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Sustainable Access to Health Care in the Department of Ferkessedougou (Ivory Coast)

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Abstract: ***Damage to the environment and natural habitats as well as geographical and socio-economic disparities have significant effects on individual and collective well-being. The objective of this article is to explain what sustainable access to health care means using existing theoretical and conceptual models in order to understand the mechanisms likely to hinder it. The methodological approach is based on surveys carried out in five localities: Ferkessedougou; Koumbala; Lafokpokaha; Nambonkaha; Togoniere. The results of the analyzes through the Whitehead and Dahlgren model reveal that the main determinants of health do not favor the sustainable access of populations to health care at the level of the department of Ferkessedougou.***

Keywords: Health, sustainable development, accessibility to care, Whitehead and Dahlgren model, Ferkessedougou

1. Introduction

According to GRO Harlem Brundtland[1]: "Health is total physical, mental and social well-being, and not simply the absence of disease or infirmity". The United Nations[2] declares that the right to access health care is a fundamental human right. And the 1992 Rio declaration on the environment and sustainable development states that: "human beings are at the center of concerns relating to sustainable development. They have the right to a healthy and productive life in harmony with nature". Thus, within the framework of sustainable development, health is not only an objective, but also sine qua non. The challenges analysis of access to sustainable health care in the department of Ferkessedougou[3] sheds light on geographical, social and ecological inequalities that constitute social equity obstacles, which is a fundamental principle of any idea of sustainability. The adequacy "health and sustainable development" then makes possible to address among other things the delicate question of the supply of care and its socio-economic, spatial and environmental implications. The issue of health care provision at the national, regional or departmental level therefore deserves all the attention in order to be able to adapt an efficient spatial distribution of the supply and make access to health care easy and equitable. This question is all the more important because urban dynamics are a reality and the northern population of Côte d'Ivoire is mostly rural, poor and illiterate. And the resources allocated to the health sector are sometimes insufficient and unevenly distributed. The problem that this study particularly raises is that of the conditions that make it possible to ensure sustainable access to health care in the department of Ferkessedougou. This issue of supply and sustainable access to care is emerging today as relevant topics that challenge public authorities and affect the sensitivity of researchers in the geographical field and especially in public health [1]. The purpose of this survey is to show whether the socio-economic, geographical and environmental conditions of the populations favor the sustainable the populations access to health care in the department of Ferkessedougou will be structured around the following points: introduction (i); materials and methods (ii); results (iii); discussion (iv); conclusion (v).

2. Materials and methods

2.1 Materials

The material used for data collection is essentially composed of a questionnaire, an interview guide, a camera for taking pictures and a notebook for taking notes.

2.1.1 Choice of survey sites

This study is taking place across five health areas in the department of Ferkessedougou. The criteria for choosing health areas are: demographic size, type of health structure, physical environment, geographical distance from the city of Ferkessedougou and economic activities. The selected localities are: Ferkessedougou, Koumbala, Lafokpokaha, Nambonkaha and Togoniere.

2.1.2 Data collection

Technical collections allowed us to gather two types of information. First, previous work composed of statistics from the general population census of the National Institute of Statistics (INS). These statistics give us the size of the population by health area and allow us to determine the sample to be surveyed. Then the questionnaire allowed us to collect the health realities experienced by the populations, the accessibility to health centers as well as the means of circumvention used face difficulties. Finally, the survey of health workers allowed us to obtain activity reports to determine the level of attendance and use of health services and the pathological profile. In addition, pictures were taken to serve as a visual support for this work.

[1]Gro Harlem Brundtland is Director General of the World Health Organization. She was Prime Minister of Norway and Chair of the World Commission on Environment and Development which published the landmark 1997 report, Our Common Future.
[2]Declaration of the United Nations in 1948 relating to the right to access to health.
[3]The department of Ferkessedougou is located in the Tchologo region in the north of Côte d'Ivoire. The department of Ferkessedougou is part of the savannah district.

