

Health care supply about the health needs of deaf people in Abidjan

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ABSTRACT: The availability of quality health care facilities is essential to care for disabled populations such as Deaf people. Indeed, these populations are much more vulnerable to chronic diseases. The city of Abidjan abounds in dense and diverse health care offers but is unevenly distributed in the city. The goal of this paper is to make an exploratory study on the adequacy between the health care offer and the healthcare needs of deaf people. In other words, it will be a question of analyzing the aptitude of the care structures to take care of the deaf people concerning their needs in health care. From socio-demographic and sanitary data coming from the general census of the population and the habitat of the National Institute of Statistics and the database of the direction in charge of the Deaf people; a descriptive and cartographic statistical analysis was realized. Our results show that in the care structures, there is no health policy for medical care for deaf people. The staff is not trained in sign language. Only 1% of the staff can communicate with deaf patients. However, their need for care is effective with, for example, more than 62.2% of the deaf people surveyed having requests for care in general medicine. We, therefore, deduce a mismatch between the supply of care and the health care needs of deaf people.

KEYWORDS: Abidjan, care offer, care needs, deaf person, care.

1 INTRODUCTION

To improve the health of the populations, the African governments following the Alma-Ata conference in 1978 opted for the modeling of their health policy. Thus, the Ivory Coast adopts the principles defined by this same organization in Alma-Ata in 1978: the diffusion of primary care structures to achieve health for all by the year 2000. Its mission is to provide basic curative and preventive care to improve the well-being and health of the population while taking into account priority health needs and the fundamental determinants of health [1]. This policy is taking shape with the strengthening of the primary care offered throughout the Ivorian territory, particularly in the city, to improve geographical accessibility to care for the entire population, including vulnerable people such as the hearing impaired. Primary care facilities account for 87% of health services in Abidjan, i.e., one health center for more than 5,000 inhabitants and 1 doctor for every 10,000 inhabitants ([2]; [3]). The city of Abidjan is a privileged space because it gathers most of the health care structures in Côte d'Ivoire. There are 1,044 facilities spread over a short distance, representing 20% of the modern health care supply. This offer is characterized by its density and is composed of public, private, and religious health care. A distinction is made between first, second, and third-level health care structures. Although the Ivorian health care system has a varied supply, it is strongly dominated by the private sector. Despite the density of the health care offered in Abidjan, very few health care structures are specifically designed to take care of deaf patients [4]. However, deaf people have particular care needs. They are particularly vulnerable to deficiencies in health care services. Depending on their group and location, they may be more vulnerable to secondary conditions, co-morbidities, age-related conditions, risk behaviors, and higher rates of premature death. Chronic diseases are responsible for the increased mortality rate among deaf individuals [1]. A study published by hear-it.org, 2020, found that hearing loss may also be associated with a 39% and 21% increased risk of premature mortality, respectively, among people with moderate and severe hearing loss compared to others without hearing loss. Especially in developing countries, people with disabilities enjoy poorer health [5]. The poor socio-economic situation that people with disabilities experience makes them more vulnerable to their health status [6].

In addition, patients with disabilities often have complex medical problems that require addressing multiple issues during a consultation with a physician. They may also require additional time and assistance with mobility and communication [7]. The notion of "need" used in this article encompasses the needs felt and expressed by the local population as well as those defined by professionals. It goes beyond the simple notion of demand and takes into account the population's ability to benefit from health care and public health programs.

To our knowledge, no study has been published to date on the supply of care for the care needs of deaf people in Abidjan. The goal of this paper is to make an exploratory study on the adequacy between the offer of care and the needs of care for deaf people in the city of Abidjan. In other words, it will be a question of analyzing the aptitude of the care structures to take care of the deaf people regarding their needs in health care. We hypothesize that there is an inadequacy between the offer of care and the needs for care of the hearing impaired in Abidjan.

2 MATERIALS AND METHODS

2.1 PRESENTATION OF THE STUDY AREA

The city of Abidjan is located in the south of Côte d'Ivoire and comprises 10 communes (Figure 1). The economic capital covers an area of 2,119 km², or 0.6% of the national territory, and has 4,395,243 inhabitants [8]. The deaf and hard of hearing population is estimated at 4336 people [8]. The majority of associative groups of deaf people are represented there (17 associations). The most important are: ANASOCI (national association of the deaf of Côte d'Ivoire), FASOCI (federation of associations of the deaf of Côte d'Ivoire), ANAFESOCI (national association of deaf women of Côte d'Ivoire). The communes of Abidjan are made up of both upscale residential areas (Cocody in the north, Marcory in the center) and working-class and precarious neighborhoods (communes of Abobo [north], Attécoubé [center], Yopougon [west], and Port-Bouët [south]). The city is also home to three large University Hospital Centers (CHU): the CHU of Cocody, the CHU of Treichville, and the CHU of Angré. These are third-level health centers. We also have 10 general hospitals, basic community health centers, and a multitude of private health care services.

