

Factors associated with the use of curative healthcare services in Bunia Health Zone facilities, Ituri Province, Democratic Republic of the Congo

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ABSTRACT

Introduction

Access to quality curative care remains a challenge in many low-resource settings. The World Health Organization (WHO) identifies healthcare utilization as a key determinant of public health outcomes.

Purpose

This study aimed to identify household and organizational factors associated with the use of curative healthcare services in the Bunia Health Zone, Democratic Republic of Congo (DRC).

Methods

A cross-sectional study was conducted in January–February 2023 using a multi-stage cluster sampling technique. Data from 824 households were collected via structured questionnaires. Logistic regression analyses were performed to identify factors associated with facility choice.

Results

Among households reporting illness in the last 30 days, 68.7% used non-subsidized private facilities. Significant factors influencing this choice included satisfaction with care (OR = 5.50, $p = 0.001$), good reception (OR = 5.41, $p = 0.012$), availability of medicine (OR = 3.26, $p = 0.006$), affordable cost (OR = 4.89, $p = 0.010$), and smaller household size (OR = 3.52, $p = 0.008$).

Conclusion

To enhance the utilization of subsidized services, health system interventions should prioritise improving patient satisfaction, affordability, waiting times, and drug availability.

INTRODUCTION

The World Health Organization (WHO) enshrines the fundamental right of every human being to enjoy the highest attainable standard of health. This right requires timely access to acceptable, affordable, and high-quality care. The right to health encompasses four elements: availability, accessibility, acceptability, and quality of care (World Health Organization [WHO], 2017). The organization and use of healthcare services still present significant challenges, particularly in urban healthcare systems in low- and middle-income countries. Urban health is also emerging as a major social and political issue and a priority for public action in Africa (Salem & Fournet, 2018). Many countries are currently experiencing rapid urbanization, with the urban population in Africa estimated at 42.5%. This accelerated urbanization brings numerous challenges, including the governance of health services and the epidemiological transition, which is marked by an increase in the prevalence of chronic non-communicable diseases alongside traditional communicable diseases (United Nations, Department of Economic and Social Affairs, 2018). The dynamism of neo-traditional healthcare provision is notable in Africa, encouraged by the limitations of modern medicine, dysfunctions within the healthcare system, local interpretations of illness and its causes, and the emergence of religious movements engaged in social life, including healthcare (Salem & Fournet, 2018).

Economic factors continue to play a decisive role in the demand for healthcare. According to the *Analysis of Health Financing in the DRC* report, several sources of funding exist to subsidize healthcare: (i) governments (central and provincial), (ii) donors (bilateral and multilateral cooperation, non-governmental organizations [NGOs], and international foundations, including global initiatives), (iii) households/population, (iv) public and private companies, and (v) NGOs and national foundations (USAID, 2023). However, the mobilization of these funds remains weak.

Since 2001, the Government of the Democratic Republic of the Congo (DRC) has had a National Health Policy (NHP) based on primary health care (PHC), which reaffirms the health zone as the basic operational unit (Ministry of Public Health DRC, 2018). Although a compendium of standards outlines the minimum requirements for the organization

and operation of a health zone, gaps remain in the operating standards for urban health zones (ZS). In urban health zones, healthcare is provided by public and private facilities, with the private sector comprising profit-making and non-profit entities (e.g., NGOs and religious organisations). The public sector is organized around health centres, general referral hospitals (HGR), provincial hospitals, armed forces hospitals, police hospitals, and other departmental facilities for employees. Despite this, the use of healthcare services is generally low in the country. In 2017, curative service utilization was 33.1 new cases per 100 inhabitants (Ministry of Public Health DRC, 2018). The 2024 Demographic and Health Survey indicates that curative service utilization remains at 33% (National Institute of Statistics, School of Public Health of Kinshasa, and Inner-City Fund, 2024).

Healthcare service provision in the DRC faces recurring challenges, including low health coverage, low quality of care, limited resilience of health structures during emergencies, low utilization of available services, and poor public accountability of health services (Ministry of Public Health DRC, 2018).

