



Maternal satisfaction with free delivery services: a cross-sectional study at Lisanga and Saint Gabriel health centers in the Lemba health zone, Kinshasa, Democratic Republic of the Congo

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Abstract

Since the implementation of free maternal healthcare services in the Democratic Republic of the Congo (DRC), concerns have emerged regarding the quality of care provided. This cross-sectional study assessed satisfaction among women who benefited from free childbirth services at Saint Gabriel and Lisanga Health Centers in the Lemba Health Zone, Kinshasa. From June 30 to July 30, 2024, 385 postpartum women who had delivered and stayed for at least 24 h were interviewed using a structured questionnaire adapted from a public health assessment tool. Data were collected through face-to-face interviews and analyzed using SPSS version 20. Descriptive statistics were computed, and composite scores were used to assess satisfaction dimensions. The mean age was 28.7 ± 6.0 years. Most participants were married (88.1%), multiparous (59.0%), or homemakers (58.7%). Overall satisfaction was 99.7%. Satisfaction was 97.4% for medical care and 99.7% for interactions with healthcare providers. However, 15.6% of participants reported out-of-pocket payments despite the free care policy, mainly for medications. Although the services were generally perceived as satisfactory, these payments indicate implementation gaps. Strengthened regulation, continuous supervision, accountability mechanisms, and community awareness are needed to ensure effective enforcement and improve equity, trust, and quality in maternal health services.

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1. Introduction

Maternal mortality remains a major global public health concern, despite the progress achieved over recent decades. It is defined as the death of a woman during pregnancy, childbirth, or within 42 days of its termination. According to the World Health Organization (WHO), hundreds of women die each day from preventable causes related to pregnancy and childbirth, particularly in low- and middle-income countries where access to quality care remains limited [1].

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Reducing maternal mortality is an international priority embedded in the Sustainable Development Goals (SDGs), particularly SDG 3, which aims to reduce the global maternal mortality ratio to fewer than 70 deaths per 100,000 live births by 2030. However, persistent inequalities are observed, with a high concentration of maternal deaths in sub-Saharan Africa and South Asia, where most preventable obstetric complications continue to occur [2, 3].

Interagency estimates indicate that maternal mortality remains significantly higher in low-income countries than in high-income countries, with sub-Saharan Africa and South Asia accounting for most global maternal deaths [3]. In 2023, the maternal mortality ratio was 346 per 100,000 live births in low-income countries, whereas it was 10 per 100,000 in high-income countries. Sub-Saharan Africa and South Asia together accounted for approximately 87% of estimated global maternal deaths (225,000 cases), including approximately 70% in sub-Saharan Africa (182,000) and 17% in South Asia (43,000). Approximately three-quarters of maternal deaths are associated with preventable complications such as hemorrhage, infections, hypertensive disorders of pregnancy, childbirth-related complications, and unsafe abortions.

In the Democratic Republic of the Congo (DRC), the situation remains alarming. According to the 2023–2024 Demographic and Health Survey, the maternal mortality ratio is estimated at 746 deaths per 100,000 live births, which is well above the SDG target [4].

In response to this situation, several countries, including the DRC, have implemented free maternal healthcare policies to reduce financial barriers and improve access to essential obstetric services [5, 6]. This reform aims not only to increase service coverage but also to improve the quality of care and its effective utilization.

However, implementation of this policy raises significant challenges. Studies have shown that, despite the official abolition of user fees, informal payments persist and the perceived quality of care remains variable among patients [7]. Postpartum women's experiences differ across several dimensions, including support from healthcare providers, pain management, the childbirth environment, and the extent to which patients' expectations and needs are respected [8].

Several studies have reported improvements in the quality of care following the introduction of free maternal healthcare; however, women's satisfaction after childbirth remains variable. It depends on multiple factors, including infrastructure quality, staff training, patient–provider communication, pain management, comfort, and sociocultural context [9–13]. In Togo, for example, the quality of reception (94.7%) and respect for dignity and privacy (96.7%) were identified as major determinants of maternal satisfaction [14].

Although some studies have assessed beneficiaries' satisfaction with this free maternal healthcare policy, data remain insufficiently documented in some regional contexts. Within this framework, the present study aimed to evaluate the level of satisfaction among women who benefited from free maternal health services in the Lemba Health Zone (HZ).

