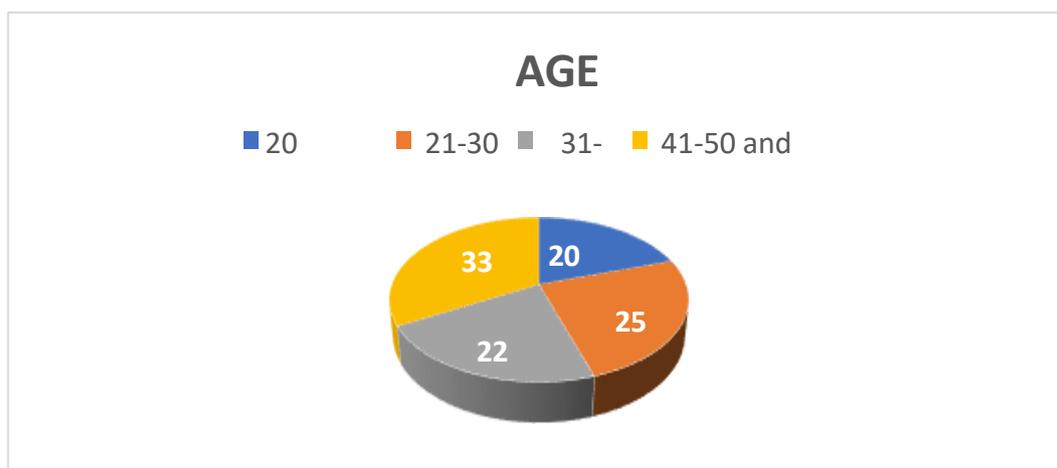


Figure 3: Age of the Respondent
Source: Fieldwork 2023

Figure 2 presents the gender distribution of respondents who participated in the study. The figure shows the proportion of male and female respondents drawn from Gwange One Ward, Hausari, and Bulabulin. This distribution provides an initial understanding of the gender composition of patients accessing healthcare services at General Hospital, Maiduguri, and

serves as a basis for interpreting other demographic characteristics of the respondents. However, Figure 3 illustrates the age distribution of respondents across the surveyed areas. The findings reveal that 20 per cent of respondents were below twenty years of age, 25 per cent were between twenty-one and thirty years, 22 per cent were within

the thirty-one to forty-year age group, while 33 per cent were forty years and above. Notably, a higher proportion of older respondents was recorded compared to younger age groups. This demographic pattern may enhance the study findings, as

older individuals, who are more prone to age-related health challenges, tend to utilize hospital services more frequently. Consequently, this age distribution provides valuable insights into the healthcare services under investigation.



Figure 4: Marital of the Respondent
Source: Fieldwork 2023

Figure 4. illustrates the marital status of respondents, indicating that the majority, constituting 40 percent, are married. This is followed by 31 percent who are single, 24 percent who are divorced, and a mere 5 percent who are widowed. The data suggests a notable representation of

married individuals in the survey, potentially reflecting the demographic composition of the surveyed areas or the increased likelihood that married individuals participate in such studies.

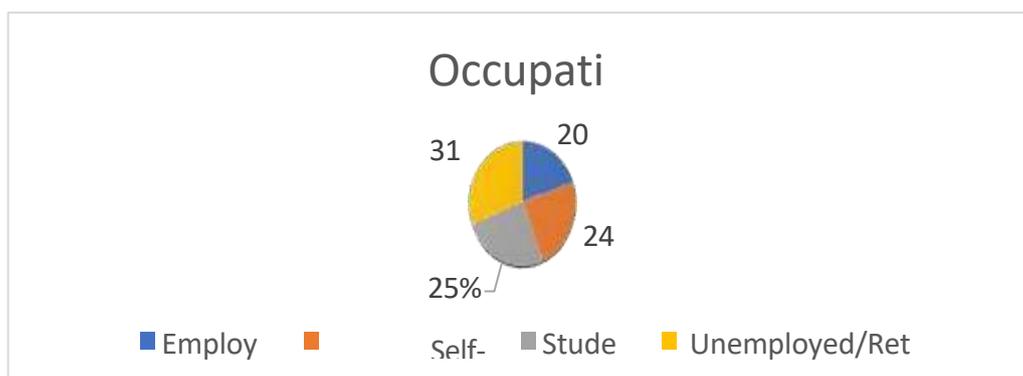


Figure 5: The Occupational Status of the Respondents
Source: - Source: Fieldwork2023