While studies have documented challenges in health service utilization across the DRC, limited evidence exists on household-level determinants in urban zones such as Bunia. This study aims to analyze factors associated with the use of curative healthcare services in subsidized and non-subsidized facilities in Bunia Health Zone, focusing on household-level health-related factors and organizational factors affecting service utilization.

METHODS

Study Setting

This study was conducted among households in the urban Health Zone of Bunia in Ituri Province, North-East DRC. The Bunia Health Zone serves an estimated population of 374,513 (2021). Since 2015, the city has experienced rapid population growth due to massive immigration from North Kivu Province driven by insecurity. Bunia is subdivided into 20 health catchment areas, four of which are rural, and has 162 healthcare facilities: 16 public, six faith-based, and 135 accredited private facilities. First-level services are mainly offered by private facilities. There are also 32 traditional practitioners, 13 of whom are included in

epidemiological surveillance. The study population consisted of heads of households in three urban sub-regions (Central Office of the Bunia Health Zone, 2022).

Study Design

This cross-sectional study employed quantitative research design and was conducted from January to February 2023.

Study Population

The study population comprised heads of households in all three sub-regions of Bunia town.

Sampling

A multi-stage sampling method was employed. First, the three sub-regions of Bunia (Mbunya, Nyakasanza, and Shari) were selected. In the second stage, cluster sampling was used to select six neighborhoods (two per sub-region). In the third stage, 12 streets were randomly selected (two per neighborhood). In the fourth stage, systematic sampling was used to select households, focusing on the head of household in each. Sample size was calculated using the Lynch formula as described by Kothari (2004). The minimum sample size was 382; however, 840 households were targeted (280 per sub-region). In Shari, only 264 participants consented, resulting in a final sample of 824.

$$n = \frac{NZ^2 \times p(1-p)}{d^2 + Z^2 p(1-p)}$$

Where:

z = 1.96: the 95% confidence coefficient

d = 0.05: Margin of error (5%)

p = 0.5: Population proportion

q = 1-p

n = 382 (Sample minimum size)

Data Collection

Data were collected via structured questionnaires administered face-to-face with household heads. The questionnaire included socio-demographic and economic characteristics, health-related household factors, organizational factors related to service utilization, and categories of health facilities used. A pilot test in an unselected neighborhood confirmed its accuracy. Participants provided informed consent, and questionnaires were completed in person to ensure completeness. In plots with multiple households, the head or a consenting representative was selected. Inclusion criteria were: age ≥ 18 years, household head or

representative present during the study, someone unwell in the past 30 days, within the sampling frame, and consenting to participate.

Variables

The dependent variable was household use of curative care services, defined as visiting any health facility for treatment within 30 days. Independent variables included socio-demographic (gender, age, education, marital status, occupation, household size), economic (occupation), and health characteristics (disease history, knowledge of warning signs, urgency of care, and satisfaction with healthcare).

Data Analysis

Data were entered in EpiDATA 3.1, processed in SPSS v28, and presented in Excel 2016. Logistic regression using odds ratios (OR) identified key factors associated with curative care utilization.

Ethical Considerations

The study was approved by the Medical Ethics Committee of the University of Goma (UNIGOM/CEM/004/2022, 11/11/2022). Households received information sheets and consent forms explaining the study's objectives, methodology, and potential benefits. Participation was voluntary, and confidentiality was ensured through anonymized, coded data stored securely. Risks were minimal, mainly disturbances from home duties, and questionnaires were limited to 45 minutes.

RESULTS

Demographic and Socio-Economic Characteristics of Households

Most heads of households were male (58.1%), with 33.3% aged between 26 and 35 years. A majority had secondary education (56.1%). Most were in a free union (37.1%) or married (36.7%). Nearly half of the heads of households worked in the private sector (46.4%), and 46.2% of households had seven or more members, with an average household size of 6.68.

