

Original Research Article

Factors promoting Non-accessibility to Primary Health Care in Rural Areas in DR Congo : Case of the Yelenge Health Area

ABSTRACT

INTRODUCTION: The study focused on the Factors promoting Non-accessibility to Primary Health Care in Rural Areas. The purpose of the study was to determine the factors favoring non-accessibility to primary health care in the Yelenge health area and to propose strategies to improve access to primary health care in this health area in particular and in the Yakusu health zone in general.

METHODS: A descriptive cross-sectional study conducted in the Yelenge health area during the period June 1 to December 31, 2022, which involved 500 inhabitants of the Yelenge health area in the Yakusu Health Zone.

RESULTS: It was found that 280(56.0%) of the study subjects indicated low socio-economic level (lack of financial means), the influence of traditional medicine 100(20.0%), the absence of qualified personnel 70(14.0%) and the absence of essential health care materials and medicines 50(10.0%) as the main factors favoring non-accessibility to primary health care.

CONCLUSION: Access to primary health care for the inhabitants of the Yelenge health area is a serious problem that requires the unfailing involvement of the health authorities in order to reduce the mortality and morbidity rate in this part of the country.

KEYWORDS: Favours factors, Non-accessibility, Primary health care, Rural Area

1. INTRODUCTION

Optimal health is a fundamental right of every human being. The health of the population is also one of the driving forces behind the development of a nation. This optimal health is in principle supported by the use of the health infrastructure of the health system of each country.

The right to access health care is a fundamental human right. At the international level, Universal Health Coverage (defined by the World Health Organization) is put forward to orient public policies in favor of access to health care for all. However, the conditions for its achievement are not defined.

As a state of complete physical, mental and social well-being, health is fundamental to man. Yet the global figures for access to health care are alarming. According to Luboya [1], 2.5 billion people worldwide lack access to basic health care.

Health care is an essential good in the sense that it is necessary for each of us to protect us from the vagaries of disease and to maintain our ability to achieve throughout our lives. In modern societies, the recognition of the importance of health care is the starting point for the historical construction of compulsory health insurance (regardless of the approaches chosen) [2].

According to the WHO, at the societal level, the health care system contributes not only "to social well-being" but also "to economic development." [3].

For Bouckaert, et al [4] Access to health care is relatively simple to understand because we all experience it regularly, whether it is positive or not. Problems with access to health care result in underutilization of health care with significant health effects [5, 6]. This problem is more frequent among people in precarious situations, but the whole population is likely to be concerned, especially when health needs are important.

Inequalities in access to healthcare are alarming. According to the World Health Organization (WHO), 100 million people a year fall into poverty because of the cost of their medical expenses. For another 150 million, medical expenses represent almost half of their income. Many countries do not have social protection systems, affordable health insurance or public health services.

Underutilization of health care is defined as the non-utilization or underutilization of health services when an objective clinical need exists (depending on the state of medical knowledge at a given time) [7].

In Burundi, the Ministry of Health has identified the affordability of health care for the population as a major challenge for the health system. According to the survey conducted in 2004 by Médecins Sans Frontières, more than 17% of the population does not go for a simple consultation, mainly for financial reasons (82% of these patients do not consult because of lack of money). In order to pay for the consultation and for treatment, the majority of Burundians are forced to resort to extreme means, such as going into debt or selling their property, pushing them into even greater poverty. In the regions covered by the cost recovery system, 81.5% of patients are forced to go into debt or sell their crops, land, or livestock to pay for health care [8].

In the Democratic Republic of Congo, two-thirds of patients in the Democratic Republic of Congo (DRC) do not use the formal health system for care, either because services are not available or are of poor quality when they do exist, or because they lack the financial means to access them [9].

In North Kivu, a socio-economic and health care accessibility survey conducted in March 2005, found that the average number of people per household was 6.1 and that more than half of the population had agriculture and/or livestock as their main source of income. The population lived below the poverty line with an average daily income per person of \$0.33. Health was the population's top priority, and households often used health centers (42%) and pharmacies (28%) in case of illness. The average number of illnesses per person per year was 2.4, of which 12% of patients did not receive any treatment, of which 37% did not receive it because of lack of money. Households spent 16% of their income on health; the average overall cost was \$4.27 per sickness episode, including all costs [10].