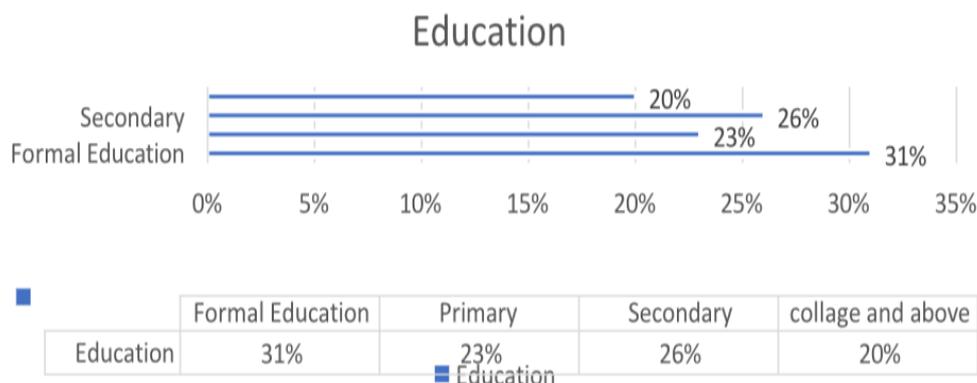


Figure 6: The Educational Background of the Respondents Source
Source: Fieldwork 2023

In Figure 5. The occupational status of respondents is showcased, with 20 percent employed, 25 per cent students, 24 per cent self-employed, and the remaining 31 per cent retired or not working. This distribution indicates that most respondents are not formally employed, potentially influencing their preference for public healthcare facilities due to financial constraints associated with private or teaching hospitals. On the other hand, Figure 6. highlights the

educational background of respondents, revealing the prevalence of formal education. Secondary education emerges as the most common, followed by completion of primary education, while a smaller percentage have attended colleges and tertiary institutions. This suggests a significant representation of educated individuals, although higher education levels are less prevalent among the respondents.

The Effectiveness of Treatments Provided to Patients at General Hospital, Maiduguri

Respondents Opinion on whether treatment Received at the Hospital is effective

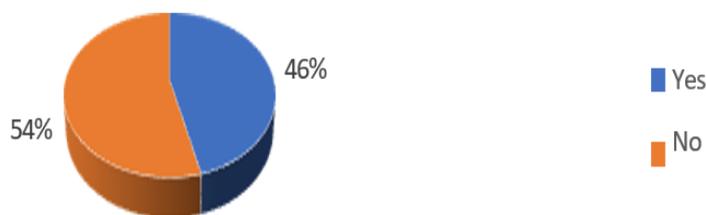


Figure 7: -Respondent Perception On Whether the Treatment at The Hospital Is Effective
Source: -Fieldwork 2023

In Figure 7, 54% of respondents express concerns about the effectiveness of treatments, revealing a significant gap between patient expectations and healthcare outcomes. This discrepancy contrasts with the high treatment success rates observed in Europe's advanced healthcare system. While certain regions in Africa have seen improvements in healthcare, challenges persist, especially in Nigeria's Northeast. Despite socio-political turmoil, successes in specific treatments, like antimalarial therapies, have been noted, attributed to community involvement and the integration of traditional and contemporary medical practices.

The reported treatment ineffectiveness in the surveyed area, when compared globally, underscores disparities within healthcare systems. Factors such as resource limitations, training quality, technological integration, and community involvement could contribute to these disparities. The data emphasise the urgent need for healthcare infrastructure investments, professional training, and research reforms to bridge the gap between healthcare system capabilities and patient experiences. This would ensure equitable access to high-quality, effective medical care for all.

