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Evaluation of the role of herbal medicine in primary health care in the city of Daloa (Central-West, Côte d'Ivoire)

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Abstract

In Côte d'Ivoire, the use of traditional medicine, especially herbal medicine, is very common in rural areas and even in cities. This situation is invariable regardless of the level of study and the socio-economic or religious affiliation of the populations. This study was conducted with the objective of evaluating the role of herbal medicine in primary health care in Daloa, the third largest city in the country where modern medicine is available. It involved 108 people divided into three groups (population, phytotherapists and modern health workers). Thus, a semi-direct survey was conducted using pre-elaborated questionnaires, specific for each group from december 2018 to april 2019. The majority of the population consults with (80 %) phytotherapists and are mostly satisfied with their benefits (77.5 %). For many, consultation is acceptable with (69.78 %) and the proportion of infectiologies used by the population is (87.5 %). However, they denounce the high cost of medical care in modern medicine and reveal several advantages and disadvantages of both medicines. 10% of modern health workers are in favor of collaboration, with a further 75 % saying that if they fail, they will not advise their patient on a phytotherapist. Traditional herbal medicine, is and remains currently sought by the population who have confidence in popular uses and who do not have the means to bear the consequences of modern medicine.

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Introduction

Humans living close to plants use them for various reasons, the most fundamental of which are consumption and medicinal properties (Sorkhabi *et al.*, 2008). In fact, it consumes them because they are part of its diet. For example, they allow it to flavour or preserve food. It is used when the body is failing in order to cure a disease, maintain health, and live as long as possible (Novais, 2004). Today, the use of plants remains of great importance in the medical field and its use is widespread throughout the world (Sorkhabi, *et al.*, 2008). WHO data (2012) indicates that about 65–80 % of the world's population use traditional medicines to meet their primary health care needs (Ma *et al.*, 1997). According to Rao *et al* (2004), an analysis of medical prescriptions in Europe has shown that about 60 % of prescriptions come directly or indirectly from plants.

In recent decades, phytotherapy research has therefore become one of the major scientific concerns (Niyah *et al.*, 2005). As a result, the WHO has implemented a universal strategy to value it as a source of health care (WHO, 2002). It also recommends that developing countries, in particular African countries, initiate programmes, always with a view to developing and improving this field (WHO, 1993). Since 21 february 2003, the WHO Africa, has instituted, every 31 august, the «African Day of Traditional Medicine», following the adoption in the year 2000 of the resolution "Promoting the Role of Traditional Medicine in Health Systems, Strategy: of the African Region" (Konan, 2012). Moreover, one of the reasons for choosing this medicine is that the use of plants is intimately linked to customs and traditions. This creates a climate of trust and an easy approach to tradipraticians (Kouamé, 2012). According to Adeneye and Olagunju (2009), other important reasons, such as the precarious conditions of the populations, the strong population growth, lack or lack of health infrastructure is at the root of the population rush for medicinal plants (Anagwetalibe, 2012). In Morocco, for example, the population has limited access to modern medical care in contrast to the preparations used in traditional medicines which are relatively cheap and easily accessible since they can be prepared from locally harvested plants (Aqil and Owais, 2006).

In Côte d'Ivoire, traditional medicine has become a component of health policy. In August 1995, the Ministry of Health and Public Hygiene integrated this medicine into its National Development Plan. In december 2001, the National Programme for the Promotion of Traditional Medicine was created (by Decree 409/CAB/MSPH of 28 December 2001) of the Ministry of Health and Public Hygiene (Konan, 2012). Thus, the present study, which forms part of the general framework for the valorisation of herbal medicine, aimed to assess its role in primary health care in the city of Daloa.

Materials and methods

Study area presentation

Daloa is a city in the western centre of Côte d'Ivoire, in West Africa. Capital of the Haut- Sassandra Region. The city is located 141 km from Yamoussoukro, the political capital and 383 km from Abidjan the economic capital. It is limited to the North by the Department of Vavoua, to the South by the Department of Issia, to the East by the Department of Zuénoula and Bouaflé and to the West by the Department of Duékoué. In 2012, its population was estimated at 261,789, the third most populous city in Côte d'Ivoire (Anonymous, 2017). In addition, the department is watered by the Sassandra River and its tributary the "Lobo" whose branches the Dé and the Gore flood all the localities.

The Bété, Niamboua, Zombo and part of Niédéboua, various allogenous and foreigners constitute the bulk of this population (Anonymous 1, 2017). This study took place in some parts of the city (Fig. 1).

Study population

Three groups of people were involved in the practical implementation of this study. These are phytotherapists, modern health workers, and the public. They were recruited on the basis of well-defined criteria.

