



**Assessment of the Quality of Health and Rehabilitation Services for Children and
Adolescents with Disabilities in Kano Metropolis**

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Abstract

This study assessed the quality of rehabilitation services for children with disabilities in Kano Metropolis, Nigeria, with emphasis on structural, process, and outcome dimensions. A cross-sectional design was employed involving 120 respondents selected from five rehabilitation centers, including tertiary, public, and community-based facilities. Descriptive statistics and chi-square analysis were used to evaluate service quality and associated factors. Results showed that most respondents were aged 31–40 years (41.7%), with females constituting 66.7%, indicating a gendered caregiving pattern. Structural assessment revealed inadequate availability of equipment (62.5%), poor facility conditions (66.7%), and limited accessibility (70.8%). Process indicators were also suboptimal, with 54.2% reporting delays in service delivery and 56.7% expressing dissatisfaction with care. Outcome measures indicated that 60.0% of respondents observed no significant improvement in children's conditions. Chi-square analysis demonstrated significant associations between service quality and income level ($\chi^2 = 6.45, p = 0.011$), education level ($\chi^2 = 5.32, p = 0.021$), and distance to facility ($\chi^2 = 7.89, p = 0.005$). The findings highlight systemic challenges affecting rehabilitation services and underscore the need for improved infrastructure, workforce development, and equitable service distribution to enhance healthcare outcomes.

Keywords: Quality of Health; Rehabilitation Services; Children and Adolescents with Disabilities

Introduction

Children and adolescents living with disabilities require comprehensive and continuous health and rehabilitation services to improve functional outcomes and quality of life. Globally, disability among children remains a major public health concern, particularly in low- and middle-income countries where health systems face structural and financial constraints. Recent evidence indicates that access to quality rehabilitation services remains uneven, with significant disparities across regions (Kuper *et al.*, 2018; Bright *et al.*, 2018).

In sub-Saharan Africa, the burden of childhood disability is compounded by inadequate healthcare infrastructure, limited trained personnel, and weak policy implementation. Studies have shown that many children with disabilities are unable to access appropriate rehabilitation services, leading to long-term functional limitations and social exclusion (Mannan *et al.*, 2019; Lukersmith *et al.*, 2018). These challenges are particularly evident in Nigeria, where health systems are still developing and often fail to meet the needs of vulnerable populations. Quality of healthcare



services is a multidimensional concept that includes structure, process, and outcome components as described by the Donabedian model. This framework has been widely used to assess healthcare delivery systems and identify gaps in service provision (Topp *et al.*, 2018; Kruk *et al.*, 2018). In the context of rehabilitation services, quality assessment is essential to ensure that services are effective, accessible, and equitable.

In Kano Metropolis, the increasing population and high prevalence of disability among children have placed significant pressure on existing health facilities. Despite the presence of rehabilitation centers, concerns remain regarding the adequacy, accessibility, and effectiveness of these services (Abubakar *et al.*, 2020; Iemmi *et al.*, 2019). Understanding the quality of these services is crucial for improving healthcare delivery and policy implementation.

Furthermore, socio-economic factors such as poverty, illiteracy, and cultural beliefs influence the utilization of rehabilitation services. These factors often limit access and contribute to poor health outcomes among children with disabilities (Banks *et al.*, 2017; Shakespeare *et al.*, 2019).

Given these challenges, this study aims to assess the quality of health and rehabilitation services for children and adolescents with disabilities in Kano Metropolis using a structured analytical approach. And this paper will evaluate the quality of health and rehabilitation services using structural, process, and outcome indicators and identify key factors affecting the effectiveness of rehabilitation services in Kano Metropolis.

Methodology

Study Design

A cross-sectional descriptive study design was adopted to assess the quality of health and rehabilitation services among children and adolescents with disabilities in Kano Metropolis. This design allows for the collection of quantitative data at a single point in time to evaluate service delivery outcomes (Setia, 2017).

Study Area

The study was conducted in selected rehabilitation centers within Kano Metropolis, a major urban center in Nigeria characterized by high population density and diverse healthcare facilities.

Study Population

The study population comprised caregivers of children and adolescents with disabilities receiving services in rehabilitation centers, as well as healthcare providers working in those facilities.

Sample Size and Sampling Technique

A sample size of 120 respondents was used for this study. A multistage sampling technique was employed, where rehabilitation centers were first selected, followed by random selection of caregivers and healthcare workers within the centers (Etikan and Bala, 2017).

Data Collection Instrument



Data were collected using a structured questionnaire designed based on the Donabedian model. The instrument included sections on:

1. Structural quality (facilities, equipment)
2. Process quality (service delivery)
3. Outcome quality (patient satisfaction)

The questionnaire was validated and pre-tested to ensure reliability (Boateng *et al.*, 2018).

Data Analysis

Data were analyzed using SPSS version 25. Descriptive statistics such as frequencies and percentages were used to summarize data. Chi-square tests were applied to determine associations between variables, with significance set at $p < 0.05$ (Field, 2018).

Results

A cross-sectional descriptive study design was adopted to assess the quality of health and rehabilitation services among children and adolescents with disabilities in Kano Metropolis. And the results of the quality of health services among the corresponding respondents are assessed and presented in the tables below.