Opinion of Respondents whether they can Recommend Others To the Hospital

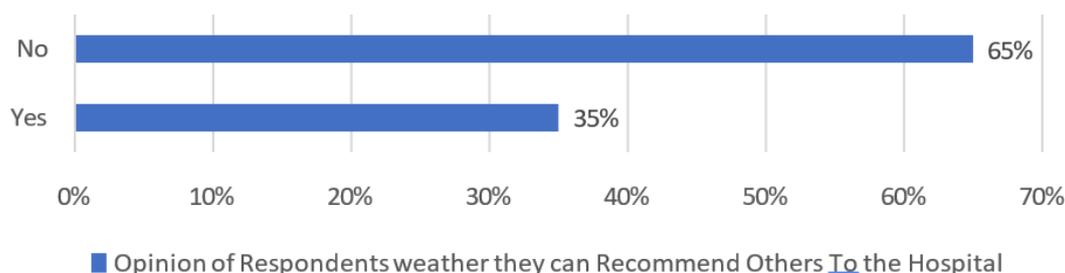


Figure 8: Respondents Say Whether They Can Recommend Others to The Hospital
Source: Fieldwork 2023

In Figure 8, a substantial majority of patients, 65%, express reluctance to recommend the hospital to others. This hesitancy is likely rooted in the perceived ineffectiveness of treatments provided, suggesting potential systemic issues in the hospital's service delivery and treatment efficacy. Existing literature indicates that patient recommendations are closely tied to satisfaction with care, influenced by factors such as treatment effectiveness, service quality, and overall patient experience. Studies, including one by Boulding (2011) in the "Journal of Hospital Medicine," highlight correlations among patient satisfaction, likelihood of recommending a hospital, and perceptions of care quality and staff attentiveness. Moreover, literature suggests that perceived treatment ineffectiveness can erode trust in the healthcare system, as

emphasized in a World Health Organisation (WHO) report on global patient satisfaction. Trust is identified as a crucial element affecting not only patient satisfaction but also treatment regimen adherence and follow-up care. The data from Figure 8 not only indicates dissatisfaction with treatment outcomes but also raises concerns about patient trust and perceived care quality at the hospital. This underscores the necessity for healthcare providers to conduct comprehensive assessments of treatment protocols, patient care strategies, and service quality improvements to enhance patient satisfaction, thereby increasing the likelihood that patients will recommend the hospital to others.

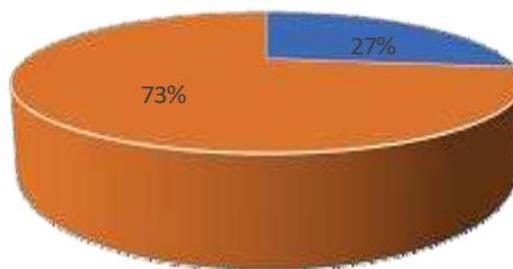
Behavior and Professionalism of the Hospital's Medical Staff

Figure 9 highlights public perception of the conduct of medical staff at General Hospital Maiduguri, with 73% expressing dissatisfaction. This perception is crucial, as it directly influences patient satisfaction and trust in healthcare

services. Compared with global healthcare, the behavior and professionalism of medical staff are of great significance. European healthcare places a strong emphasis on ethical conduct and professionalism, supported by continuous education and clear guidelines (Müller & Kälve mark, 2018; European Medical Association, 2016).

The conduct of medical staff at General Hospital

Maiduguri



■ Yes, they have good conduct ■ No, they don't

Figure 9: Reflects The Public's Perception of the Conduct of Medical Staff at The General Hospital
Source: - Fieldwork 2023

By contrast, the African healthcare landscape shows variation. While technical knowledge is often high, there is a recognised need for improvement in soft skills like communication and empathy, as observed in Kenya (Ouma & Maina, 2017). South Africa has made progress in integrating clinical and ethical training, setting higher standards of professionalism (SciELO, 2012). Despite socio-political challenges in Nigeria's Northeast, medical professionals exhibit resilience and a commitment to professionalism (Chukwuma et al., 2020; ResearchGate, 2019). The findings

from Maiduguri indicate a disparity between expected standards of professional conduct and patients' actual experiences, possibly influenced by regional challenges. These challenges include strain on healthcare infrastructure and the need for more comprehensive training in technical and interpersonal skills. To align with global standards and enhance patient experiences, continuous professional development and a reinforced commitment to ethical medical practices are imperative in the region.