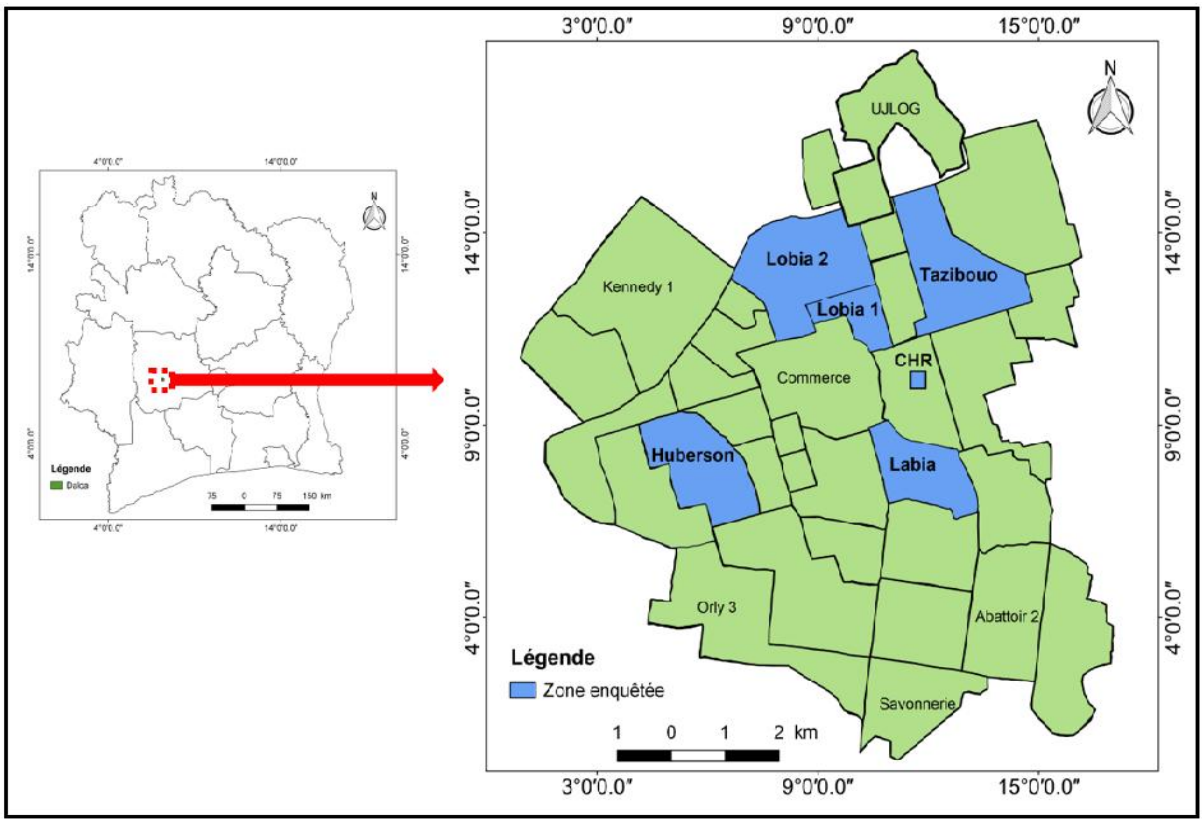

Fig. 1. Main study sites.

A: Map of Côte d'Ivoire with the position of the city of Daloa (the point in red).

B: Map of the city of Daloa.

Phytotherapists: the interviewees are recognized by the National Program for the Promotion of Traditional Medicine (NPPTM), all practice in Daloa, at home or in their places of service, located in the different districts of the city of Daloa.

Modern health workers: the medical personnel interviewed work in the various departments of the Regional Hospital Center (RHC) of Daloa, namely: medicine, radiology, pediatric, surgery, maternity.

Population: Respondents came from four districts including Gbeuliville, Labia, Lobia and Tazibouo.

The number of persons employed in the survey was 108, broken down as eight (08) phytotherapists certified by PNPMT, twenty (20) health workers of Daloa RHC, twenty (20) people from Gbeuliville, twenty (20) people from Labia, twenty (20) people from Lobia, and twenty (20) people from Tazibouo. In addition to the elements noted above, consideration must be given to the availability and consent of any person belonging to the groups of persons mentioned above.

Study strategy

Several multi-pronged questionnaires were sent to each group of people after explaining the purpose of the study. The interview was conducted face-to-face and individually with their consent (Koulibaly *et al.*, 2016).

Data processing and analysis

For this study, the Microsoft office 2016 (Word, Excel), basic software for calculations and data entry was used.

Results

Population

Socio-demographic characteristics

The population survey shows that men are more representative with 70 % of the respondents. When

women make up 30 % of respondents (Fig. 2). Concerning the level of education, the survey shows that 42.5 % of respondents have a secondary level. This group of people is followed by the university-level group with 38.75 %. Then come the primary-level people with 10 % and finally those with no level of education (8.75 %) as shown in Fig. 3. The majority of respondents are of Ivorian nationality, Christian and self-employed (Table 1). For the age group, three intervals are involved. The age group between 18 and 35 representing young people is the most dominant (53.75 %). It is followed by that of adults aged 36 to 50 (36.25 %). Finally, the age group of the elderly (10 %) is shown in Fig. 4.

Table 1. Distribution of the population by nationality, profession and religion.

	District			
	Gbeuliville	Labia	Lobia	Tazibouo
Number of person	20	20	20	20
Nationality				
Côte d'Ivoire	18 (90 %)	20 (100 %)	20 (100 %)	18 (90 %)
Foreign National	02 (10 %)	00	00	02 (10 %)
Profession				
Employee	04 (20 %)	14 (70 %)	02 (10 %)	10 (50 %)
Unemployed	03 (15 %)	00	09 (45 %)	02 (10 %)
Other	13 (65 %)	06 (30 %)	09 (45 %)	08 (40 %)
Religion				
Christian	16 (80 %)	12 (60 %)	15 (75 %)	14 (70 %)
Islamic	02 (10 %)	06 (30 %)	03 (15 %)	05 (25 %)
Other	02 (10 %)	02 (10 %)	02 (10 %)	01 (05 %)

Population relationship with both types of medicine

Relationship with herbal medicine: The results of the survey on the role of phytotherapy in primary health care in the city of Daloa indicate that the proportion of people visiting phytotherapists for a consultation is considerable (80 %) compared to those that do not (20 %) as shown in Fig. 5.