2. Materials and methods

2.1. Study setting

The study was conducted in two health facilities within the Lemba HZ, which is located in the city-province of Kinshasa in the DRC. This health zone comprises 14 health areas and includes one general referral hospital (GRH), two institutes of medical techniques, 12 referral health centers (RHCs), and five health centers with triage units (HCTUs). With a surface area of 23.7 km² and an estimated population of 272,425 inhabitants, corresponding to a density of 11,495 inhabitants/km², this health zone is bounded to the north by the Limete and Matete health zones, to the south by the Mont Ngafula I HZ, to the east by the Ngaba HZ, and to the west by the Matete and Kisenso HZ (Figure 1).

2.2. Target population and sampling

This was a cross-sectional study aimed at assessing the satisfaction of women who benefited from free childbirth services at the Saint Gabriel and Lisanga health centers in the Lemba HZ from June 30 to July 30, 2024. These health facilities were purposively selected (convenience sampling) because of their high utilization of maternity services in the context of free healthcare provision. The study population consisted of all women who received free childbirth services in the selected health facilities during the study period.

The sample size was calculated using the formula

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

The parameters used were a satisfaction proportion of 76.8%, derived from a study conducted in Kananga, a confidence level of 95% ($Z = 1.96$), and a precision of 5% ($d = 0.05$). On the basis of these assumptions, the minimum sample size was estimated at 274 participants. Adding 10% to account for nonresponses (i.e., 27 participants), the minimum required sample size was 301 participants. To increase statistical power and improve the precision of the estimates, all eligible women were consecutively recruited during the study period.

To be included in the study, participants had to have delivered at the Saint Gabriel and Lisanga health centers within the context of free maternal healthcare services and to have remained in the maternity ward for at least 24 h following an uncomplicated vaginal delivery to allow for a minimum observation of the postnatal period [15]. Women were excluded if they had a confirmed mental health disorder, presented with associated nonobstetric conditions, or were unable to communicate in one of the study languages (Lingala or French).