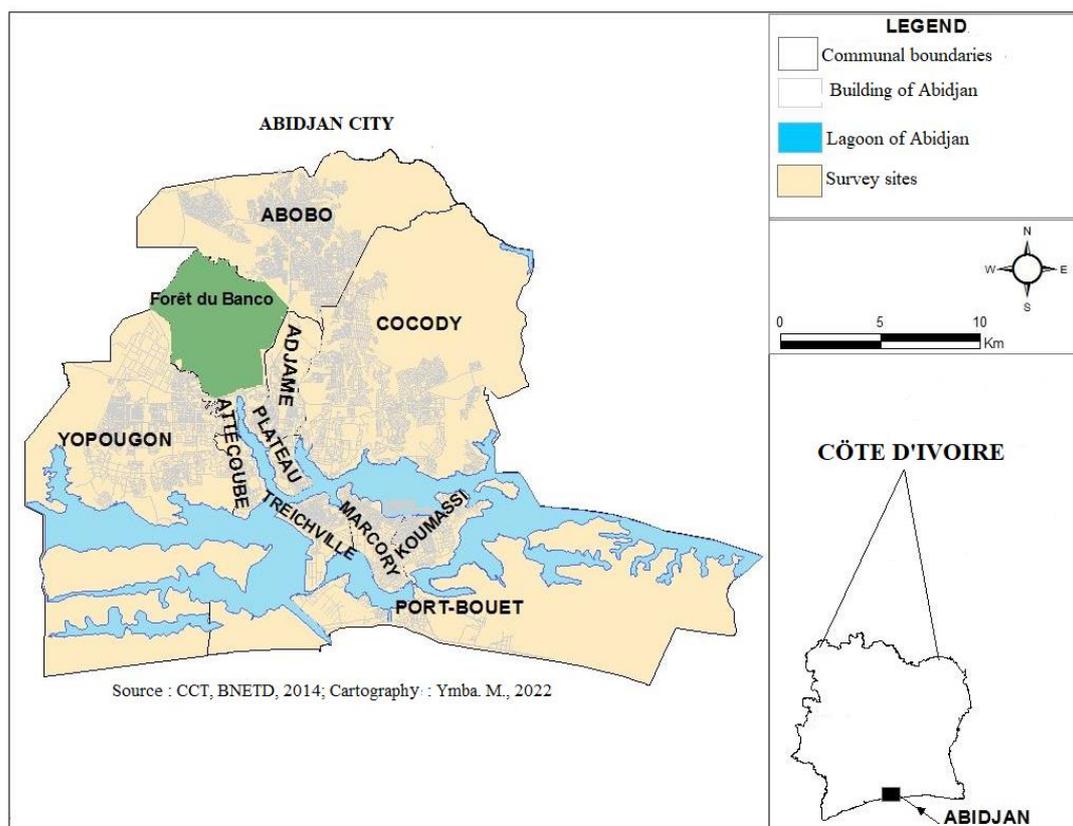


Fig. 1. Location of the city of Abidjan

2.2 DATA COLLECTED

2.2.1 DEMOGRAPHIC AND HEALTH DATA

The demographic data collected are from the general population and housing census of the National Institute of Statistics (RGPH, 2014); and from the Direction de la Promotion des Personnes Handicapées (DPPH). This data includes the number of deaf and hard-of-hearing populations in Abidjan, health data, and the list of different associations of deaf people in the city of Abidjan. Then, other information was collected from the associations of deaf people, it is the distribution of associations of deaf people in the city of Abidjan and the number of members of different associations of deaf people in the city of Abidjan, the morbidity declared by deaf people. The age was between 16 and 65 years. In terms of health, data on the health care needs of deaf people were collected from the study population.

In addition to these secondary data, we collected primary data from a field survey. Two data collection techniques were used to collect data from the deaf population and medical staff. The questionnaire survey and the interview.

The survey was conducted from September to November 2021 among 100 deaf people, i.e., 10 people per association in the various communes of the city of Abidjan. The questions were related to demographic and socio-economic characteristics, medical consultations, and the use and satisfaction of health care services. During the surveys, we used sign language interpreters for the interpretation.