Regarding the costs of consultation and treatment, the results show that they are acceptable for a good proportion of the surveyed population (69.62 %) as shown in Fig. 6. This study shows that the Daloa population generally uses phytotherapy for various pathologies, the most representative of which are malaria, typhoid fever and stomach ulcer with 45 %, 22.5 % and 20 % respectively (Fig. 7). The survey results indicate that most of the respondents (77.5 %) are satisfied with the benefits provided by phytotherapists compared to those (22.5 %) who are not (Table 2).

Table 2. Distribution of the population according to the assessment of benefits.

Assessment	Number	Percentage
Satisfied	62	77.5 %
Dissatisfied	18	22.5 %

Relationship with modern medicine: In this section, which highlights the relationship between the population and modern medicine, the results obtained show that among the population surveyed, 5 % recognize modern medicine as the best medicine compared to traditional medicine (33. 75 %). However, among those surveyed, 52.5 % prefer herbal medicine to modern medicine (38.75 %), as shown in Fig. 8.

Table 3. Socio-demographic characteristics of phytotherapists.

	Number	Percentage (%)
Sex		
Men	07	87.5
Women	01	12.5
Nationality		
Côte d'Ivoire	06	75
Ghana	01	12.5
Benin	01	12.5
Level of education		
Illiterate	01	12.5
Primary	00	
Secondary	04	50
Superior	03	37.5
Religion		
Christian	02	25
Islamic	01	12.5
Animist	01	12.5
Other	04	50
Number of years of experience		
[10-24]	4	50
[25-39]	4	50

Table 4. Distribution of tradipraticians by

Mode of acquisition of traditional knowledge			
Transmission	Don	Self-training	Vocation
2 (25 %)	2 (25 %)	2 (25 %)	2 (25 %)

mode of acquisition of traditional knowledge.

Phytotherapists

Socio-demographic characteristics: Phytotherapists are of Ivorian nationality in (75 %) of cases. The other nationalities are Ghanaian (12.25 %) and Benin (12.25 %) as shown in Table 3. The level of studies of phytotherapists varies significantly according to sex. Between those with no level of education and those with secondary and university education. Men have higher educational attainment than women (Table 3). Fifty percent (50 %) of phytotherapists belong to other religions such as the Raëlienne religion, the Buddhist religion. Twenty-five percent (25 %) self-identify as Christian, while (12.25 %) are respectively Muslim and Animist according to Table 3. Most phytotherapists are married in seventy-five percent (75 %) of cases. They are all self-employed or at home (Table 3).

Activities of phytotherapists: How traditional knowledge is acquired phytotherapists reported that they acquired their knowledge through generation-to-generation transmission (25 %), donation (25 %), self-training (25 %) or vocation (25 %) as shown in Table 4.

Skills of phytotherapists

Phytotherapists all declare themselves generalists whose competence extends to all kinds of diseases. However, some are specialists in 2 or 3 areas of activity as shown in Table 5.

Table 5. Pathologies treated by phytotherapists.

Phytotherapist (%)	Speciality
87.5 %	Infectious diseases
75 %	Urogenital diseases
37.5 %	Metabolic diseases
25 %	Mystical diseases
12.5 %	Diseases of the nervous system

Table 6. Socio-demographic characteristics of modern health workers.

	Number	Percentage (%)
Sex		
Men	07	65
Women	13	35
Nationality		
Côte d'Ivoire	20	100
Religion		
Christian	14	70
Islamic	06	30

Modern health workers

Socio-demographic characteristics: There are 20 people including seven (7) men and 13 women aged between 30 and 57, all modern health workers (MHW) are of Ivorian nationality and work in the Regional Hospital Center (RHC) of Daloa. They declare themselves to be Christian (70 %) and Muslim (30 %) as shown in Table 6. The average professional length of service is 11 years, all specialties combined. The distribution of these MHW is provided in Fig. 9.

Table 7. Population accessibility of modern medicine.

Modern Health Workers	Accessibility of modern medicine
Accessible	50 %
Inaccessible	30 %
Less accessible	20 %

Accessibility of modern medicine by the population

The accessibility of modern medicine by the population varies among modern health workers. We distinguish three groups of people, including those (50 %) who say this medicine is accessible to the public.

Health care workers (30 %) are also seen as being inaccessible, and 20 % of health care workers say that modern medicine is less accessible (Table 7).

Discussion

The survey, conducted in the city of Daloa, allowed us to interview 108 people. It was difficult to reach the goal of 20 phytotherapists. Various reasons may explain this: the unavailability of phytotherapists, absences on the day fixed for the interview, the fact that they are busy with patients during the interview.