Table 1:
Demographic and Socio-Economic Characteristics of Households

Variables	Frequency (n=824)	%
Gender of heads of households		
Female	345	41.9
Male	479	58.1

Variables	Frequency (n=824)	%
Age of heads of households		
18-25 years	71	8.6
26-35 years	274	33.2
36-45 years	265	32.2
46 and above	214	26.0
Education level of heads of households		
None	64	7.8
Primary	134	16.3
Secondary	462	56.0
University	164	19.9
Marital status of heads of households		
Single	104	12.6
Divorced	25	3.0
Married	302	36.7
Free union	306	37.1
Widow(er)	87	10.6
Occupation of heads of households		
None	110	13.3
Private sector	382	46.4
Civil servants	148	18.0
Agriculture	49	5.9
Small business	47	5.7
Entrepreneur	45	5.5
Farmer	37	4.5
Student	6	0.7
Household size		
1-3 persons	136	16.5
4-6 persons	307	37.3
7 persons and above	381	46.2
Total	824	100

Health Factors in Households

Malaria was reported by 73.9% of households. Most respondents (84.8%) knew the signs of serious illness, with 22.2% identifying convulsions as a critical symptom. Over half (54.4%) rated the health condition as less serious. Public health centres were used by 29.6% of households, and 88.3% expressed satisfaction with the quality of care received.

Table 2:
Health Factors in Households

Variables	Frequency	%
Diseases cited by heads of household		
Hypertension	69	8.4
Typhoid fever	103	12.5
Acute respiratory infections	43	5.2
Malaria	609	73.9

Variables	Frequency	%
Knowledge of signs of serious illness		
No	125	15.2
Yes	699	84.8
Signs of seriousness of one of the diseases cited		
Convulsions	155	22.2
Diarrhoea with severe dehydration	46	6.6
Fever in a pregnant woman	16	2.3
Haemorrhage in a pregnant woman	21	3.0
Lethargy or unconsciousness	101	14.4
Refusal to suck or drink	89	12.7
Coughing with rapid breathing	73	10.4
Dizziness (vision of flying flies)	74	10.6
Vomiting everything eaten	124	17.7
Level of judgement of state of health		
Serious	375	45.5
Less serious	448	54.4
Don't know	1	0.1
Urgent recourse in the event of illness		
Self-medication	71	8.6
Private medical centre/hospital	188	22.8
Public health centres	244	29.6
Bunia Referral Hospital	73	8.9
Secondary hospital or State hospital	87	10.6
Private health post/dispensary	153	18.6
Traditional healers	8	1.0
Level of satisfaction with care		
Not satisfied	96	11.7
Satisfied	728	88.3
Total	824	100

Organizational Factors

Most patients (76.9%) reported being well received at health facilities. Waiting time was under 15 minutes for 61.7% of respondents. The cost of care was considered affordable by 60.1%, and 80.0% received prescribed medicines. Direct payment was the most common method (84.2%), with 64.6% of households paying themselves.

Table 3:
Organizational Factors

Variables	Frequency	%
Reception at the health facility		
Good	634	76.9
Bad	23	2.8
Very good	164	19.9
Very bad	3	0.4

Variables	Frequency	%
Waiting time		
<15 min	508	61.7
15-30 min	222	26.9
>30 min	94	11.4
Cost at the health facility		
Affordable	495	60.1
Expensive	180	21.8
Less expensive	125	15.2
Very expensive	24	2.9
Availability of prescribed medicines		
No	165	20.0
Yes	659	80.0
Methods of paying for medical care		
Credit	61	7.4
Out of pocket	694	84.2
Employer	40	4.9
Health insurance	11	1.3
Other	18	2.2
Person responsible for medical care payment		
Mutual support association	8	1.0
Donations	4	0.5
Church	16	1.9
Employer	43	5.2
Relatives	161	19.5
Health insurance	13	1.6
Self	532	64.6
Other	47	5.7
Total	824	100

Types of Health Facility Used

Most respondents (68.7%) used non-subsidized healthcare facilities.

Table 4:
Types of Health Facility Used

Health facility qualification	Frequency	%
Non-subsidized	566	68.7
Subsidized	258	31.3
Total	824	100

Factors Associated with Use of Non-Subsidized Health Facilities

After adjusting for other variables, factors significantly associated with the use of non-subsidized facilities included satisfaction with health services (OR=5.50, 95% CI [1.31–7.98], p=0.001), good occupation of the household head (OR=4.80, 95% CI [0.72–7.63], p=0.002), smaller household size (OR=3.52, 95% CI [1.13–5.70], p=0.008), age of the household head (OR=3.29, 95% CI [1.10–8.95], p=0.014),

normal waiting time (OR=3.12, 95% CI [1.20–4.65], p=0.031), and availability of prescribed medicines (OR=3.26, 95% CI [1.56–8.75], p=0.006).