In addition, an interview guide was developed and used with managers of health facilities that deaf people frequent, and with caregivers who have ever seen a deaf patient. The interview in the health centers allowed us to have more information on the health policy of medical care for deaf patients, and the capacity of the health structures to answer their need for care.

2.2.2 HEALTH CARE SUPPLY DATA

The geographic coordinates of the health centers in the city of Abidjan were extracted from the 2014 database of the National Committee for Remote Sensing and Geographic Information of Abidjan [8]. This database was updated in the field by taking geographic coordinates (latitude and longitude) using a Garmin-type Global Positioning System (GPS) of the care facilities. These field surveys took place from October to December 2020. The study covered all public and private health facilities in the city of Abidjan. For the rest, data on the number of health care personnel, particularly general practitioners, nurses, and midwives, were collected during our field survey in these health care centers during the period from August to September 2021. The exploration of these data will make it possible to evaluate the offer of care for the needs of care of deaf people.

2.3 METHOD OF ANALYSIS

The data were processed and analyzed with sphinx v5 and Excel software, entered into a data entry mask developed in Epi Data, and then transferred. A flat sorting was carried out with proportion calculation for the main variables of the study. First, a descriptive analysis of the survey data was performed. The data from the interviews were transcribed in Word and then interpreted. The data on the supply of care was processed and represented in the form of thematic maps using QGIS 3.24 software.

3 RESULTS

3.1 A DENSE AND DIVERSIFIED BUT UNEVENLY DISTRIBUTED HEALTHCARE OFFER

The supply of care in Abidjan is characterized by its density and diversity (Figure 2). It is composed of both public and private, community, faith-based, and NGO health care, with a diversity of care. It offers a wide choice to its population in case of care needs.

There are more than a thousand establishments spread out over a short distance. The health care supply is concentrated in the center of the city and along the communication axes between the communes. Private health care services make up a large part of the health care supply in Abidjan. Figure 2 shows very strong spatial disparities and a very marked opposition between the east and west. There is a high concentration of health care services in the communes of Abobo in the north and Yopougon in the west of Abidjan. In the north of the city, in the commune of Cocody, health care facilities are spread throughout the commune. The city of Abidjan indeed has a dense and diversified health care offer, but this offer is not inclusive and hides great disparities within the city. The health care structures do not provide much care for people with disabilities. This

is the case for deaf people. Even though the health care offer is dense and diverse in the city of Abidjan, deaf people encounter difficulties during their healthcare journey. The structures of care entitled to take care of them are rare, even non-existent.