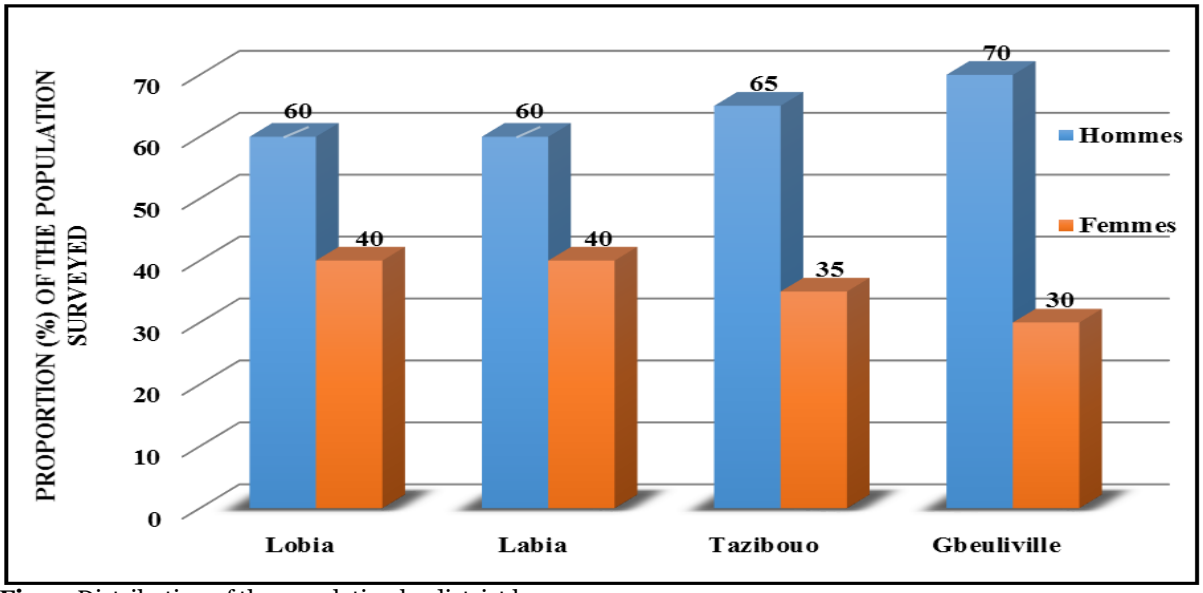

Fig. 1. Distribution of the population by district by sex.

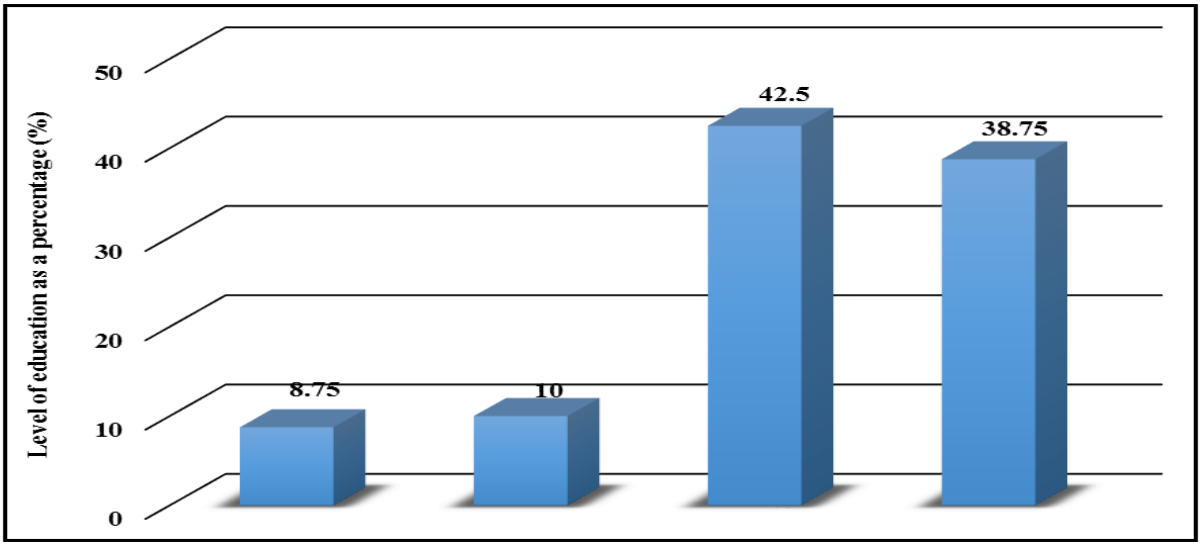

Fig. 2. Distribution of the population by level of education.

Relationship between population and herbal medicine

From this study, a general idea emerges on the use and importance of herbal medicine for those surveyed in this locality.

The majority of male and female respondents use plants regardless of age group, level of education, religious affiliation, and occupation. This is due to the fact that man, since birth, has been accustomed to the use of medicinal plants since they are part of our immediate environment and our diet. We find plants close to our homes and in our different markets. These results are consistent with those reported by Béné (2015) which states that treatments are used from birth, an integral part of our culture.

In addition, the observation made on these surveys is that there is a very high use of medicinal plants for care, with a proportion of 80 %. Our data are in phase with that of the WHO (2012) stating that 80 % of Africans use traditional medicine for health care.

This strong propensity is caused by the fact that this medicine is within reach of all. It is possible to go to the tradipraticians without however paying for consultation, which is not the case with conventional medicine. Not to mention the fact that it is an integral

part of our culture, it makes up for the inadequacies of modern medicine. Diseases not controlled by conventional medicine find their cure in traditional medicine. The results are in line with those of Konan (2012) who points out that certain pathologies such as AIDS are treated traditionally.