Despite the efforts undertaken by the government to promote the right to health of all Congolese through these strategies, access to quality primary health care remains insufficient in most provinces due to the fact that health coverage and payment are not based on the principles of universal health coverage. This results in under-utilization of health care services. According to a study conducted by the School of Public Health of the University of Kinshasa in 2003, among family members who fell ill, 30% went to a public or religious health center, 40% practiced self-medication, 21% did not receive any treatment and 9% consulted a traditional healer. This corresponds to about 70% of patients who did not access modern health services [11].

In the DRC, as in almost all developing countries, despite the efforts made to implement Primary Health Care over the last 30 years, the accessibility and use of services by the population remain very low for the set of interventions of the Minimum Package in the health areas [7,12].

The health indicators provided by the Demographic and Health Survey (DHS) conducted throughout the country in 2007 with the support of external partners and by the Health and Poverty report reflect that only 40 to 50% of the population have access to health care. Among the problems cited, the availability of money for treatment (69%) is the most frequently mentioned barrier to health care by women [12,14].

Rural populations in many countries around the world face enormous difficulties in accessing primary health care. The socio-economic and political crisis that has been raging for several years in the Democratic Republic of Congo, aggravated by the armed conflicts since 1996, has contributed considerably to the loss of purchasing power of the population and to the disorder observed in almost all sectors of national life. In addition, the minimum percentage of the budget allocated to health, i.e. 10% of the 7 billion dollars, has not allowed for the provision of sufficient resources to health structures to respond in a timely and effective manner to the needs expressed by the population [15].

Two thirds of patients in the Democratic Republic of Congo do not use the formal health system for care, either because services are not available or are of poor

quality when they exist, or because they do not have the financial means to access them [16].

Tshimbadi [17] points out that the rate of utilization of curative services in the Kisanga health zone remains very low, at 23%, despite the support of donors (USAID and Global Funds). Community participation in the management of primary health care is low in the health zone, a situation that negatively influences the use of care by households. Hence, it is important to study the factors that influence service utilization in our study area.

The Tshopo Province in the eastern part of the country, little by little after decades of unrest and insecurity, has particularly destroyed the socio-economic fabric and affected access to health care for the large part of its sufficiently impoverished population, i.e. 72.9% of the population lives on less than 1 dollar per day [18].

The report of the Provincial Health Division of the Tshopo Province indicates that the utilization rate of curative services in the Province is 50%, for the Yakusu Health Zone, the utilization rate of curative services is 42.8%, this shows that the utilization of curative services in the Yakusu Health Zone is low compared to the other health zones of the Province. This prompted us to investigate the factors that handicap the use of curative services in rural health areas, as it remains a good indicator of access to health care.

The overall goal of this study is to improve the level of accessibility to primary health care for the population of the Yelenge health area in particular and the Yakusu health zone in general.

Specifically, the study aims to determine the factors that contribute to non-accessibility to primary health care in the Yelenge health area and to propose strategies to improve access to primary health care in this health area in particular and in the Yakusu health zone in general.

2. METHODOLOGY

2.1 Description of the research field

We chose the Yelenge health area as our field of investigation. The Yelenge health area is one of the health areas that make up the Yakusu health zone, located in the territory of Isangi in the Tshopo Province, west of the city of Kisangani.

Geographically, the Yelenge health area is bordered to the east by the Bamabale health area, to the west by the Yubo health area, to the north by the Bengamisa health area, and to the south by the Congo River.

2.2 Study population

Our study population includes all inhabitants (men and women) of the Yelenge health area in the Yakusu health zone. It is estimated at 6,569 inhabitants according to the health zone map.

2.3 Study sample

We chose to work with a non-probability sample of the occasional type, which involved 500 inhabitants of the Yelenge health area included according to the following criteria: all persons living in the Yelenge health area that we chose to answer our questionnaire such as children over 15 years of age, parents, healthy persons whether married or single whose conditions were normal during the data collection period.

However, we excluded from our sample those who were not able to provide the necessary information for our study, such as children under 15 years of age, the mentally handicapped, people who were ill during the data collection period, and anyone living outside the Yelenge health area.

2.4 Type of Study

This is a descriptive cross-sectional study conducted in the Yelenge health area during the period from June 1 to December 31, 2022.

2.5 Data collection technique

The direct structured interview allowed us to collect information on the accessibility of health care from the inhabitants of the Yelenge health area. To do this, we developed a questionnaire that we submitted to the respondents.

2.6 Data processing technique

The data collected were tabulated and grouped into frequency tables, then analyzed using percentage calculations.