Sampling method

The sample size is defined according to the formula below:

$n=Z^2 (PQ) N / (e^2 (N-1) +Z^2 (PQ))$

n=Sample size;

N=Size of parent population;

Z=Margin coefficient (determined from the confidence threshold);

e=Margin of error,

P=Proportion of households supposed to have the desired characteristics. This proportion varying between 0.0 and 1 is a probability of occurrence of an event. If no value of this proportion is available, it will then be set at 50% (0.5);

Q=1-P;

For the application of the formula, we can assume that if P = 0.50 then Q = 0.50; at a confidence level of 95%, Z=1.96 and error mage e =0.05

We will identify the sample of households to be interviewed by urban or rural locality and then randomly choose the households. This operation will be done through the following formula:

$n=z^2 (PQ) N/ (e^2 (N-1) +Z^2 (PQ))$. The survey will be done on the basis of a semi-open questionnaire to leave the free choice of answer to the respondents. These questions will focus on: The distances traveled between homes and health centers and by what means do they arrive; the financial resources available to the populations; the therapeutic alternatives envisaged used face to difficulties the constraints of access to health services.

$n= ((1.96)^2(0.5 \times 0.5) \times 63512) / ((0.05)^2 \times (63512-1) + (1.96)^2 \times (0.5 \times 0.5))$

n= 371 households

Determination of the proportion P of households is: P= n / N

P= 370 / 10280

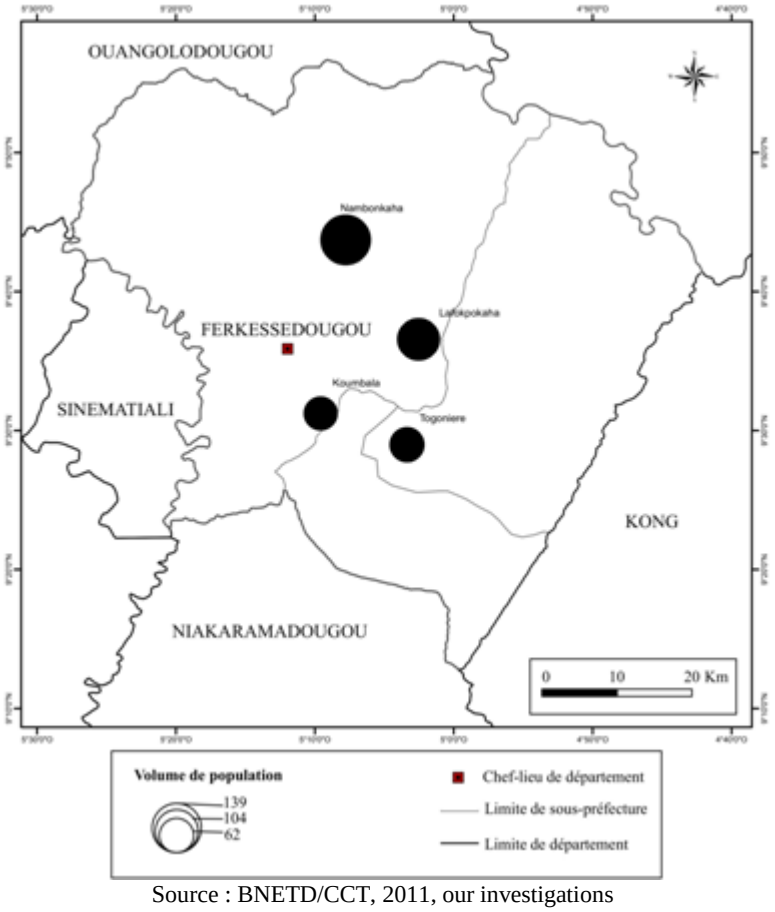
P= 0.03599 i.e. a proportion of 3.6%

A sample of 370 households has been taken from the total rural and urban population to conduct our surveys.

Table 1: Breakdown of the population to be surveyed by locality, Source: GPHC, 2014

Health areas		Number of households	Proportions(%)	Households surveyed	
Municipal sector	Lafokpokaha	2886	3,6	104	305
	Nambonkaha	3862	3,6	139	
	Koumbala	1712	3,6	62	
Non-municipal sector	Togoniere	1820	3,6	65	65
Total		10280	3,6	370	

The new population is distributedin the four localities of Lafokpokaha, Koumbala, Nambonkaha and Togoniere.