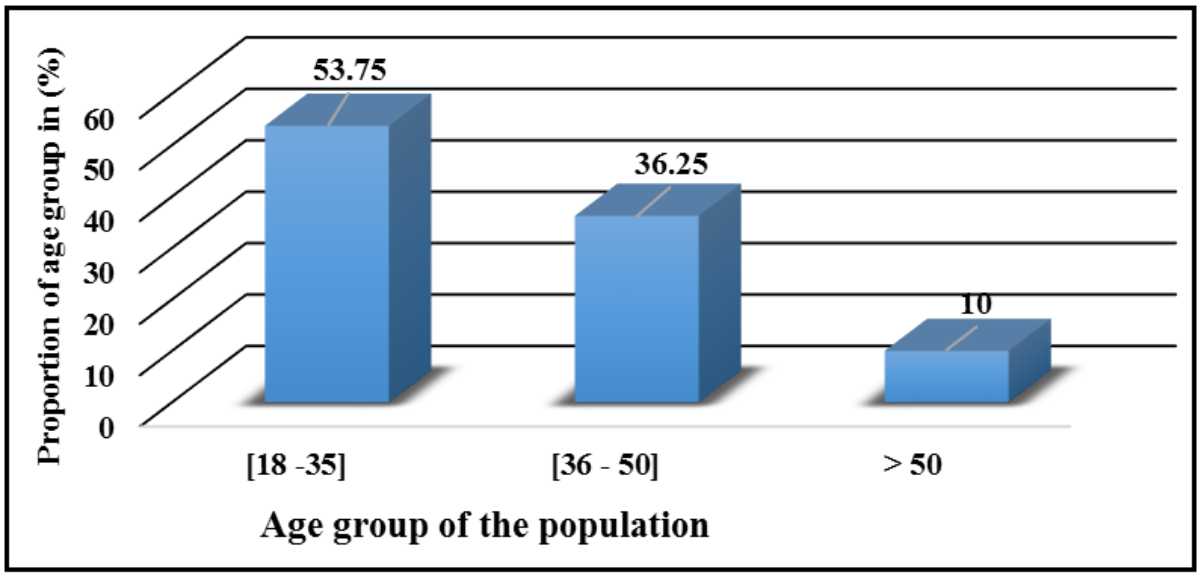

Fig. 3. Distribution of the population by age group.

These results are consistent with those of Mills *et al.* (2005) which reveal that health authorities in several African countries, including those in South Africa, are promoting the use of traditional treatments in the treatment of HIV infection and opportunistic infections. In addition, the work points out that the affordability of consultations and benefits are grounds for using traditional medicine for primary health care.

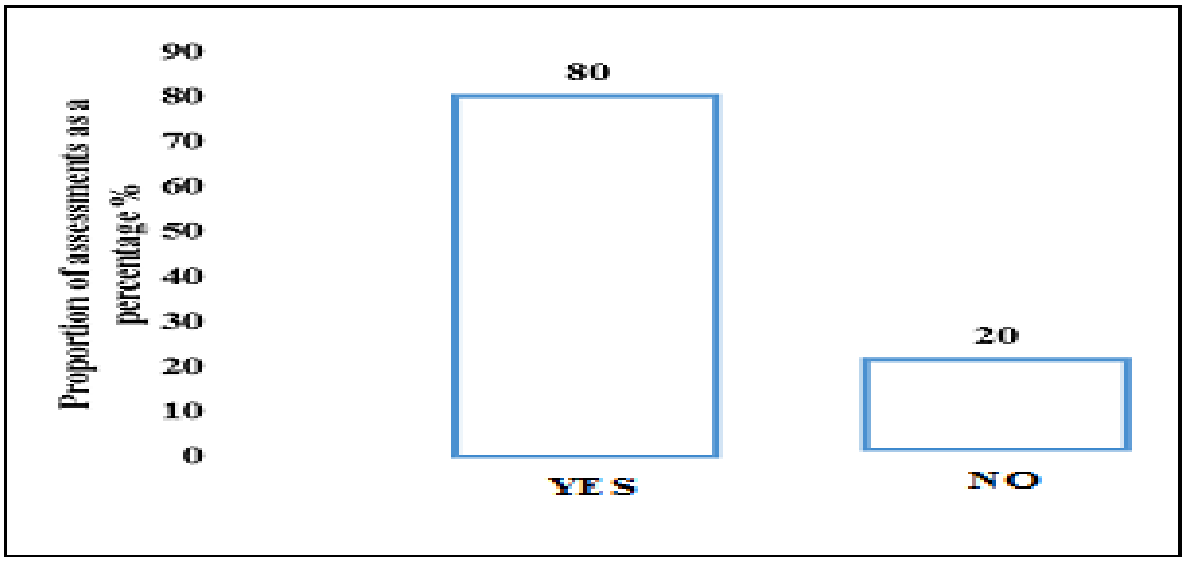

Fig. 5. Population distribution based on visits to a phytotherapist.
Yes: I consult. No: I do not consult.

These results are contrary to the findings of Doumbia (2014), which states that the main reason for traditional health care is essentially fidelity to customs and traditions. However, our study corroborates the findings of Konan (2012) who showed affordability as the primary reason for using

traditional care. The pathologies for which the respondents consult the phytotherapists are considerable. Most are generalists, but the conditions they treat cover the entire scope of primary health care, with infectious diseases such as malaria (45 %) at the top. These results are consistent with the results of some authors (Manouan *et al.*, 2010; Diaby *et al.*, 2011; Konan, 2012) on infectious diseases, which account for 50-60 % of morbidity.