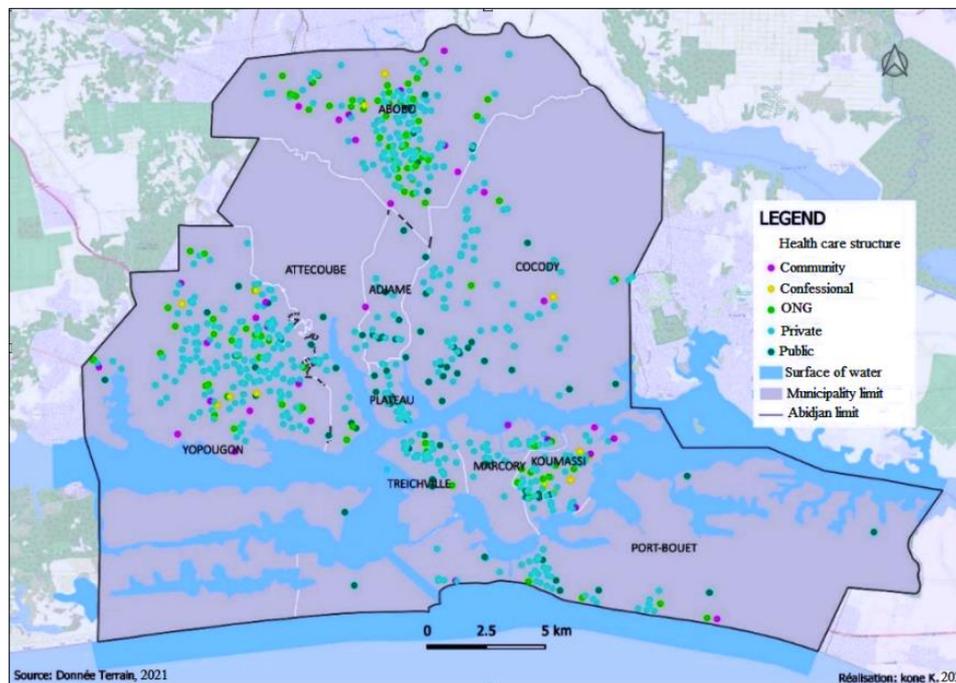


Fig. 2. Distribution of modern health care services in Abidjan

3.2 INADEQUACY BETWEEN THE SUPPLY OF CARE AND THE CARE NEEDS OF DEAF PEOPLE

3.2.1 PRESENTATIONS OF THE CARE STRUCTURES FREQUENTED BY DEAF PEOPLE

The city of Abidjan has a large number of health care facilities. However, there are only fifteen health care facilities that can accommodate and care for deaf people (Figure 3). These health care facilities are mainly made up of second and third-level referral health facilities. The first referral facilities (general hospitals) are the most used by deaf people. The private health care offer is not used enough because of the poor economic situation due to their poor access to stable jobs. These structures are unevenly distributed and concentrated in the center to the detriment of other areas and the periphery.

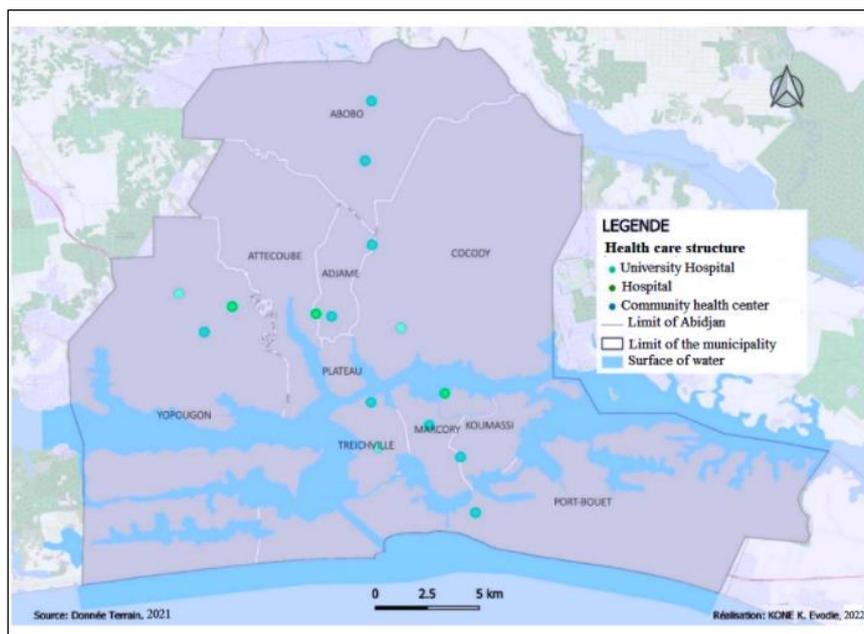


Fig. 3. Location of health care facilities used by Deaf people

3.2.2 ACTIVITIES OF HEALTH FACILITIES REGARDING THE CARE NEEDS OF DEAF PEOPLE

The health care facilities that deaf people use do not include services for their medical care. There is no sign language interpreter service (Table 1). The staff at the health centers do not know sign language. They do not know sign language and do not have the skills to ensure good reception and convey important information to deaf patients.

Table 1. Low level of knowledge of sign language by the staff of the health facilities surveyed

Knowledge of sign language	Friendly staff	
	Yes	No
CHU of Cocody	0	0
Treichville University Hospital	0	0
Port-Bouët General Hospital	0	0
Marcory General Hospital	1	0
Treichville General Hospital	0	0
The general workforce in %.	1	99

Source: Our field surveys, 2021

3.2.3 INCORRECT KNOWLEDGE OF SIGN LANGUAGE AMONG MEDICAL STAFF

The medical staff is not trained to receive and provide better care to deaf patients. This situation hinders the medical care of deaf people, hence the inadequacy between the offer of care and the sanitary need. Deaf people, under these conditions, come to consultations with family members who do not speak sign language and who serve as intermediaries between the caregiver and the deaf patients (Table 2).

Table 2. Low level of knowledge of sign language by the staff of the health facilities surveyed

Knowledge of sign language	Yes	No
Friendly staff		
CHU of Cocody	0	0
Treichville University Hospital	0	0
Port-Bouët General Hospital	0	0
Marcory General Hospital	1	0
Treichville General Hospital	0	0
The general workforce in %.	1 %	99 %

Source: Our field surveys, 2021

3.2.4 REPORTED MORBIDITY: PROVEN HEALTH CARE NEEDS

Deaf people have specific health care needs and therefore health care services must be adapted to their demand for care for effective medical management (Figure 4). Indeed, the analysis shows that general medicine is the service most used by deaf people (62.3%). The gynecology service is the most used by deaf women (9.8%). Ophthalmology is the second most used health care service by deaf people (10.6%). So is diabetes (9.8%) and cardiology 8.1%. In substance, their need for care is effective, in addition, the health services are not equipped and adapted for effective medical care of its users. This results in a high rate of traditional and modern self-medication among the said population and a renunciation of care. 86.1% do not use health care services as a first resort to care and 82% use health care services in case of serious illness. Only 13.08% use health care services as the first line of care. And 5% of deaf respondents do not use health care services.