The anonymity and confidentiality of our results were respected. No study participants were identified by name in reports or publications from the information collected for the study. Data collection forms were kept in accordance with good clinical practice.

3. RESULTS

3.1 Identification of study subjects

Table 1 : Distribution of study subjects according to their identification

Identification	Effectives	Pourcentage
Age groups (years)	n = 500	
15 – 25	100	20.0
26 – 36	220	44.0

37 – 47	140	28.0
48 – 58	40	8.0
<u>Gender</u>		
Men	320	64.0
Female	180	36.0
<u>Marital status</u>		
Married	340	68.0
Single	160	32.0
<u>Education level</u>		
Primary	90	18.0
Secondary	310	62.0
High school and university	100	20.0
<u>Occupation</u>		
Farmer	280	56.0
Salesman	100	20.0
State employee	70	14.0
Student	50	10.0
<u>Religion</u>		
Kimbanguist	250	50.0
Pentecostal	150	30.0
Catholic	60	12.0
Protestant	40	8.0

From this table, it is clear that most of the study subjects in the Yelenge health area 220(44.0%) were between 26 and 36 years old and that the majority of them were men 320(64.0%), compared to 180(36.0%) women who were mostly married 340(68.0%) and had most of the secondary education 310(62.0%). In terms of professional occupation, 280(56.0%) were farmers and 100(20.0%) were vendors. Finally, the Kimbanguiste religion is predominant with 250(50.0%) of the subjects before the Pentecostal church 150(60.0%).

3.2 Access to primary health care

Table 2 : Distribution of study subjects according to their access to primary health care

Variables	Effectives	Pourcentage
<u>Attitude in case of sickness</u>		
Use of traditional medicine	305	61.0
Use of self-medication	105	21.0
Use of health services	70	14.0

Attend church	20	4.0
<u>Assessment of the rate of care set at the SC</u>		
Not affordable	360	72.0
Affordable	140	28.0
<u>Appreciation of the reception of the patient at the Health Center</u>		
Poor	380	76.0
Good	120	24.0
<u>Distance to reach the CS</u>		
0 to 5 Km	50	10.0
6 to 10 Km	60	12.0
10 to 15 Km	70	14.0
16 to 20 Km	120	24.0
20 to 25 Km	200	40.0
<u>Means of travel used</u>		
Bicycle	260	52.0
On foot	140	28.0
Motorcycle	70	14.0
Vehicle	30	6.0
<u>Factors contributing to non-accessibility to health care</u>		
Low socio-economic level	280	56.0
Influence of traditional medicine	100	20.0
Lack of qualified personnel	70	14.0
Lack of essential health care materials and medicines	50	10.0
<u>Benefit of using health services</u>		
Maintenance of good physical and mental health	270	54.0
Reduction in morbidity and mortality rates	140	28.0
Disadvantages of not using health services	90	18.0
<u>Disadvantage of not using health services</u>		
High morbidity and mortality	320	64.0
Poor physical and mental health	100	20.0
Complication of diseases	80	16.0

It appears from this table that the majority of the study subjects 305 (61.0%) had resorted to traditional medicine in case of illness; while 105 (21.0%) resorted to self-medication and a small percentage, 70 (14.0%) resorted to health services in the Yelenge health area.

Regarding the assessment of the price of health care at the health center (HC), it was observed that 360 (72.0%) of the subjects in the study considered it unaffordable, compared to 140 (28.0%) who considered it affordable. In addition, the majority of the subjects appreciated the quality of the reception of the patient at the poor health center and 200 (40.0%) would have to travel long distances (20-25 km) to reach the health center, often by bicycle 260 (52.0%) and on foot 140 (28.0%).

In addition, when asked about the factors that contribute to non-accessibility to health care, it should be noted that 280(56.0%) of the study subjects indicated low socio-economic level (lack of financial means), the influence of traditional medicine 100(20.0%), the absence of qualified personnel 70(14.0%) and the absence of health care materials and essential medicines 50(10.0%).

Finally, addressing the point on the advantage of using health services, and the disadvantage of not using health services, 270(54.0%) of study subjects spoke respectively about maintaining good physical and mental health and 320(64.0%) indicated the high rate of morbidity and mortality.