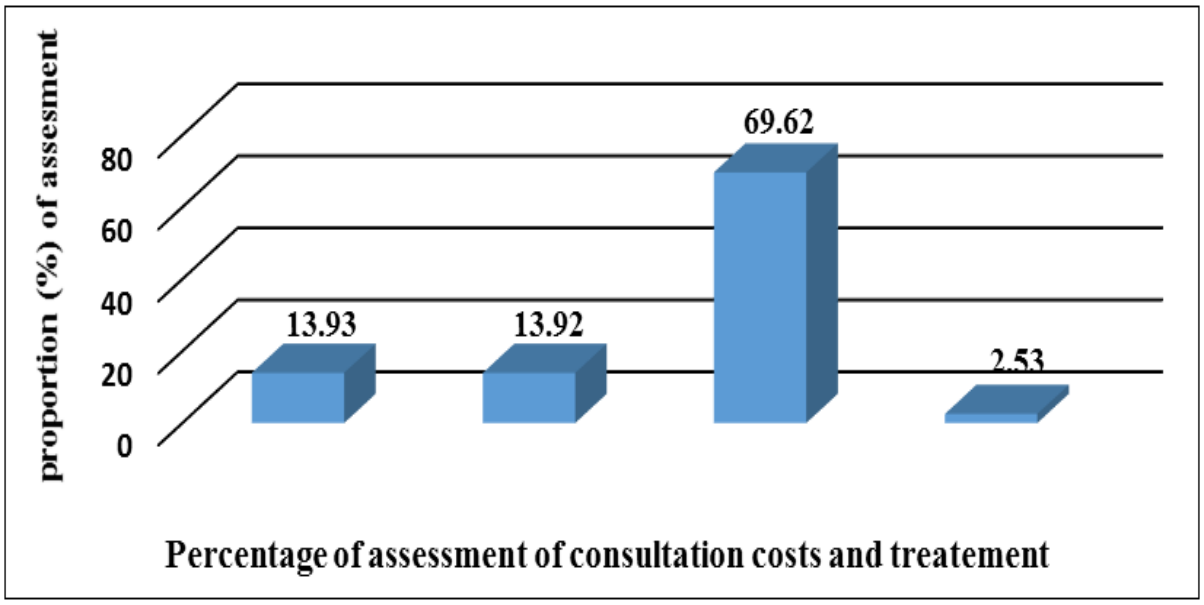

Fig. 6. Population assessment of consultation costs.

Exercise of the herbal medicine

The data obtained for phytotherapists show that the profile of practising phytotherapists in the city of Daloa is a male and literate subject. These results diverge from the work of Manouan *et al.* (2010) which showed that in the Abidjan district, phytotherapists are female, literate. Similarly, our results are different from those obtained by Kroa *et al.* (2014) who concluded that in the South Bandama region this profile is a male and illiterate subject. According to the results, (77.5 %) of respondents are satisfied with the benefits of a phytotherapist. Indeed, the phytotherapist is geographically and culturally close to his patient. He is available, living in the same social and professional environment as his patients, sharing their concerns. However, he practices holistic medicine, taking into account both the body, the soul and the spirit. His only concerns, the physical and mental health of the patient.

These data are consistent with those of Simon *et al.* (2007) which show that the phytotherapist takes a holistic approach to life. It balances mind, body and environment with a focus on health rather than disease. Let us also add that the traditional medicines that he prescribes for care, are natural with lessened side effects. According to Limonier (2008), consumers of medicinal plants in France are reluctant to accept products of conventional medicine because of many side effects and the chemicals they contain. The areas of intervention of the phytotherapists in our study are varied and cover diseases related to the classic areas of intervention of modern medicine. These data are similar to those collected by several authors (Manouan *et al.*, 2010; Kroa *et al.*, 2014) which highlight some areas of intervention of phytotherapists including urogenital diseases; infectiologies (malaria, typhoid fever, etc.); gynecology (most commonly infertility, dysmenorrhea, difficult delivery); metabolic disorders; nervous system disorders; mental disorders; skin affections; mystical affections. The years of experience of these phytotherapists range from 10 to 24 years for some and 25 to 39 years for others. This information suggests that they have acquired a good knowledge of the field of their

activity. This situation could establish some confidence between them and the public in the exercise of their profession. In terms of mode of acquisition, they have all acquired their knowledge through transmission from generation to generation, gift, dream etc. This information is in line with the data obtained by Yangni-Angaté (2004). Traditional parents choose among their descendants those who seem closer to them, more respectful of family traditions, to teach them the gestures and knowledge related to traditional therapy. In terms of diagnosis and treatment, 50 % of these phytotherapists require medical exams after allowing the patient to tell what they are suffering from, and before making any diagnosis whatsoever.