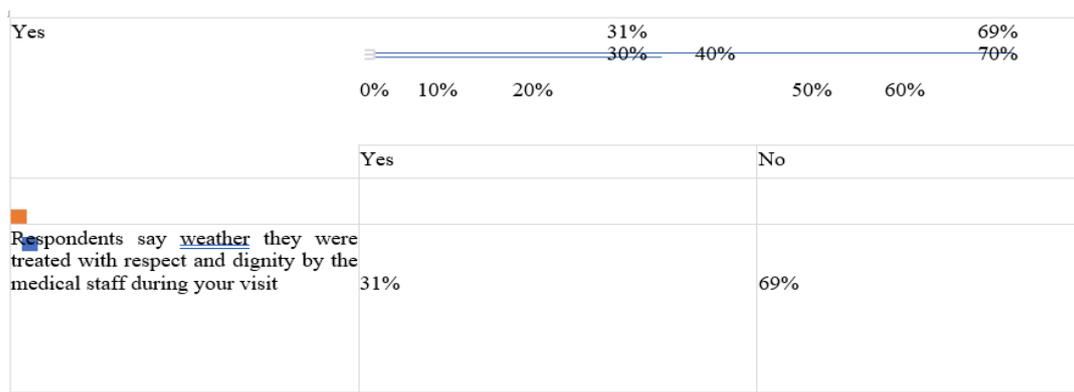


Figure 10: Highlights Patients' Perceptions of Whether They Were Treated with Respect and Dignity by Medical Personnel.
Source: Fieldwork 2023

Figure 10 underscores patients' perceptions of being treated with respect and dignity by medical personnel, with 69% expressing dissatisfaction, indicating a significant issue in the level of respect and dignity provided by healthcare providers. In the global context, the importance of respectful and dignified treatment in healthcare is universally recognised. European healthcare maintains high standards in the behaviour and professionalism of medical staff, emphasising ethical conduct and patient-centred care, which includes

treating patients with respect (Müller & Kälve mark, 2018; European Medical Association, 2016). Similarly, in Africa, the need for holistic medical training that encompasses both technical and interpersonal skills is acknowledged, underscoring the importance of respectful patient care (Ouma & Maina, 2017; SciELO, 2012). In Nigeria, particularly in the Northeast, challenges in the healthcare system due to socio-political unrest may strain medical staff, potentially impacting their ability to consistently provide respectful and dignified

care (Chukwuma et al., 2020; ResearchGate, 2019). However, the expectation remains that professionalism and ethical

conduct, including respect and dignity, should be maintained despite these challenges.

Cleanliness and hygienic of the hospital

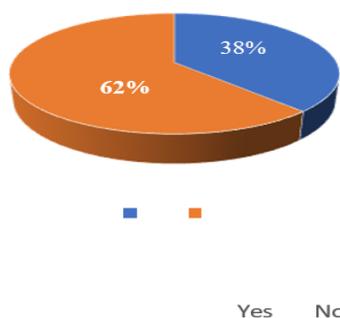


Figure 11: Showcased The People's Perception of the Cleanliness of the Hospital. Source: -Fieldwork 2023

Figure 11 highlights that 62% of respondents perceive the hospital as unclean, indicating significant concerns about hospital cleanliness, which is crucial for patient safety and satisfaction. Studies in Europe, exemplified by Aiken et al. (2012), emphasize the clear link between hospital work environments, including cleanliness, and patient satisfaction. In contrast, African healthcare, facing resource limitations, may struggle to maintain facility cleanliness, impacting patient perceptions. In Nigeria's Northeast, socio-political

challenges exacerbate these issues, potentially contributing to the negative views on hospital cleanliness reported in the survey. To enhance patient experiences and safety, essential measures include investing in healthcare infrastructure and upholding rigorous hygiene standards, aligning with the commitment observed in European healthcare systems and the recognized need for improvements in African contexts, including Nigeria (Aiken et al., 2012; Mpinga, Chastonay, & Kabengele, 2016).