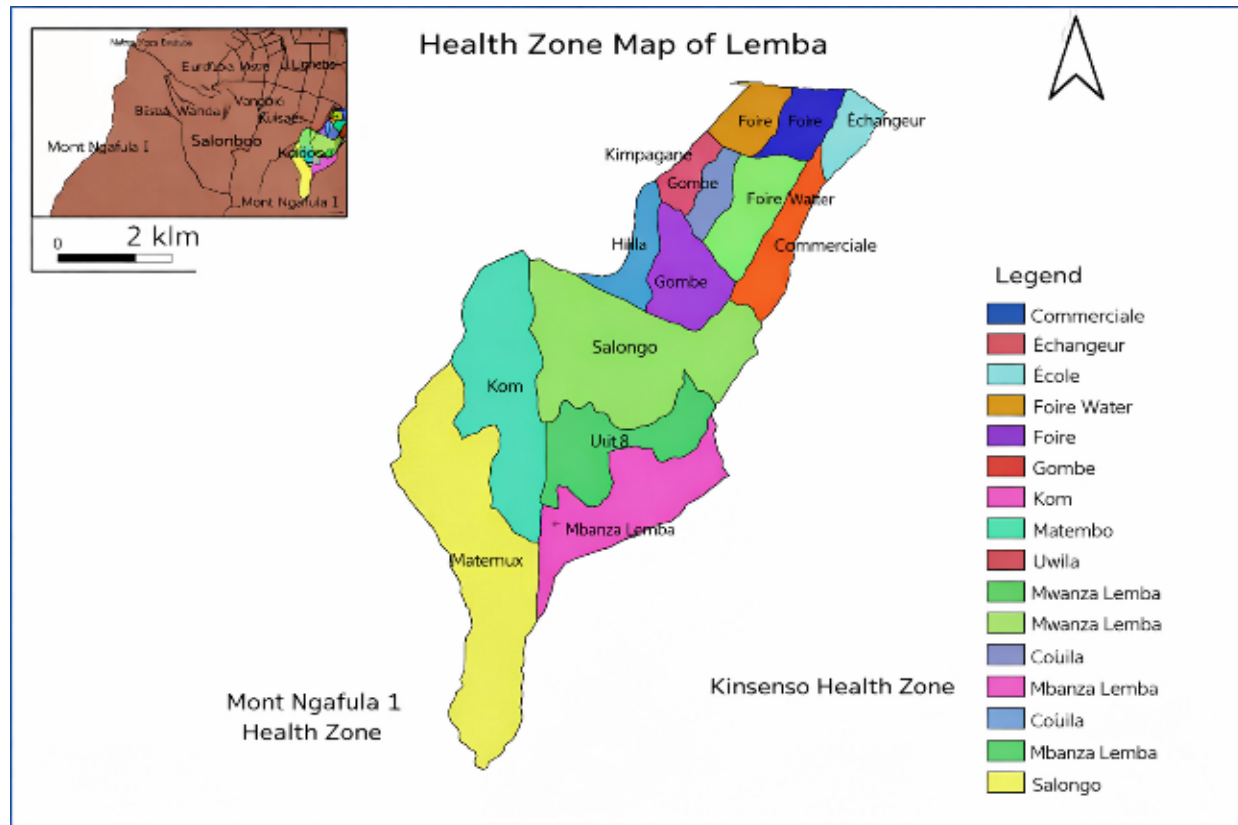


Figure 1: Map of the Lemba health zone.

2.3. Study variables

The study variables were adapted from a prior investigation conducted by the Kinshasa School of Public Health on the evaluation of health service delivery, as well as from other similar studies [16–18]. These variables included participants' sociodemographic characteristics, namely age, marital status, parity, partner's occupation, woman's occupation, level of education, daily expenditures, and monthly income. Additional variables were incorporated to assess satisfaction with free maternal healthcare, including satisfaction with the care received, medication availability, service operating hours, and length of hospital stay.

2.4. Data collection

Data were collected by four independent data collectors who were not affiliated with the study facilities. They received one day of training on data collection procedures. In the field, data collectors first completed administrative formalities, then identified eligible participants and obtained their verbal informed consent. Data were collected through face-to-face interviews with postpartum women and recorded using smartphones equipped with the Kobo Collect application. Each interview was conducted at a location agreed upon with the participant to ensure both confidentiality and comfort. The average interview duration was 15 min. The questionnaire was administered in French, with simultaneous translation into Lingala when necessary to ensure adequate comprehension and reliability of responses. A systematic data quality check was performed before transmission to a secure server.

2.5. Data analysis

To ensure optimal data quality, additional checks were conducted after those performed during data collection. These procedures, carried out during analysis, aimed to identify and correct potential inconsistencies. Data cleaning was performed using Microsoft Excel, whereas statistical analyses were conducted using SPSS version 20. The normality of quantitative variables was assessed using the Kolmogorov–Smirnov test. Normally distributed variables are summarized as means $\pm$ standard deviations, whereas nonnormally distributed variables are presented as medians with interquartile ranges (IQRs). Categorical variables were described using absolute and relative frequencies.

The assessment of specific levels of satisfaction among postpartum women was based on eight overall dimensions. The corresponding items were measured using three- or four-point Likert scales. The satisfaction score was calculated as follows: $(3 \times \text{number of "very good" responses}) + (2 \times \text{number of "good" responses}) + (1 \times \text{number of "average" responses})$. The resulting score was divided by the maximum possible score and multiplied by 100 to obtain a percentage. In accordance with methodological

approaches used in several similar African studies, a threshold of 50% was applied for classification: scores $\geq 50\%$ were considered satisfactory, whereas scores $< 50\%$ were considered unsatisfactory [19]. Overall satisfaction was assessed using a similar approach by assigning a binary score to each dimension (1 = satisfied; 0 = dissatisfied). The evaluation of maternal service costs was based on eight items coded as 0 for “paid” and 1 for “not paid”.

2.6. Ethical considerations

This study was conducted in accordance with the Declaration of Helsinki and was approved by the Ethics Committee of the Kinshasa School of Public Health (reference: ESP/CE/155/2024). In addition, administrative authorization was obtained from the relevant hospital authorities. Verbal informed consent was obtained from all participants before the interviews.

3. Results

3.1. Sociodemographic and economic characteristics of the participants

The results presented in Table 1 show that, among the 385 women included in the study, 36.4% were recruited from the Lisanga Health Center and 63.6% from the Saint Gabriel Health Center. The mean age of the participants was 28.7 ± 6.0 years. The majority were married (88.1%), and 59.0% were multiparous. With respect to occupation, 58.7% of the women were homemakers, whereas 44.9% of their partners were employed in the private sector. The level of education was predominantly secondary (59.7%), followed by tertiary or university education (38.9%). From an economic perspective, average daily expenditure was 7.6 ± 2.8 USD, and average monthly income was 275.6 ± 233.2 USD.