4. DISCUSSION

4.1 Identification of the study subjects

It was shown in this series that most of the study subjects in the Yelenge health area 220(44.0%) were aged 26-36 years and the majority of them were males 320(64.0%), compared to 180(36.0%) females and in 2012 in Goma, Masudi [19] found 48.3% of the subjects whose age ranged from 35 to 42 years. A study carried out in Grand Bassam in Côte d'Ivoire indicates that the majority of heads of households surveyed are male. There were 475 of them, i.e. a proportion of 82.46%. With regard to age groups, we note that households aged between 30-40 and 40-50 years are the most numerous, respectively 32.81% and 32.46% of the households surveyed. Households over 70 years old are the least numerous. They represent 3.12% of the households surveyed [20].

Regarding the gender of the head of the household, 64.4% of households are headed by men and the remaining 35.4% by women [21]. This result is close to that found in the study on the financial accessibility of communities to health care where 64.14% of households are headed by men [14]. According to the final MICS-DRC report, in 72% of cases, households are headed by men [16]. Also in Bukavu in South Kivu, Mushagalusha [22] found that 89% of households are headed by men and 11% by women in the Kadutu ZS. This situation is far superior to that found by Cilundika [21] in his study on the determinants of low household utilization of curative services in the Pweto HZ where the households surveyed were 64.4% male and 35.4% female.

It was observed in this study that 310 (62.0%) of the study subjects were of secondary school level. The level of education of the respondents is an important determinant of the use of curative services. Our results indicate that the higher the level, the more health services are used. These results are similar to those of the UNAIDS report (UNAIDS et al, 2008) and the Tshimbadi study [17] in the Kisanga Health Zone in Lubumbashi, which found that 44.5% and 75.3% of primary and secondary school students did not use health services. The present study found a significant association between marital status and service utilization.

We further noted that most of the subjects were married 340(68.0%) with most of them having secondary education 310(62.0%). Contrary to the study of Ntotolo [23] who noted that the population had a high proportion of single people 46.6% and married people 43.7%. This difference may be due to the fact that our study was conducted in a rural environment while that of Ntotolo in an urban environment.

Based on the professional occupation, 280 (56.0%) were farmers and 100 (20.0%) were salesmen; different from what Mushagalusha [22] had obtained. For him: 53% of subjects were state officials and in 2015, Cilundika et al [21] had observed a large proportion of liberals (i.e. 46.3%). In relation to occupation, Tshimbadi [17] showed that among the subjects who used curative services, the most frequent occupation among parents was liberal (44.34% of cases). Civil servants (13.44%), private sector employees (13.21%) and farmers (12.26%) were also occupations with a frequency of over 12% each.

Finally, the Kimbanguiste religion is predominant with 250 (50.0%) of the subjects, followed by the Pentecostal church with 150 (60.0%). The high rate of farmers in this study is related to the fact that the Yelenge health area is located in a rural area where the main activity is characterized by agriculture and fishing; contrary to the studies conducted in urban areas where several types of professional activity can be found.

4.2 Access to primary health care

The majority of the study subjects 305 (61.0%) used traditional medicine in case of illness; while 105 (21.0%) used self-medication and a small percentage 70 (14.0%) used health services in the Yelenge health area. This result is higher than that found in Bukavu, South Kivu, by Mushagalusha [22] who found that 55.3% of households used self-medication in case of illness. According to Ilboudo et al [24], self-medication is one of the economic constraints and manifestations of sovereignty. It should be noted that the therapeutic choices of the people surveyed tend towards multiplex self-medication (which combines market drugs, this term corresponding to the plethora of pharmacies, those from private depots and those from the pharmacopoeia).

In terms of the therapeutic route, self-medication represents the first therapeutic recourse in order of importance. This phenomenon has been described in several

studies on the demand for care in Africa, notably in Burkina Faso, where the proportion of self-medication is over 50%, and also in Cameroon) Tshimbadi [17].

With regard to the assessment of the price of care set at the health center (HC), it was observed that 360 (72.0%) of the subjects in the study considered it to be unaffordable, as against 140 (28.0%) who considered it to be affordable. In Grand Bassam, Côte d'Ivoire, Gilles-Harold et al [20], found that the average household income was relatively low for accessing health services, i.e. 33.85% of the respondents had a monthly income of more than 200,000 FCFA. However, in Bukavu, Mushagalusha [22] found that 26.04% of heads of households have an income in the range of 50,000-100,000 CFA francs; these heads of households work mostly in the informal sector. We believe that the low socio-economic level plays an important role in the use of self-medication and traditional medicine, in the majority of cases in rural areas. The financial data indicate that the average salary or income per household was 199623± 147317 CDF. Half of the sample consisted of households with a monthly income below 150000 CDF [17].