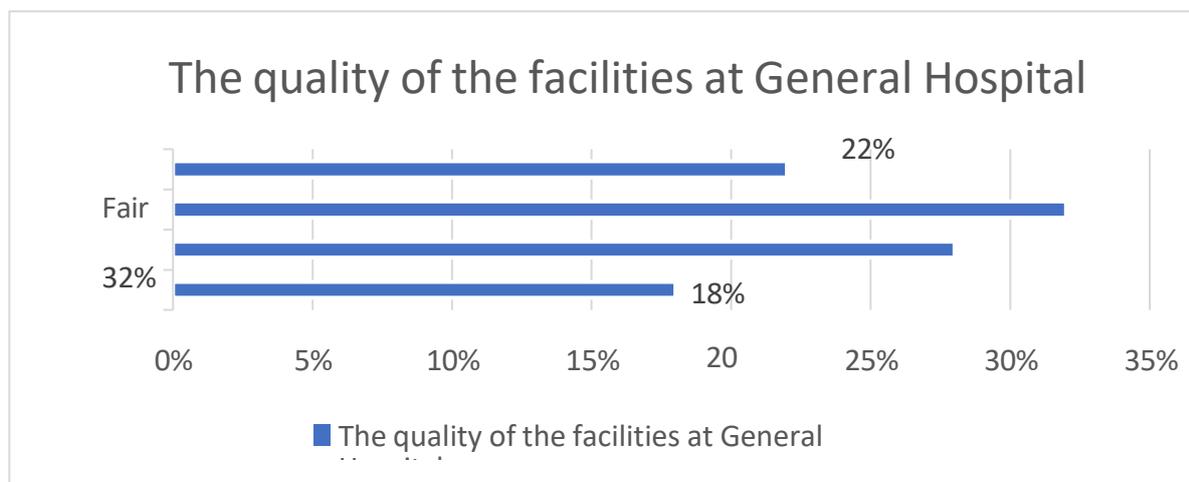


Figure 12: Showcased The People's Perception On the Facilities of the Hospital Source: -Fieldwork 2023

The survey data on public perception of hospital facilities reveal a mixed response, with 32% rating the facilities as fair, 28% as good, 22% as poor, and only 18% as excellent. This suggests a potential lack of necessary amenities for the hospital to be considered a standard healthcare institution. Drawing parallels with the literature, these findings align with broader healthcare quality concerns highlighted in studies like Aiken (2012), emphasizing the importance of adequate facilities in ensuring patient satisfaction and quality care. The study suggests that better-equipped hospitals generally yield

higher patient satisfaction rates. In the context of Africa, particularly Nigeria's Northeast, the survey results may reflect infrastructural and resource challenges faced by healthcare facilities, as discussed by Mpinga, Chastonay, & Kabengele (2016). These challenges contribute to a public perception of substandard facility quality. Addressing these issues necessitates sustained investment in healthcare infrastructure to elevate facility standards and meet patient expectations, drawing insights from European models of healthcare excellence.

Patient Satisfaction Regarding Wait Times and The Speed of Service

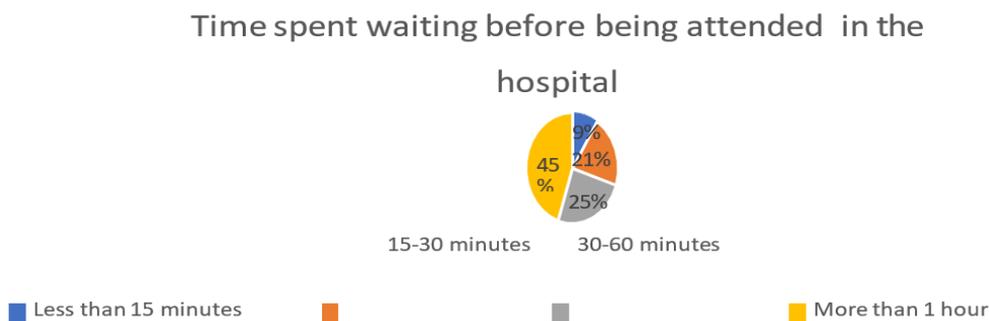


Figure 13: Showcased the Perception of People On the Time Spent Before Giving Attention by Medical Personnel in The Hospital
Source: Fieldwork 2023