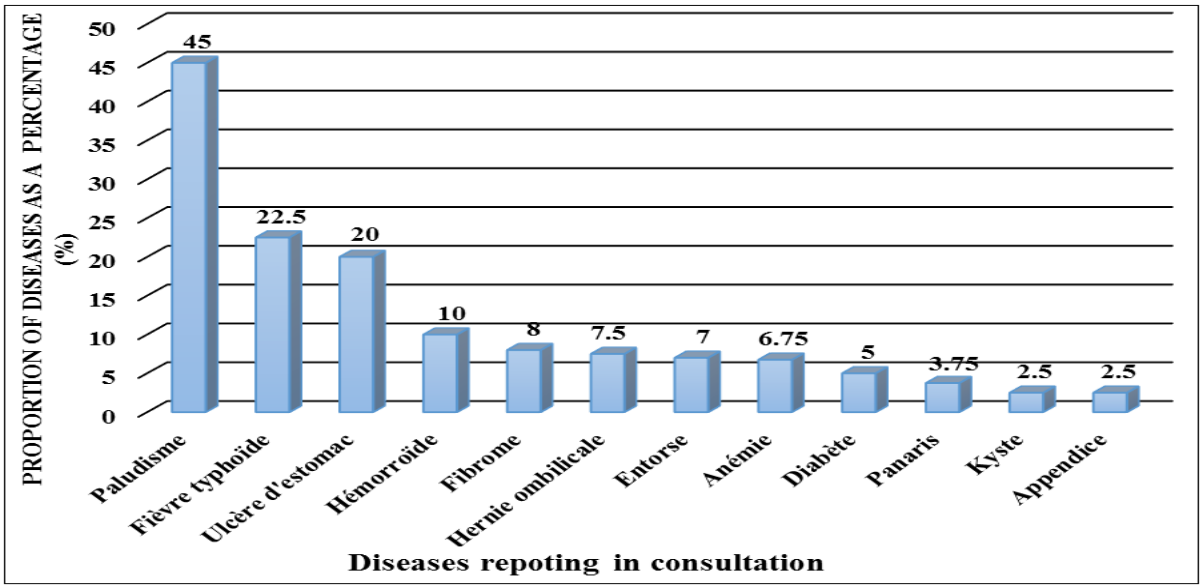

Fig. 7. Proportion of the population using phytotherapists by pathology.

These data are consistent with those of Simon *et al.* (2007) stating that the practitioner of traditional medicine receives the patient and listens carefully to his concerns; he then undertakes his consultation and suspects a condition. At this conclusion, he refers the patient to the Health Centre for confirmation of the diagnosis. In its treatment, it uses the whole plant, its parts or a mixture of plants, and proceeds by decoction, maceration, etc. These data are consistent with those of Benlamdini *et al.* (2014), which report that the most common modes of use for therapeutic treatments are classified as infusion, maceration, raw, poultice and decoction. Finally, let us address the point of collaboration between phytotherapists and the National Program for the Promotion of Traditional Medicine (NPPTM). Côte d'Ivoire, concerned about the health of its population and the realities on the ground in accordance with the recommendations of certain structures such as the WHO and the African Unity (AU), established the NPPTM by ministerial order in 2001.

The essential mission of this structure is the organization and credibility of traditional medicine practices. More than 8,500 traditional medicine practitioners were identified in 2007 and grouped by specialty. However, 1,445 were recognized by the MSHP and the WHO in 2013 (Anonymous, 2013).

There are about 30 of them affiliated with the Federation of Tradipraticians of Health and Naturotherapists of Côte d'Ivoire (FTHN-CI) created in 2008 (WHO, 2009).

In our work, all phytotherapists in the city are recognized by the NPPTM. These results are therefore contradictory to those of Stanley (2004) who reports that in Africa the sellers of medicinal plants have no part in the development of a country and are not part of a structured association.

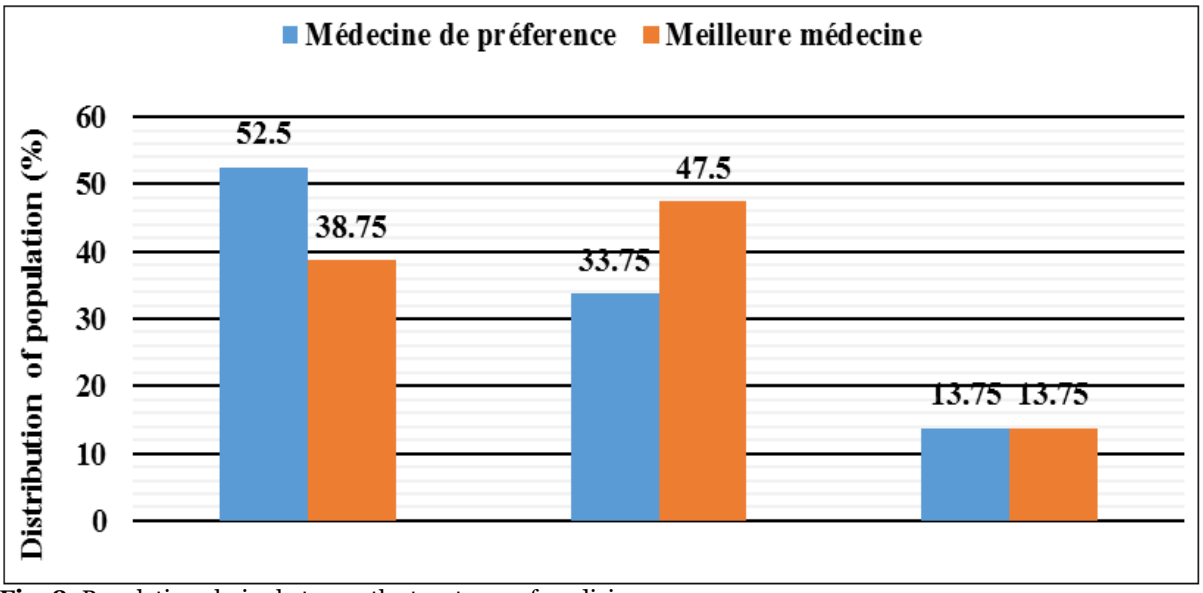

Fig. 8. Population choice between the two types of medicine.

This collaboration, like any agreement, has its advantages and disadvantages. In terms of benefits, some NPPTM-recognized phytotherapists highlight several elements. According to them, participation in seminars, seminars, and free training brings them a lot of benefits since they have to train to be effective. These seminars and colloquia, which are normally expensive and which they could not afford, are made free of charge to allow all phytotherapists to participate. These data corroborate those of Shetty (2010) showing that several workshops and information seminars, training and awareness-raising are organized and facilitated every 31 August by WHO Africa for practitioners of traditional medicine. For others, however, there is no advantage. Several points have been raised.