Table 5:
Factors Associated with Use of Non-Subsidized Health Facilities (Logistic Regression)

Variables	p-value	ORa	95% CI
Age of household head	0.014	3.29	1.10–8.95
Occupation of household head	0.002	4.80	0.72–7.63
Smaller household size	0.008	3.52	1.13–5.70
Very good reception	0.012	5.41	1.94–8.58
Knowledge of serious illness	0.023	3.81	1.26–5.63
Seriousness of condition	0.035	4.67	1.10–4.93
Satisfaction with healthcare	0.001	5.50	1.31–7.98
Normal waiting time	0.031	3.12	1.20–4.65
Affordable cost	0.010	4.89	1.95–5.28
Availability of medicines	0.006	3.26	1.56–8.75
Constant	0.009	-	-

DISCUSSION

Household Dynamics

The average household size was 6.68, higher than the DRC national average of 5.3 (National Institute of Statistics, School of Public Health of Kinshasa, and Inner City Fund International, 2024). This may be due to rural exodus from conflict-affected areas of Ituri Province.

Globally, user satisfaction with healthcare services has become a key performance indicator (Batbaatar et al., 2017). Assessing satisfaction appears critical in improving healthcare utilization. Knowledge of disease status influences the decision to seek care, although many diseases did not significantly affect care-seeking. In Bunia, care is often sought only when illness worsens, consistent with findings in Goma, DRC (Kahindo et al., 2021).

Health System Factors

Most households reported care costs as affordable (60.1%). While financial access affects service use, other determinants exist, as urban African healthcare landscapes are varied (Salem & Fournet, 2018). In DRC, the head of household often decides where to seek care (Kahindo et al., 2021). Most payments are direct (84.2%), with 64.6% paying themselves, reflecting limited health insurance coverage and socio-economic instability (Manya et al., 2023). Curative care use in Africa averages 32% (Nanitelamio, 2021). Outpatient curative care is universally available, but

trained providers are limited (National Council for Universal Health Coverage, 2021).

Waiting time, age, and medicine availability influenced use of non-subsidized facilities, with similar findings in Nigeria (Olasehinde & Adedeji, 2022) and DRC (Mabula, 2016). Occupation also affected utilization, with private-sector workers more likely to use services, differing from results in Senegal (Directorate of Planning, Research, and Statistics, 2021).

Financial Access

Lower use of hospitalization and diagnostics among poorer households is linked to financial and geographic barriers. Education increases both utilization and direct payment for services (Directorate of Planning, Research, and Statistics, 2021). Smaller households were more likely to use services, contrasting with other DRC regions (Bakambamba et al., 2025; Tshaona, 2016; Nsungu et al., 2023). Knowledge of disease severity was associated with higher service use (OR=4.89, 95% CI [1.95–5.28], p=0.010).

Policy Implications

Interventions could improve access to curative services in conflict-affected settings by promoting universal health coverage, addressing social determinants, evaluating service quality, reducing waiting times, and ensuring medicine availability.

Study Limitations

The cross-sectional design captures a snapshot in time and may be affected by recall bias. Seasonal variations and specific events were not captured. Nevertheless, the study provides valuable insights for future research.

Public Health Implications

Tailored interventions addressing identified factors can improve the use of subsidized facilities. Regular service evaluations, shorter waiting times, and consistent drug availability may enhance healthcare utilization.

CONCLUSION

Key household and health facility factors influencing curative service use in Bunia included patient satisfaction, facility accessibility, and household characteristics. Improving quality indicators in subsidized facilities—such as reception, drug availability, and cost—could increase utilization. Future studies should explore provider

perspectives and long-term healthcare-seeking trends in conflict-affected urban settings.

Ethical Approval: This study was approved by the Medical Ethics Committee of the University of Goma (UNIGOM/CEM/004/2022, 11/11/2022).

Conflicts of Interest: None declared.

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