In addition, the majority of the subjects appreciated the quality of the reception of the patient at the health center as poor and 200 (40.0%) had to travel long distances (20-25 Km) to reach the health center, often by bicycle 260 (52.0%) and on foot 140 (28.0%). The poor quality of patient reception could also be one of the determinants of the low use of health services.

Contrary to the study by Magné [25], 62.1% of the respondents indicated that the reception at the Kongso Bafoussam III CMA was not good. He continued with the testimony of a woman with her child who had come for consultations. Upon arrival, she gave her ticket first to a lady who collects them for the registration of the different patients who are present, and then calls them one by one for the consultation. All the people who were in the waiting room were dazed by the scene.

As we can see, the patients need to be calmed down, pampered, and with this orderly who has not learned her job well, we are witnessing derogatory behaviors that tarnish a profession. Patients need explanations, consolation and above all the professionalism of the doctor even before the medical care.

The good reception is a guarantee of quality in hospitals and health centers, it constitutes half of the cure. The sense of welcome is the respect of ethics in health institutions and the satisfaction of citizens. Good reception can transform the future of patients in hospitals.

Cès & Baeten [6] consider that health care providers and health care organizations can also significantly hinder access to health care, for example by introducing explicit discrimination measures to exclude certain patients with particular profiles (e.g. in arrears with hospital bills or lacking supplementary insurance with a low socio-economic level or with social difficulties or with mental health problems, etc.).

As these characteristics are not mutually exclusive, a particularly precarious public has an increased risk of less access to health care.

When asked about the factors favoring non-accessibility to health care, we noted that 280 (56.0%) of the study subjects indicated low socio-economic level (lack of financial means), the influence of traditional medicine 100 (20.0%), the absence of qualified personnel 70 (14.0%) and the absence of essential health care materials and medicines 50 (10.0%).

According to Cilundika et al [21], the proportion of low utilization of curative services was 40% among secondary level respondents, 57.3% among primary level respondents and 54.9% among those with no education. These results differ from those of Tshimbadi's study [17] in the Kisanga health zone, which found that 44.5% of respondents at least at the secondary level and 75.3% at the primary level did not use health services.

In Côte d'Ivoire, Kouadio [25] points out that distance, poor road conditions, scarcity of transport vehicles, impoverishment of the population and weakness of local economies are generally the factors that hinder access to health care for rural populations in the department of Abengourou.

The lack of financial means characterizes in most cases the majority of rural inhabitants, contrary to those in urban areas. This could have a negative impact on access to primary health care. In addition, the low level of education is characterized by ignorance of health services.

The income generated by economic activities in the Yelenge health area should allow the sick person to pay for transportation to a health facility, the costs of medical care, and possibly the cost of the stay. Unfortunately, there are many poor people in rural areas. Despite their many occupations, they have little purchasing power. In order for a woman to support herself, her husband provides financial support, for example when she is sick, loses a relative, travels or prepares a party. Single women are the most affected by poverty, as most of them are unemployed.

Rural populations need to be helped because of the very important role they play in the Ivorian economy. After analyzing their living and working conditions, proposals will be made to improve the health of people living in rural areas.

CONCLUSION

This study was conducted among the inhabitants of the Yelenge health area in the Yakusu Health Zone with the specific aim of determining the factors that contribute to non-accessibility to primary health care in the Yelenge health area.

After analysis, it was found that 280 (56.0%) of the study subjects pointed to low socio-economic status (lack of financial means), the influence of traditional medicine 100 (20.0%), the absence of qualified personnel 70 (14.0%) and the absence of

essential health care materials and medicines 50 (10.0%) as the main factors favoring non-accessibility to primary health care.

Access to primary health care for the inhabitants of the Yelenge health area is a serious problem that requires the unfailing involvement of the health authorities in order to reduce the mortality and morbidity rate in this part of the country.

In the abstract we cannot mention everything because it is a synthesis. We have mentioned all the essential elements related to the methodology in the abstract.

This situation deserves to be analysed with great importance, as the health of the population must be preserved at all costs in order to limit the increase in morbidity and mortality in this part of the country

In order to improve access to primary health care in this health area in particular and in the Yakusu health zone in general, we propose to improve the social living conditions of the rural population to enable them to access primary health care, to provide the Yelenge health area with qualified and competent health care personnel, to equip the health center with health care materials and to supply sufficient quantities of essential medicines.