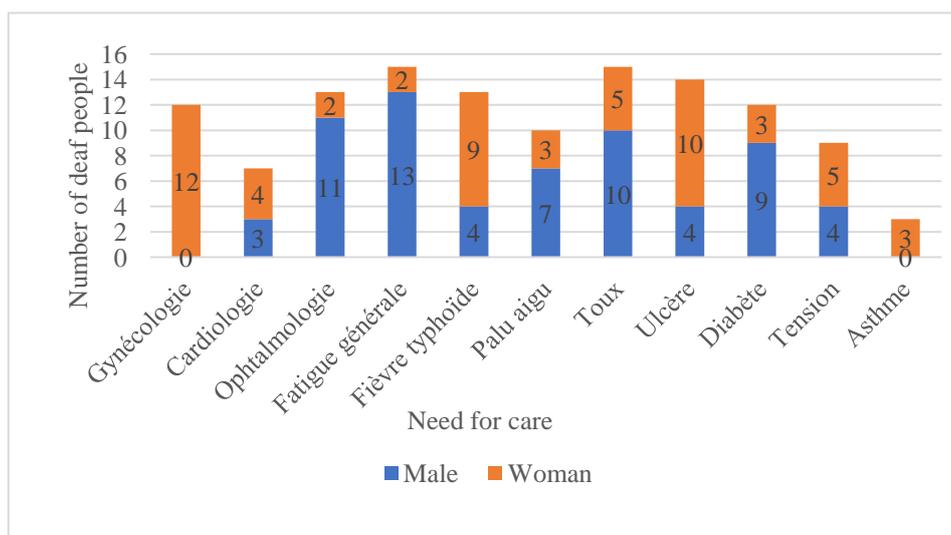


Fig. 4. Morbidity reported by Deaf people

Source: Our field surveys, 2021

There is a mismatch between the health care offer and the healthcare needs of deaf people in Abidjan. The health care offered in Abidjan is characterized by its diversity and its density, however, it does not contain health care structures intended for the medical care of deaf people. However, the care needs of these people are real.

3.2.5 DEAF PEOPLE'S FEELINGS ABOUT HAVING THEIR CARE NEED TO BE MET

The relationship between deaf patients and caregivers is not easy. Deaf people are confronted with poor medical treatment and the comprehension problem that is proven to prevent doctors from responding effectively to the care needs of these

people. The testimony of the deaf people interviewed presents us with a population that does not benefit from good quality care.

Respondent 1: "The doctor prescribes me medication when I don't get my health back, he prescribes my other medication, he doesn't try to understand the real problem. I am like a guinea pig for them."

Respondent 2: "The doctor is prescribing me medication that doesn't fit my ailment, I'm not getting my health back and it's hard for me."

Respondent 3: "I know a deaf woman who died not long ago because she was abused."

Respondent 4: "Doctors don't make an effort with us, they prescribe the wrong drugs. I am afraid to go to the hospital when I am sick. But I have to go."

Respondent 5: "I had a dental Carrie that the dentist had to pull out. She poked me with anesthesia but didn't allow time for it to take effect. She pulled the tooth out so violently, I was in a lot of pain and bled profusely all day."

Respondent 6: "I went to the hospital with a chest ache and a headache, but the doctor gave me some medicine which I took, but which did not help me recover".

Deaf people face difficulties in the hospital, especially in understanding their condition and establishing effective treatment at first contact. Their need for care is unmet, resulting in misdiagnosis. Frustration and fear are common in the deaf community when it comes to going to the doctor. Faced with these difficulties and frustrations, deaf people, educated or not, are forced to seek medical assistance from intermediaries. Services are limited due to the lack of a common language, limited access to information, and lack of knowledge of the health care system as a whole.

3.3 CAPACITY OF HEALTH CARE FACILITIES TO CARE FOR DEAF PEOPLE

It is about the predisposition of health care structures to meet the care needs of deaf people. And their ability to provide effective care to its users.