Source : BNETD/CCT, 2011, our investigations
KELY C.T. December 2017

Figure 1: Distribution of the population surveyed

2.1.3 Data processing

We used two types of treatment. Statistical processing was done using a computer tool (Microsoft office version 2007) and a calculating machine. We then used Sphinx and XLSTAT 2014 software to analyze the Questionnaire and draw up the various tables and graphs. Finally, the cartographic processing was done using the ArcGIS 10.2 software for the realization of the maps.

2.1.4 Choice of the conceptual model

In this study, we use the Whitehead and Dahlgren model. The approach based on the determinants of health inequalities (or inequities) constitutes the reference in the field of epidemiological sociology. And its relevance has been proven by a large number of empirical data produced over the past three decades.

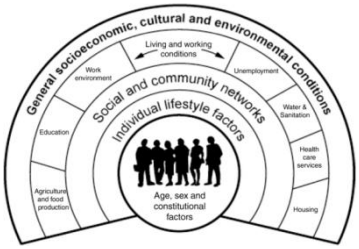


Figure 2 : Whitehead & Dahlgren model (1991)[4]
Source : https://www.researchgate.net/figure/Modele-des-determinants-de-la-sante-de-Whitehead-Dahlgren-1991-Nous-retrouvons_fig3_341407387/download

This model has also been validated by several studies that have focused on the question of the weighting of health determinants. Thus, the interaction between the different determinants of health allows us to converge health and sustainable development on the one hand and to assess the sustainability of the accessibility of populations to care at the level of the department of Ferkessedougou on the other hand.

3. Results

3.1 Economic and financial accessibility

The structures of the Ferkessedougou department health system are: the health district; the branch of the National Institute of Public Hygiene (INHP); the general hospital; urban health centers; rural health centers; the mother and child protection center (PMI); the School and University Health Service (SSSU); secular and denominational private health centers. Despite the availability of these services, populations are financially limited in seeking care.


Figure 3 and 4: The rural health center of Togoniere and the general hospital of Ferkessedougou

Source: Photo: KELY Ceba Timothee, September 2017

15% of individuals with an income of less than 20,000 FCFA, 23% between 20,000 FCFA and 100,000 FCFA and 62% with more than 100,000 FCFA (62%) use the modern health system in Lafokpokaha. In Nambonkaha, it is people with an income of less than 20,000 FCFA (2%), an income between 20,000 and 100,000 FCFA (29%) and more than 100,000 FCFA (69%) who seek health care. In Koumbala, 14% of the population with an income of less than 20,000 FCFA, 45% with an income of between 20,000 and 100,000 FCFA and 41% with an income of more than 100,000 FCFA use health centers. This indicates that those who have much more financial means visit health centers more: income above 100,000 FCFA (58.5%), income between 20,000 and 100,000 FCFA (32.75%) and income below 20,000 FCFA (14.75%).Income is a factor in financial accessibility to health care. Indeed, 37.5% of individuals questioned in Lafokpokaha find the costs of medical care acceptable, 56.4% find them expensive and 0% find them very expensive. 2.9% of individuals surveyed in Nambonkaha find medical care acceptable, while 89.2% find it expensive and 7.9% find it very expensive. In Koumbala, 6.5% of those surveyed think that the costs of medical care are acceptable, 90.3% think they are expensive and 3.2 think they are very expensive. Finally, 15.8% of the individuals surveyed in Togoniere find that the costs of medical care are acceptable, 48.5% find them expensive and 35.7% think they are very expensive. In sum, 20% of the population of the department of Ferkessedougou find the cost of medical care acceptable, 68% find it expensive and 12% finds it very expensive.

3.2 Geographical and environmental accessibility

The analysis of data collected at the district level reveals that malaria (12,848 consultations) is the first factor of morbidity in the department of Ferkessedougou (62%). Then come respiratory infections with 4107 consultations or 20%, diarrhea with 1511 consultations or 8%, anemia with 1268 consultations or 6%. Hypertension (669 consultations), malnutrition (234 consultations) and STI/HIV (208 consultations) are almost non-existent with respectively 3%, 1% and 1%.

During our interviews with the Director of the health district of Ferkessedougou, we were told that geographical accessibility remains the first factor limiting the attendance of health centers, especially in rural areas. The problem of long distances between homes and the first contact health center pushes people to go to village witch doctors or healers and women prefer to give birth at home or with a matron. Some still prefer to practice self-medication with street and traditional drugs.