Table 3.1: Selected Rehabilitation Centers Included in the Study

S/N	Rehabilitation Center	Location	Type of Facility
1	Murtala Mohammed Specialist Hospital Rehab Unit	Kano Municipal	Public
2	Aminu Kano Teaching Hospital Physiotherapy Unit	Tarauni	Tertiary
3	Hasiya Bayero Pediatric Rehabilitation Centre	Nasarawa	Specialized
4	Muhammad Abdullahi Wase Specialist Hospital Rehab Unit	Gwale	Public
5	Kwanar Dawaki Community Rehabilitation Centre	Dawakin Kudu	Community-based

The study included a mix of tertiary, secondary, and community-based rehabilitation centers, providing a broad representation of service delivery levels in Kano Metropolis. The inclusion of both specialized and community-based facilities reflects the diversity of rehabilitation services available in the region. Similar multi-level healthcare structures have been reported in low-resource settings where rehabilitation services are distributed across different tiers of care (Mannan *et al.*, 2019; Lukersmith *et al.*, 2018).

However, the concentration of major facilities within urban areas suggests a potential imbalance in service distribution. This urban bias has been identified as a major barrier to equitable healthcare access, particularly for populations residing in peri-urban and rural areas (Iemmi *et al.*, 2019; Bright *et al.*, 2018).

Table 3.2: Socio-Demographic Characteristics of Respondents (n = 120)

Variable	Frequency (n)	Percentage (%)
Age 18–30	35	29.2
Age 31–40	50	41.7
Age 41–50	25	20.8
Age >50	10	8.3
Male	40	33.3
Female	80	66.7
No formal education	30	25.0
Primary	25	20.8
Secondary	40	33.3
Tertiary	25	20.8
Unemployed	45	37.5
Self-employed	40	33.3
Civil servant	20	16.7
Others	15	12.5

The demographic distribution shows that the majority of respondents were within the economically active age group (31–40 years), which reflects the caregiving burden often borne by middle-aged adults. The higher proportion of female respondents suggests that caregiving responsibilities for children with disabilities are predominantly undertaken by women, a trend consistent with findings in similar settings (Banks *et al.*, 2017; Shakespeare *et al.*, 2019). Educational levels varied among respondents, with a notable proportion having only basic or no formal education. This may influence awareness and utilization of rehabilitation services, as lower educational attainment has been associated with reduced health-seeking behavior and limited understanding of available healthcare options (Kruk *et al.*, 2018; Topp *et al.*, 2018).

Table 3.3: Assessment of Structural Quality of Services (n = 120)

Variable	Adequate n (%)	Inadequate n (%)
Availability of equipment	45 (37.5)	75 (62.5)
Qualified personnel	50 (41.7)	70 (58.3)
Facility condition	40 (33.3)	80 (66.7)
Accessibility of buildings	35 (29.2)	85 (70.8)

The structural assessment reveals significant deficiencies in rehabilitation facilities, particularly in terms of accessibility and infrastructure. The majority of respondents reported inadequate equipment and poor facility conditions, indicating systemic weaknesses in service provision. These findings are consistent with studies that identify infrastructural limitations as a major barrier to effective rehabilitation in low-income settings (Iemmi *et al.*, 2019; Mannan *et al.*, 2019).

Additionally, the lack of qualified personnel highlights the need for workforce development and training. Shortages of skilled rehabilitation professionals have been widely reported and are known to compromise the quality of care provided to patients (Lukersmith *et al.*, 2018; Kruk *et al.*, 2018).

Table 3.4: Process and Outcome Quality of Services

Variable	Good n (%)	Poor n (%)
Timeliness of service	55 (45.8)	65 (54.2)
Patient-provider interaction	60 (50.0)	60 (50.0)
Satisfaction with care	52 (43.3)	68 (56.7)
Improvement in child condition	48 (40.0)	72 (60.0)

The results indicate that process and outcome quality indicators are suboptimal, with more than half of respondents reporting poor service delivery and low satisfaction levels. Delays in service provision and inadequate interaction between healthcare providers and patients contribute to these outcomes. Similar challenges have been documented in studies assessing healthcare quality in developing countries (Shakespeare *et al.*, 2019; Bright *et al.*, 2018). Furthermore, the low level of reported improvement in children’s conditions suggests inefficiencies in rehabilitation interventions. This may be attributed to lack of individualized care plans, poor follow-up systems, and insufficient integration of services across healthcare levels (Topp *et al.*, 2018; Banks *et al.*, 2017).

Table 3.5: Factors Affecting Service Quality (Chi-square Analysis)

Factor	χ^2 Value	p-value
Income level	6.45	0.011
Education level	5.32	0.021
Distance to facility	7.89	0.005

Significant at $p < 0.05$

The statistical analysis shows that socio-economic and geographic factors significantly influence the quality of rehabilitation services. Income level was significantly associated with service quality, indicating that financial constraints limit access to adequate care. This finding supports existing evidence linking poverty to poor healthcare utilization and outcomes (Kruk *et al.*, 2018; Banks *et al.*, 2017).

Distance to healthcare facilities was also a significant factor, highlighting the importance of geographical accessibility in service utilization. Long travel distances and transportation challenges remain critical barriers, particularly in low-resource settings (Iemmi *et al.*, 2019; Mannan *et al.*, 2019).

4.0 Conclusion

The study revealed that the quality of health and rehabilitation services in Kano Metropolis is generally poor, particularly in terms of structural and process indicators. Inadequate infrastructure, insufficient personnel, and poor service delivery mechanisms were identified as major challenges. Furthermore, socio-economic factors such as income, education, and distance to facilities significantly affect the effectiveness and utilization of rehabilitation services. Addressing these factors is essential for improving healthcare outcomes among children and adolescents with disabilities.



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