Consent

As per international standard or university standard, Participants' written consent has been collected and preserved by the author(s).

References

1. Luboya. Determinants of low household utilization of curative service in Pweto health zone, Katanga Province, Democratic Republic of Congo, 2013.
2. Jaspers, Christiaens, et al (2021). Somatic health care in a psychiatric setting. Health Services Research (HSR). Brussels: Federal Center for Health Care Expertise (KCE). KCE Reports 338 D/2021/10.273/4.
3. WHO. Regional Office for Europe. The Tallinn Charter: Health Systems for Health and Wealth. Copenhagen: WHO, Regional Office for Europe. Geneva, 2008.
4. Bouckaert, Maertens de Noordhout & Van de Voorde. Health System Performance Assessment: how equitable is the Belgian health system? Health Services Research (HSR). Brussels: Federal Center for Health Care Expertise (KCE). KCE Reports 334 D/2020/10.273/30, 2020.
5. Dournon, Jusot, & Fantin. Paying seriously harms health: a study of the impact of financial forgoing of care on health status. Public economics, 2012;28-29(1-2),123-149.

6. Ces, Flusin, Schmitz, Lambert, Pauwen, & Macq. Caregivers of elderly people living at home in Belgium: an essential and complex role. Brussels: King Baudouin Foundation, 2017
7. NDP. Human Development Report The Real Wealth of Nations: Pathways to human development, UNDP, 2010.
8. Ministry Burundi. Strategic Framework for Growth and the Fight against Poverty, 2004.
9. Ministry of Health. Study on the financial accessibility of communities to health care, DEP. Kinshasa, DR Congo: sn. 2004.
10. NOVOIB and IPS/North Kivu. Socio-economic survey and accessibility to care in the Province of North Kivu. carried out by CIF-Santé. 2005.
11. ESP/UNIKIN. Household KAP survey on the health situation in health zones supported by the World Bank through BCECO within the framework of PMURR. Final report. Kinshasa, Democratic Republic of Congo: sn, 2003.
12. MSP/DRC. Health System Strengthening Strategy, 2006.
13. World Bank. State Report on Health and Poverty in the DRC: Analysis and Strategic Framework for the Fight against Poverty, 2005.
14. MSP/ DRC. Second Demographic and Health Survey. Kinshasa, 2014.
15. MSP/DRC. Compendium of standards on the organization and operation of a health zone, Kinshasa, 2006.
16. Ministry of Planning. Final report of the Multiple Indicator Cluster Survey in the Democratic Republic of Congo (MICS-DRC) 2010. Kinshasa, DR Congo. sn, 2011.
17. Tshimbadi. Factors determining the use of curative services and therapeutic itineraries in Lubumbashi (case of the Kisanga Health Zone). Master's thesis in Public Health, University of Lubumbashi, 2016.
18. Kayembe et al. Factors determining the low rate of use of curative activities in rural areas. *Kisangani Medical*. 2018(12);150-156
19. Masudi (2012). Problem of accessibility to primary health care in urban-rural environment. TFE (unpublished), Nursing Sciences, ISTM/Goma.
20. Gilles-Harold et al. Determinants of access to health services in Grand Bassam. *European Scientific Journal* February 2018;14.6 1857 – 7881.
21. Cilundika et al. Determinants of low household utilization of curative service in the health zone of Pweto, Katanga Province, Democratic Republic of Congo in 2013. *Pan African Medical Journal*. 2015;21:173.

22. Mushagalusa. Study of the determinants of the use of health services in the health zone of Kadutu, Province of South Kivu - DR Congo. 2005.
23. Ntoto. Non-utilization of health services in DR Congo: an analysis of the 2013-2014 Demographic and Health Survey." Faculty of Economic, Social, Political and Communication Sciences, Université Catholique de Louvain, 2019. Masquelier, Bruno. <http://hdl.handle.net/2078.1/thesis:21964>, accessed 10/10/2022.
24. Ilboudo et al. Factors influencing refusal to visit the health center in the rural western region of Burkina Faso. *Public Health* 2016/3 (28), 391-397
25. Magne. Study of the factors hindering good attendance at health facilities in rural areas. Case of the CMA of Kongso Bafoussam III. School of state-certified nurses. of Bafoussam, 2012.
26. Kouadio. Accessibility of rural populations to health care in the department of Abengourou (Côte d'Ivoire). *The Cahiers d'Outre-Mer*, 2010;251, 439-459.

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