[4]Whitehead M., Dahlgren G. (1991), *Whatcanbedone about inequalities in health?*, The Lancet. 1991, vol. 338, n. 8774, p. 1059.

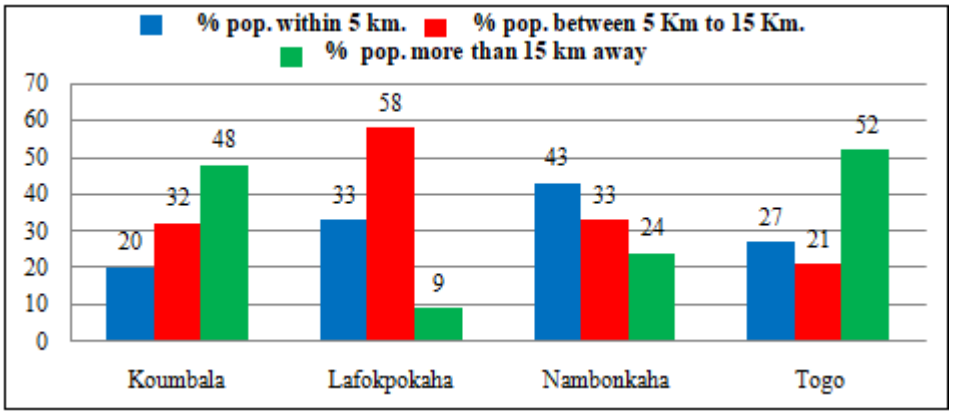


Figure 5: Breakdown of geographical accessibility by health area
Source: Health district, Ferkessedougou, 2017

The graph indicates that 31% of the population of the health areas surveyed live less than 5 km from a health center. 35% are at a distance of between 5 and 15 km from a health center. And finally, 34% are more than 15 km from a health center. The graph shows the distribution of geographical accessibility health area. In the health area of Lafokpokaha, 58% of the populations live between a distance of 5 to 15km, 33% of the population live within 5km and 9% of the population live to more than 15km from the center of Lafokpokaha's health center. In the Nambonkaha health area, 43% of the population live within 5km, 33% of the population live between a distance of 5 to 15km and 24% of the population live to more than 15km from the Nambonkaha's health center. At Koumbala, 48% of the population live to more than 15km, 32% of the population live between a distance of 5 to 15km and 20% of the population live within 5km from the Koumbala's health center. In the health area of Togoniere, 52% of the population live to more than 15km, 21% live between a distance of 5 to 15km and 27% of the population live within 5km from the health center of Togoniere. Thus, this figure shows an inequality in the spatial distribution of the population according to geographical accessibility to health centers. 65% of the population lives to more than 5 km from a health center. Distance is a factor limiting sustainable access to care. In addition to the distance, the road network is characterized by very advanced deterioration and the means of transport are obsolete (motorcycles, tricycles, dilapidated minibuses).

3.3. Social accessibility

The population of the North is mostly animist. It is very focused on fetishism because men and women attach value to traditional values. The populations have recourse in the first place to traditional medicine, to fetishes. They go to hospital only when they realize that the fetish or traditional medicine is ineffective. The sacred forests are the places of consultation and supply of roots or leaves to make decoctions to treat the sick. It should be noted that socio-cultural factors constitute a major trend insofar as some patients refuse to be evacuated by car or motorbike to a health center. People categorically refuse to go to hospital even if the health center is close. Thus, socio-cultural factors (ancestral beliefs and practices, the use of fetishes, traditional healers, marabouts and healers) limit the use of health services.