3.3.1 PERCEPTION OF THE HEALTH CARE FACILITY RECEPTION SERVICE USED BY DEAF PEOPLE

Deaf people's perceptions of the care facilities they attend are presented in the following table (Table 3).

Table 3. Deaf people's perception of the reception service

Deaf people's perception of the reception service		Well		Fair		Wrong		Workforce	
		Eff	%	Eff	%	Eff	%	Eff	%
Public health care structure	CHU of Cocody	9	22	2	15,4	9	13,1	20	16,3
	Treichville University Hospital	2	4,9	1	7,7	6	8,7	9	7,3
	General Hospital of Abobo North	4	9,8	2	15,4	19	27,5	25	20,3
	Abobo South General Hospital	6	14,6	0	0	4	5,8	10	8,1
	Adjamé General Hospital	1	2,4	0	0	2	2,9	3	2,4
	Koumassi General Hospital	2	4,9	0	0	6	8,7	8	6,5
	Marcory General Hospital	3	7,3	1	7,7	10	14,5	14	11,3
	Treichville General Hospital	1	2,4	0	0	5	7,2	6	4,9
	Port Bouët General Hospital	1	2,4	0	0	3	4,3	4	3,25
	Yopougon General Hospital	5	12,2	1	7,7	0	0	6	4,9
	CSU Wassakara	2	4,9	2	15,4	3	4,3	7	5,7
Attécoubé General Hospital	2	4,9	1	7,7	2	2,9	5	4,1	
Private health care facility	Crystalide Yopougon private clinic	3	7,3	3	23,1	0	0	6	4,9
The general workforce in %		33,3		10,6		56,1		100 %	

Source: Our field surveys, 2021

The analysis of the table shows that 56.1% (69 deaf people) find the reception service poor compared to 33.3% (41 deaf people) of the surveyed population. Of the deaf people who attend the general hospital in Abobo North, 27.5% (19 people) find the reception service poor. Among deaf people who attend the Marcory general hospital, 14.5% (10 people) find the reception service poor. At the CHU of Cocody, 13.1% or 9 people find the reception service bad. The deaf people who think that the reception service was good are 39.1% (22% +9.8% +7.3%), i.e. 16 people in these health care facilities.

3.3.2 STIGMATIZED DEAF PATIENTS IN HEALTH CENTERS

Figure 5 illustrates the stigma that Deaf people face in some of the health centers they attend.