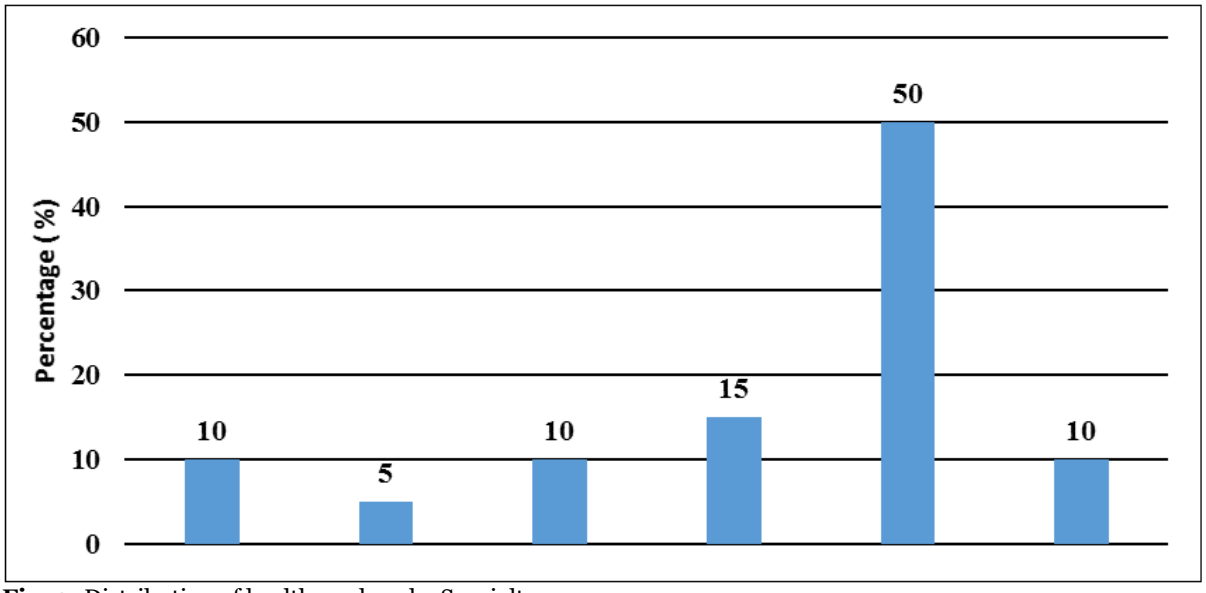

Fig. 9. Distribution of health workers by Specialty.

They receive no financial support from the NPPPTM and the Ministry of Health. During the Bachelor's, Master's and other courses, Jean Lorougnon Guédé University entrusts them with students without paying them any remuneration.

Modern health workers look at herbal medicine

Data on modern health workers highlight the fact that

the modern health practitioners interviewed are both male (65 %) and female (35 %). They are from various fields such as surgery, gynecology, pediatrics, radiology, medicine and general practitioners. However, this set is dominated by pediatrics (50 %) while the others hold. Modern health workers at Daloa RHC (80 %) recognize the vital role traditional medicine plays in the health of the population. However, collaboration between the two medicines is not yet on the agenda. In fact, a very large majority of these modern health practitioners (90 %) do not opt for collaboration. This refusal of collaboration is in response to the fact that traditional medicines do not have well-defined doses or dosage regimens, and prescriptions are made randomly. These results are in line with those of (Yaméogo, 2011), which shows that a study carried out in 2008 in the cities of Ouagadougou and Bobo-Dioulasso revealed that 78 % of the health professionals interviewed believe that traditional medicine is indeed effective and complementary to modern medicine, but it has a serious problem of dosage, charlatanism and illiteracy. In addition, some so-called mysterious diagnostic methods are connected to the world of darkness. The mysticism that surrounds traditional medicine and the use of sacrifices are among other reasons put forward for not collaborating with traditional practitioners. For these agents, there is only modern medicine, not only out of habit or mastery of the field but because it is based on scientifically proven and rational tests. These data are in line with those of (Yaméogo, 2011) which states that so-called conventional medicine perceives the occurrence of the disease as a dysfunction of a part of the body, of an organ. It is based on objectivism and rationality to explain the evil and relies on biological analyses, clinical examinations to diagnose the evil. With regard to treatment, the prescriptions and dosage are well defined. Thus, the acquisition of knowledge at the level of modern medicine is based on a course of
scientific training.

Conclusion

The aims of this study, carried out in the city of Daloa, was to determine the place of herbal medicine, its usefulness and to gather the necessary information on the activity of herbal medicine practitioners. Thus, a series of surveys of 108 people showed us a multitude of results. Among the results obtained, a proportion (80 %) of the population surveyed used this medicine and was satisfied with the treatments. In addition, 47.5 % of this population believes that herbal medicine is the best. Concerning, phytotherapists in this city, (87.5 %) are generalists. However, 50 % use medical tests for diagnosis and follow-up of patients. Modern health workers (80 %) recognize the critical role traditional medicine plays in the health of the population. However, 90 % of health workers are reluctant to collaborate.

The weaknesses and drawbacks of herbal medicine, often criticized by health professionals and the public, are major obstacles to its rehabilitation. However, this medicine is still being sought by the population who cannot afford to bear the consequences of modern medicine.

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