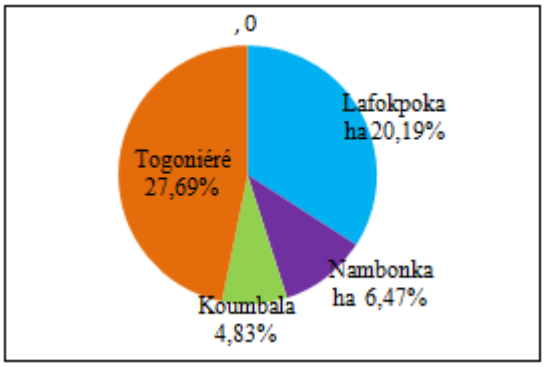


Figure 6: Distribution of people without using health services
Source: Our surveys, September to October 2017

The graph above shows the distribution of individuals surveyed across the survey area, who do not use health services according to sociological considerations. In Lafokpokaha, 20.19% of the population does not use health services, 6.47% in Nambonkaha, 4.83% in Koumbala and 27.69% in Togoniere. In total, an average of 13.78% of the population refuses to attend health centers. People find that there are effective traditional medicines to treat and cure the diseases for which people go to hospital. Thus cultural constraints influence the choice of medicines insofar as populations have told us that they recover quickly from healing by consuming traditional medicines. 41% of the population of the department of Ferkessedougou find that traditional medicines are effective.

4. Discussion

There is a relationship between access to care and sustainable development because health is an indicator of human development which places man at the center of the millennium goals for sustainable development. Geographical accessibility, socio-cultural constraints and the impoverishment of populations are the main determinants of sustainable access to health care in the department of Ferkessedougou. The consideration of social, economic and environmental parameters by decision-makers and researchers in the development process taking place in developing countries has prompted us in this work to integrate the question of sustainable development into the geography of health in order to understand on the one hand the convergence between the two disciplines and to identify

the factors that hinder sustainable and equitable access for all to health care on the other hand. It is difficult to analyze access and equity to health care without questioning the factors that condition them [2]. Sustainable access to health care is only possible if and only if the offer is sufficiently adapted to reach the population in all its diversity. As such, access to health care depends on contextual factors related to the supply and characteristics of the demand for care [3]. Poor health is a factor of social and economic stagnation [4]. However, social and cultural obstacles constitute a real problem to have access to health care in the department of Ferkessedougou, as everywhere else in Africa. According to [5], medicine has an animist origin and its practice dates back to prehistoric times. And the best-known traditional medical practices are those observed in cultural currents.

The North of Côte d'Ivoire is the region where the population is increasingly poor. The rate of poor population increased from 40.3% in 2002 to 77% in 2008 then to 89% in 2011 while the national average was 38.4% in 2002, 48.9% in 2008 and 51.3% in 2011 [6]. Despite the end of the war in 2011, the social situation of the populations of the department of Ferkessedougou and particularly the rural population remains precarious. The population of small farmers, widows and unemployed young people is so large that it is unable to meet the costs of health care. Thus, a poor population cannot consume health care and at the same time, it is not productive. This could therefore have a negative impact on economic growth. Moreover, macroeconomic growth models that use health [7], [8] have agreed on the fact that a 10% increase in life expectancy induces a growth in GNP of 0.3 to 0 .4 points.[5] This is why the health differential status explains a large part of the growth differences between the different regions of the world [9].

Physical environment is a problem in the department of Ferkessedougou, as in most African countries. It is in this that [10] finds that poorly controlled urbanization in African countries constitutes one of the weaknesses of regional planning policies which hinders access to health services. Moreover, the gap between sub-Saharan Africa and East Asia is explained for more than half by a differential in disease burden, demographic and geographical situation [11]. Faced with the health difficulties encountered by the populations, only efficient health planning can improve the health map and bring health structures closer to the department of Ferkessedougou.

5. Conclusion

The results of the research show that sustainable access to health care is still problematic in the department of Ferkessedougou with regard to the relatively low attendance rates (35%) and use of services (29%). The analysis of the economics, socials and environmental determinants of access to health care remains unfavorable the objectives of sustainable development. This article does not claim to revolutionize the medical environment in Côte d'Ivoire, let alone hospital management in the department of Ferkessedougou. It rightly challenges the scientific world but also practitioners to study in more detail the interdisciplinarity between sustainable development and geography in order to identify issues in the sensitive health sector. The originality of this paper is therefore to bring together two disciplines, which may inspire numerous investigations in the future from the econometric angle, access to and use of health care in order even to assess the weight of externalities (positive or negative) in the practice of sustainable development in the field of health at the level of the Ivorian regions.

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[5]Economic evaluations in terms of Disability-Adjusted Life years (DALYs) conclude that one year of life gained in good health is considerably greater than one year of income.