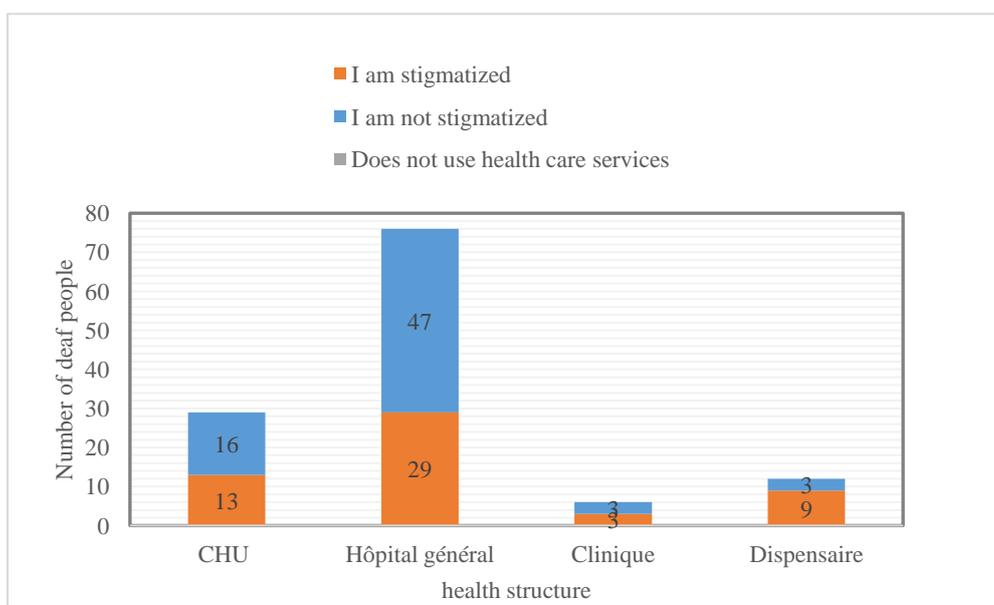


Fig. 5. Stigma of deaf people in health centers

Source: Our field surveys, 2021

Analysis of Figure 5 shows that of the 100 people who use health care services, 43.9% or 54 deaf people are stigmatized compared to 56.1% or 69 people who are not. Of the deaf people who are stigmatized, 24.1% or 13 people attend UHC, 53.7% or 29 people attend general hospitals, 5.6% or 3 people attend private health care services, and 16.7% or 9 people attend basic care services. Deaf people attending general hospitals are not stigmatized (61% or 47 people). We observe that 55.1% or 16 deaf people who attend the CHU of Cocody are stigmatized against 44.8% or 13 deaf people who are not stigmatized. We observe that 50% or 3 deaf people who attend the clinic are stigmatized against 50% or 3 deaf people who are not stigmatized. The deaf people who attend the basic health centers are 75% or 9 people stigmatized against 25% or 3 deaf people who are not stigmatized.

Deaf people who are stigmatized face logistical difficulties, such as not being aware when their name is called in the waiting room. This forces them to wait longer in the waiting room.

3.3.3 MEDICAL CONSIDERATION OF THE PROBLEMS OF DEAF PATIENTS

3.3.3.1 LONG WAITING TIME

Waiting time is considered too long by deaf people. This is illustrated in Table 4.

Table 4. Waiting time considered too long

Waiting time Care structure	10 min.		30 min.		1 h		More than 2 hours		General workforce	
	Eff	%	Eff	%	Eff	%	Eff	%	Eff	%
Abobo North General Hospital	0	0	3	13,6	0	0	22	30,6	25	20,3
CHU of Cocody	3	12,5	4	18,2	3	60	10	13,9	20	16,3
Treichville University Hospital	2	8,3	2	9,1	1	25	4	5,6	9	7,3
Crystallise Private Clinic Yopougon	4	16,7	2	9,1	0	0	0	0	6	4,9
Dispensary of Wassakara	1	4,2	2	9,1	0	0	4	5,6	7	5,7
Abobo South General Hospital	3	12,5	1	4,5	0	0	6	8,3	10	8,1
Adjamé General Hospital	0	0	0	0	0	0	3	4,2	3	2,4
Attécoubé General Hospital	1	4,2	2	9,1	0	0	2	2,8	5	4,1
Koumassi General Hospital	0	0	0	0	0	0	8	11,1	8	6,5
Marcory General Hospital	4	16,7	2	9,1	1	25	7	9,7	14	11,4
Port-Bouët General Hospital	1	4,2	2	9,1	0	0	1	1,4	4	3,3
Treichville General Hospital	2	8,3	0	0	0	0	4	5,6	6	4,9
Yopougon Attié General Hospital	3	12,5	2	9,1	0	0	1	1,4	6	4,9
The general workforce in %.	19,5		17,9		4,1		58,5		100	

Source: Our field surveys, 2021

The analysis of table 4 informs us that 58,5 % is 69 deaf people surveyed wait a long time (More than 2 hours) in the waiting room. While others, 37,4% or 46 people, claim to be received in time by the health care staff. In health care facilities such as the general hospitals of Abobo North and South; Koumassi and Marcory and the CHU of Cocody, 73,6% (30,6% +13,9% +8,3% +11,1% +9,7%) or 53 deaf people waited more than 2 hours in the waiting room. While 41,7% (12,5% +12,5% +16,7% +0% +0%) or 10 deaf people are quickly received by health care personnel in these facilities

3.3.3.2 TIME SPENT IN THE DOCTOR'S OFFICE

Figure 6 shows us how long a deaf patient's medical consultation can take.

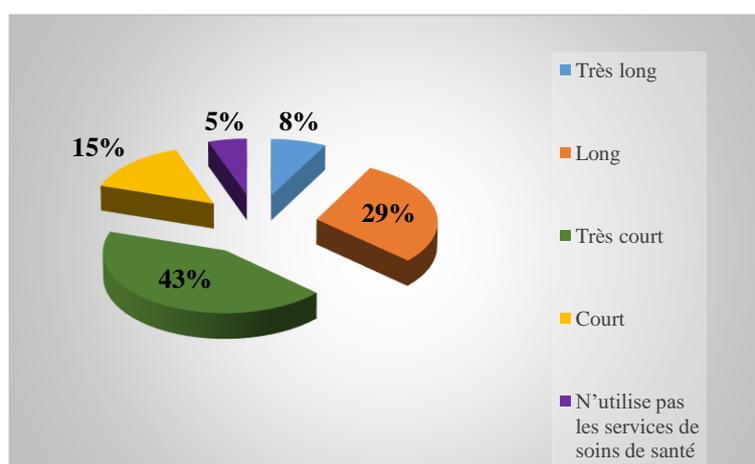


Fig. 6. The time it takes for a deaf patient to see a doctor

Source: Our field surveys, 2021

Analysis of Figure 6 shows that a large majority of deaf respondents say that the time they spend with their doctor is short: 58% (43% +15%) or 75 people. The people who say that their medical consultation is long are few 37% (29% +8%) or 48 people. 5% of the deaf people surveyed do not use health care services.