3.2. Interaction of mothers with healthcare providers

As shown in Table 2, 87.0% of participants rated the welcome as very good. Most respondents also rated waiting time positively, with 80.3% reporting a high assessment. Communication with service providers was rated very good by 83.6% of participants, and the attitude of providers toward women who had given birth was rated very good by 80.5%.

3.3. Perception of received medical care

The analysis of received medical care (Table 3) revealed that 84.2% of women were very satisfied with the care provided. Medication availability was confirmed by 86.0% of participants. Service hours were rated very satisfactory by 80.8% of women, whereas 79.5% were very satisfied with the duration of their hospital stay.

3.4. Costs of maternal services

The results related to maternal service costs (Table 4) indicate that 96.9% of participants reported that services or treatment were free. More than 98% benefited from free childbirth services, whether by vaginal delivery or by cesarean section. However, 25.2% of women reported paying for certain medications. Furthermore, 97.7% of participants did not have health insurance.

3.5. Specific and overall satisfaction of women

The results concerning specific and overall satisfaction (Table 5) show that more than 99% of women reported being satisfied with their interactions with healthcare providers and with the overall quality of care. However, 15.6% of participants reported paying for certain maternal health-related services, indicating a partial persistence of costs despite the free healthcare policy.

4. Discussion

The DRC has implemented a policy of free maternal healthcare with the aim of increasing the utilization of health services among pregnant women and, ultimately, reducing maternal mortality. In this context, the present study assessed the level of satisfaction among beneficiaries of these services in two health facilities within the Lemba Health Zone.

The results indicate a very high overall level of satisfaction among women who benefited from free maternal services in the study facilities. A substantial proportion of participants reported being satisfied or very satisfied with the overall care they received. This satisfaction spans several key dimensions of the care experience.

Interactions with healthcare providers were particularly well rated, with an extremely high satisfaction rate (99.7%), reflecting positive perceptions of reception, communication, and staff attitudes. The quality of medical care received was also favorably assessed (97.4%), suggesting that women generally perceived the care provided as adequate. Overall reported satisfaction also reached 99.7%, confirming a highly positive appraisal of the care pathway within the context of free services.

However, despite this high level of satisfaction, an important finding highlights a discrepancy between official policy and actual practice. In total, 15.6% of women reported making out-of-pocket payments during their care, mainly for the purchase of medications

Table 1: Sociodemographic and economic characteristics of the participants (n = 385).

Variables	Options	Frequency	%
Age of woman who gave birth (years)	15–20	18	4.7
	21–26	127	32.9
	27–31	138	35.8
	>31	102	26.6
	Mean $\pm$ standard deviation	28.7 $\pm$ 6.0	
Marital status	Single	46	11.9
	Married	339	88.1
Parity	Multiparous	227	59.0
	Primiparous	158	41.0
Partner's occupation	Merchant	37	9.6
	Private-sector employee	173	44.9
	Public-sector employee	148	38.4
	Self-employed/resourceful	5	1.3
	Small jobs	22	5.7
	Unemployed	37	9.6
Woman's occupation	Shopkeeper	66	17.1
	Private-sector employee	32	8.3
	Public-sector employee	27	7.0
	Homemaker	226	58.7
	Small jobs	32	8.3
	Unemployed	2	0.5
Level of education	Primary	5	1.3
	Secondary	230	59.7
	Higher education/university	150	38.9
Daily expenses (USD)	<4	41	10.7
	4–7	153	39.7
	>7	191	49.6
	Mean $\pm$ standard deviation	7.6 $\pm$ 2.8	
Monthly income (USD)	<35	1	0.3
	35–70	5	1.3
	>70	379	98.4
	Mean $\pm$ standard deviation	275.6 $\pm$ 233.2	

(25.2% of those concerned), as well as for certain complementary services. This situation reveals that direct costs persist despite the declared free maternity care policy, reflecting incomplete implementation of the policy.

This level of satisfaction is broadly consistent with findings reported in other African contexts implementing free maternal health-care policies [20, 21]. However, it appears higher than that reported in Kananga, where approximately 76.8% of women reported satisfaction with free maternal services. This discrepancy may be explained by differences in policy implementation, particularly in terms of service organization and resource availability.