The data in Figure 13, illustrates the public's perception of waiting times before receiving medical attention in hospitals. It reveals that 45% of respondents wait over an hour, 25% wait between 30 and 60 minutes, 21% wait 15 to 30 minutes, and only 9% wait less than 15 minutes. This data underscores the significant concern surrounding waiting times in healthcare, a crucial element in patient satisfaction. Research supports this concern, with studies in Europe showing a link between patient satisfaction and waiting times despite high-quality care. Longer wait times, especially in emergency departments, have been associated with reduced patient satisfaction (Bleich, Ozaltin, & Murray, 2009). Similarly, in Africa, patient satisfaction is notably affected by wait times,

as seen in studies from South Africa and Kenya emphasising the importance of efficient service delivery (Mpinga, Chastonay, & Kabengele, 2016; Oyekale, 2018). In Nigeria, similar challenges exist, with studies indicating that wait times are a significant source of patient dissatisfaction. In the North-Western region of Nigeria, patients have reported extended wait times and brief doctor interactions, highlighting the need for enhanced healthcare delivery efficiency (NCBI, 2019). While specific literature on the Northeast region is limited, it is reasonable to assume that similar issues persist, likely exacerbated by socio-political factors impacting healthcare delivery.

Respondent Satisfaction with the speed at which services were rendered to them in the General Hospital



Figure 14 Illustrates Respondents' Satisfaction with The Speed of Services Rendered at The Hospital
Source: -Fieldwork 2023

Figure 14 depicts that 63% of respondents expressed dissatisfaction with the speed of services provided at the hospital. This dissatisfaction aligns with broader concerns in the literature about patient satisfaction with waiting times and service delivery speed in healthcare settings. Research from Europe highlights how extended wait times can negatively impact patient satisfaction, leading to reduced trust and increased anxiety (Bleich, Ozaltin, & Murray, 2009; García, Valdés, & Martínez, 2011). Similarly, healthcare systems in Africa, including South Africa and Kenya, emphasise the importance of efficient service delivery to enhance patient experiences and satisfaction (Mpinga, Chastonay, & Kabengele, 2016; Oyekale, 2018). In Nigeria, studies have shown that prolonged wait times and brief doctor-patient interactions contribute to widespread patient dissatisfaction

(NCBI, 2019; Ogaji & Mezie-Okoye, 2017). Although specific literature on the North East region is limited, it is plausible that challenges such as infrastructure limitations and staff shortages, which affect service speed and patient satisfaction, are also prevalent there.

CONCLUSION

In conclusion, the study reveals a substantial disparity between patient expectations and the healthcare services offered by the General Hospital in Maiduguri. Dissatisfaction among patients extends across various facets of the healthcare delivery system, encompassing treatment effectiveness, staff conduct, facility cleanliness, and service efficiency. These findings underscore systemic issues within the hospital that demand immediate attention. Perceived treatment

ineffectiveness and patients' reluctance to recommend the hospital highlight a crisis of confidence in the hospital's healthcare services. Negative perceptions regarding cleanliness and facilities further exacerbate the problem, emphasising the need for infrastructure improvements and maintenance to enhance patient trust and satisfaction. In light of these findings, recommendations include a comprehensive evaluation of treatment protocols, collaboration with healthcare experts, the establishment of patient feedback mechanisms, and regular training for medical staff to ensure up-to-date knowledge. Improving professionalism and staff conduct through targeted training programs, adherence to ethical standards, and regular evaluations is paramount. Furthermore, addressing concerns about hospital cleanliness and facility quality requires investments in regular cleaning protocols, equipment maintenance, and facility renovations. Finally, optimizing service delivery processes, incorporating efficient triage systems, leveraging technology for patient flow management, and exploring community-based interventions are essential steps to enhance service delivery efficiency and overall patient satisfaction.

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