In sum, Abidjan has a dense and diverse health care offer, but it is unevenly distributed throughout the city. The private sector occupies a large part of the health care offered in Abidjan, while the public sector represents a small part of the health care offered. However, this sector is the most used by deaf people. They mainly use the first and second referral services. These services offer a wide choice to deaf people but are not adapted to meet their care needs. In these care structures, there is no health care policy for deaf people. There is also a lack of sign language interpreters. The staff in charge of reception is not trained in sign language. Only 1% of the staff can communicate with deaf patients. Yet their need for care is real. We observe that 62.2% of the deaf people surveyed have care needs in general medicine; 9.8% of women have care needs in gynecology; 10.6% in ophthalmology; 9.8% in diabetology; 8.1% have care needs in cardiology. In addition, the medical care of deaf people in these health centers is problematic. 56.1% of deaf people find the reception service in the health care facilities poor compared to 33.3% who find it good. 43.9% of deaf people said they were stigmatized. And 58.5% of the deaf people surveyed said that they had to wait more than 2 hours before being seen by a care provider. In addition, the length of the medical consultation is short for some (58%) and others too long (37%).

4 DISCUSSION

The study allowed us to analyze the health care offer about the health care needs of deaf people in Abidjan to identify the adequacy between the health care offer and the healthcare needs of deaf people in the city. Our results revealed a strong spatial disparity of health coverage, a dense and diverse health care offer, but not inclusive. With non-existence of health care structures intended for the medical care of deaf patients. Studies have also shown that the Deaf face a shortage of services adapted to their specific needs ([9]; [10]). Our study also showed that deaf people frequent public health centers. In these health care facilities, there is no sign language interpreter service. One percent (1%) of the reception staff understands sign language, and the medical staff is not trained to provide proper medical care for deaf patients. Studies by [11] are similar to ours. They showed that the health care system is not adapted to their needs and the medical staff is not trained to receive people with disabilities, especially deaf people. Our results corroborate the study of Anne Elise Granier, 2020 conducted on deaf people in Burkina Faso. This qualitative study revealed that there are no sign language professionals in medical facilities. The study conducted by N. Larvière et al, in 2019 on the service needs of LSQ (Langue des signes québécoise) deaf speakers with mental health disorders in Quebec also showed that several obstacles affected the use of certain services, including the lack of knowledge of deafness and deaf culture in the network, which leads to various consequences such as erroneous diagnoses [12].

The study also shows that the care needs of deaf people are effective, general medicine is the most used service by deaf people (62.3%). Gynecology is the most used service by deaf women (9.8%). Ophthalmology is the second most used health care service by deaf people (10.6%). So is diabetes (9.8%) and cardiology 8.1%. Some studies show that Deaf people also need access to mental health social/health services, but these are unmet [12]. Work by ([13]; [14]) showed results diverging from ours. Their results showed that people with hearing disabilities have an "over prevalence" of cardiovascular risk factors, 84.4% of deaf patients have at least one cardiovascular risk factor, compared to 64% of the general population; 34.2% of deaf patients are obese compared to 26.6% of the general population. The work of [15] also revealed that "A total of 73 solid tumors including 10 metastatic cancers and 11 cases of oncohaematology, including three cases of pediatric oncology are found in deaf people. Our study shows that the health system is not adapted to meet the needs of deaf patients.

5 CONCLUSION

The hypothesis attached to this study is that there is a mismatch between the supply of care and the care needs of people with hearing disabilities in Abidjan. This hypothesis was confirmed. This exploratory study on the supply of care about the care needs of deaf people in Abidjan revealed that the supply of care in Abidjan is characterized by its density and diversity. However, this offer is not inclusive, among 1044 care structures present in the city, there is no care structure intended for the medical care of deaf patients. In the health care services that deaf people attend, services are absent for these people. Deaf people have care needs. (62.3%) have care needs in general medicine, (9.8%) of deaf women have needs in gynecology, (10.6%) in ophthalmology, and (9.8%) in diabetology. Due to the lack of available services, Deaf people turn to self-medication and traditional medicine. Concrete actions must be put in place to considerably improve the health of Deaf people by training, for example, the health personnel of the health structures used by Deaf people for better medical care.

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