Indeed, a study conducted in Kananga highlighted a substantial workload burden on healthcare staff following the introduction of free care [21]. The increase in service utilization was not always matched by a proportional increase in human and material resources, which may have negatively affected the quality of care and, consequently, patient satisfaction. In a multicenter study, Coetzee *et al.* [22] also found that higher nurse workloads (i.e., a higher patient-to-nurse ratio) were significantly associated with reduced quality of care and lower patient satisfaction, particularly in resource-constrained settings, which may further amplify the impact of staff overload on perceived quality of care.

In the facilities included in the present study, it is possible that implementation of the free healthcare policy was accompanied by more structured organizational mechanisms, contributing to a better perception of care quality. An improvement in service quality has also been reported in another study conducted in Kinshasa within the framework of free maternal healthcare evaluation, which

Table 2: Assessment of the interaction between women during childbirth and healthcare providers.

Variables	Options	Frequency	%
Welcome	Less good	7	1.8
	Good	43	11.2
	Very good	335	87.0
Assessment of waiting time	Low	56	14.5
	Average	19	4.9
	High	309	80.3
Ability to communicate with service providers	Bad	1	0.3
	Less good	7	1.8
	Good	55	14.3
	Very good	322	83.6
Attitude of service providers toward women who had given birth	Bad	1	0.3
	Less good	7	1.8
	Good	67	17.4
	Very good	310	80.5

Table 3: Assessment of medical care received after childbirth.

Variables	Options	Frequency	%
Satisfaction with the care received	Not at all satisfied	4	1.0
	Slightly satisfied	14	3.6
	Satisfied	43	11.2
	Very satisfied	324	84.2
Availability of medicines in the health facility	Not available	10	2.6
	Somewhat available	44	11.4
	Available	331	86.0
Service hours in the health facility	Not at all satisfied	1	0.3
	Slightly satisfied	11	2.9
	Satisfied	62	16.1
	Very satisfied	311	80.8
Length of hospital stay	Not at all satisfied	2	0.5
	Slightly satisfied	16	4.2
	Satisfied	61	15.8
	Very satisfied	306	79.5

may partly explain the high satisfaction levels observed.

It is nevertheless essential to contextualize the interpretation of these findings. As highlighted by Boudreaux *et al.* [23], patient satisfaction surveys conducted in resource-limited settings may underestimate true dissatisfaction due to low initial expectations, reluctance to criticize healthcare providers, or the absence of clearly perceived negative experiences. Thus, high satisfaction levels do not necessarily reflect optimal quality of care but are often influenced by sociocultural context, educational level, and patients' informational capital.

Overall, these findings suggest that the free healthcare policy contributes effectively to improving the perception of maternal care and strengthening service acceptability, which represents a key lever for increasing utilization and contributing to reductions in maternal mortality. However, the persistence of out-of-pocket payments, already reported in other studies conducted in the same region, calls into question the actual effectiveness of the free care policy and exposes women to unforeseen costs that may exacerbate inequities in access to care.

These informal payments can be explained primarily by dysfunctions in the drug supply system, insufficient funding of health facilities, and inadequate control of informal billing practices. They are likely to continue exposing households to additional health-care expenditures that should normally be covered by the state. This situation undermines financial equity and may hinder progress

Table 4: Women's perceptions of the cost of maternal services.

Variables	Options	Frequency	%	Median cost (USD)	IQR (USD)
Cost of service or treatment	High	4	1.0	—	—
	Low	8	2.1	—	—
	Free	373	96.9	—	—
Health insurance or subscription	No	376	97.7	—	—
	Yes	9	2.3	—	—
Hospital stay	Did not pay	374	97.1	31.6	66.1
	Paid	11	2.9		
Cesarean section	Did not pay	381	98.8	780.0	363.1
	Paid	4	1.0		
Eutocic delivery	Did not pay	379	98.4	17.5	5.5
	Paid	6	1.6		
Other medical procedures	Did not pay	368	95.6	15.8	7.0
	Paid	17	4.4		
Medications	Did not pay	288	74.8	13.9	5.3
	Paid	97	25.2		

Table 5: Specific and overall satisfaction levels of women who had given birth.

Dimensions assessed	Satisfied (n, %)	Dissatisfied (n, %)
Interactions with service providers	384 (99.7%)	1 (0.3%)
Medical care received	375 (97.4%)	10 (2.6%)
Overall satisfaction	384 (99.7%)	1 (0.3%)
Payment for maternal services	No (n, %)	Yes (n, %)
Cost of care	325 (84.4%)	60 (15.6%)

toward universal health coverage by maintaining indirect financial barriers for the most vulnerable populations [24]. It also reduces the potential impact of the free care policy on financial protection and maternal mortality reduction.

Universal health coverage aims to eliminate financial barriers to healthcare; however, the findings of this study indicate that the current free care policy does not guarantee complete financial protection. These results therefore highlight the need to establish regular monitoring and evaluation mechanisms to ensure the effective implementation of free healthcare policies in health facilities. Strengthening supervision, improving transparency in the management of inputs, and enforcing strict control of informal payments are essential to ensure alignment with the original objectives of the reform and to sustainably improve equity and quality in maternal healthcare delivery.

4.1. Strengths and limitations of the study

This study has several limitations that may have influenced the findings. The most important limitation is related to the sampling strategy. The study was conducted in two purposively selected health facilities, which limits the representativeness of the results and their generalizability to the broader population of Kinshasa and beyond [25]. This introduces selection bias, as the included facilities and participants may not reflect the full spectrum of care experiences, particularly those associated with more complex clinical situations or different organizational contexts.

Another major limitation concerns the measurement of satisfaction. The instrument used to assess satisfaction was not formally validated using established psychometric procedures, which raises concerns regarding its construct validity, reliability, and comparability with other studies. In the absence of validation, the tool may not adequately capture the multidimensional nature of patient satisfaction and may instead reflect related constructs such as gratitude, compliance, or social conformity.

The very high levels of reported satisfaction should also be interpreted with caution due to the likelihood of information bias, particularly social desirability bias and interviewer bias. Given the healthcare context and the presence of data collectors, participants

may have been reluctant to express negative opinions. In addition, power imbalances between patients and healthcare providers may have further constrained honest responses. In maternal care settings, particularly during delivery and the immediate postpartum period, women may experience vulnerability, dependence, and apprehension toward healthcare staff. These contextual factors may lead to systematic overreporting of satisfaction and underreporting of dissatisfaction, thereby increasing the observed levels of satisfaction and potentially biasing the estimates.

An additional limitation relates to the heterogeneity of healthcare providers during the study period. The perceived quality of care may vary depending on the characteristics, experience, and workload of the staff on duty. This variability may introduce observational bias, particularly if participants are disproportionately exposed to certain types of providers. Although this limitation was partially mitigated by the temporal spread of data collection, the involvement of multiple data collectors, and the diversification of observation periods, some degree of residual bias may persist.

Despite these limitations, the study has several strengths. It provides empirical evidence of women's satisfaction with free maternal healthcare services in Kinshasa in a context where locally generated data remain limited. The study also integrates both service-related and economic dimensions, including the persistence of informal payments, which allows for a more comprehensive understanding of the care experience and highlights important gaps in policy implementation.

Moreover, by situating the findings within the broader context of similar studies conducted in other African settings, the study contributes to ongoing discussions on the implementation of universal health coverage and free healthcare policies. However, differences in health system organization, resource availability, and sociocultural contexts should be taken into account when these findings are interpreted and compared.

The identified limitations underscore the need for future research based on probabilistic sampling strategies to enhance external validity. In addition, clearly defined theoretical frameworks should guide variable selection and analytical strategies rather than relying solely on exploratory approaches. Finally, the application of appropriate analytical methods, such as multivariable or multilevel modeling, would allow for a more rigorous identification of factors associated with satisfaction while acknowledging that causal inferences remain limited in cross-sectional study designs.

5. Conclusion

This study highlights a very high overall level of satisfaction among women who benefited from free maternal healthcare services in the study facilities in Lemba, both in terms of the quality of care and interactions with healthcare providers. However, the persistence of informal payments reveals a gap between the policy of free care and its actual implementation, which may undermine equitable access to care and household financial protection. These shortcomings may limit the real impact of the free maternal healthcare policy on service utilization and progress toward universal health coverage in the country. Therefore, it is essential to strengthen monitoring, regulation, and continuous evaluation of this policy to improve its effectiveness and the quality of its implementation within health facilities.

Abbreviations

DRC	Democratic Republic of the Congo
GRH	General referral hospital
HCTU	Health center with triage unit
HZ	Health zone
IQR	Interquartile range
RHC	Referral health center
SDG	Sustainable Development Goal
WHO	World Health Organization

Data availability

The data that support the findings of this study are available from the corresponding author upon reasonable request.

Declaration of competing interest

The authors declare that they have no competing interests.

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