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RESEARCH ARTICLE

EVALUATION OF THE SUPPLY OF ORAL CARE SERVICES IN THE HEALTH DISTRICT OF MBANGA, CAMEROON

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Abstract

Background: Access to oral care is a real public health challenge because dental pathologies affect all social strata, even the most disadvantaged. Knowing that the peripheral level in the health pyramid of Cameroon does not always benefit from oral services, this work proposed to present the offer of oral services in conventional medicine and traditional medicine in the Health District of Mbanga.
Materials and methods: A mixed descriptive cross-sectional study was carried out in the Mbanga health district taking place from April 2021 to January 2022. All dentists and traditional therapists providing oral care were included in the study and having given their consent. To do this, a reading grid and an interview guide made it possible to obtain two types of variables. The qualitative variables were analyzed manually with the color code. While the quantitative variables were analyzed using SPSS version 26.0 software.
Results: Total 13 traditional healers were found and two dental surgeons working in the community of Mbanga were interacted for this study. The dentists were only women with less than a year of experience. The technical platform consisted of a portable dental chair and a dental case. The benefits were essentially curative. The traditional therapists worked in counters or in their vehicles. The majority of the products were decoctions. They treated oral ailments and would refer to the hospital in case of complications. Only a few used products to perform dental extractions.
Conclusion: The offer of services must be within the reach of every individual. However, this offer must be in line with the need.
Keywords: Conventional medicine, Offer of services, Oral health, Traditional medicine.

INTRODUCTION

Oral health, like general health, allows well-being and contributes to the development of the individual in society. It also helps to facilitate the interaction of the individual with those around him[1]. Resolution WHA 60.17 on the plan of action for the promotion of oral health and the integrated prevention of diseases establishes an intrinsic link between the oral health, general health, and quality of life[2]. Oral diseases are commonplace in our society. They are often the cause of embarrassment, disfigurement, social isolation and even death[3]. According to a study on the global burden of disease in 2019, it is estimated that 3.5 billion people are affected by these ailments. Oral disease is generally preventable and shares the same risk factors as non-communicable diseases. The most frequent are dental caries followed by periodontal diseases[1-4]. Dental caries is a chronic multifactorial disease affecting the hard tissues of the tooth. It is widespread and the worldwide prevalence of untreated decay of permanent teeth is over 40%, all ages combined. Concerning periodontal affections, they affect the supporting tissues of the tooth; it is reversible but can lead to the loss of teeth. Nearly 30% of people aged 65 to 74 have lost almost all of their teeth, mainly due to periodontal disease[5].

Oral conditions disproportionately affect individuals. There is a strong correlation between oral diseases and socioeconomic status, this association is observed throughout the life of individuals regardless of age and concerns low, middle, and high income countries. In addition, there is a great disproportionality in the distribution of health professionals and the absence of

adequate health services, especially in rural areas in most countries, which limits access to oral health services[4].

In Cameroon, the document on the 2016-2027 health sector strategy revealed that dental services are available at central and regional level but insufficiently equipped or poorly maintained, in fact, there is one dental surgeon for 87,000 inhabitants[6]. In Cameroon, peripheral level, the services are almost non-existent which often justifies the use of traditional medicine as recourse to oral care.

MATERIALS AND METHODS

Type, site and study population

This was a mixed (qualitative and quantitative) descriptive cross-sectional study conducted in the Mbanga Health District in the Cameroon Coastal Region. This included dentists from health facilities delivering oral health care and traditional healers from the Mbanga Health District taking care of oral diseases.

Inclusion and exclusion criteria

All the dentist and traditional healers providing oral health in the community of Mbanga and have giving their consent were included in this study. Those entire interview was incomplete were excluded.

Ethical considerations

To carry out this study, after validation of the research protocol, was obtained the authorization of the ethics committee of the Faculty of Medicine and Biomedical Sciences of Yaoundé I. After it Authorizations from the director of the District's hospital and the authorities of the locality was obtained.

Collection of data

For this study, an observation grid and an interview guide was used. The observation grid made it possible to give a description of the structure to be presented. The interview guide served as a benchmark to direct the interviews with the participants who were the oral doctor and the traditional healers. The study took place from March 2021 to January 2022.

Data analysis

At the end of the collection, qualitative and quantitative data which were analyzed were obtained. Qualitative data was manually analyzed using color coding. Indeed, the data was taken using a recorder, then they were all systematically transcribed and without sorting in Microsoft Word. The verbal and direct observation data were returned verbatim and by graphs based on the dimension matrix. These were mainly data concerning the services offered and the characteristics of the health facilities.

Quantitative data were analyzed using SPSS software (Statistical Package of Social Science) version 26. This was data presenting human and material resources. They were returned in the form of text, table and graph.

RESULTS

Mbanga District Hospital offer

The Mbanga district hospital has had an operational oral service only since July 2019. It has been gradually equipped and in turn you will be presented with the human resources, the material resources and the services offered in this health facility.

Table 1: Material resources of the service.

Equipments	Name	Application
Furniture	Dental chair	Care and consultation
	Office furniture	General
	Storage cabinet	General
	Dental case	Care
Dental equipment	Scaler	periodontal care
	Curing photo light	OC
	Dental kit	Oral surgery
	Minor surgery box	Oral surgery
Consumables	Anesthesia kit	Anesthesia
	Root canal treatment kit	Endodontics
	Filling kit	OC
	Descaling kit	Periodontology
Other	Sterilization consumable	Hygiene

Human Resources

For this work it was found that the dental office of the Mbanga district hospital currently had two dental surgeons recently assigned to the health structure. Their age range varied between 20 and 30 years old, both were female. These dentists are in their first assignment since leaving school and therefore in their first year of practice. The service is operational Monday to Friday from 8:00 a.m. to 3:30 p.m. on working days and Saturday from 8:00 a.m. to 12:00 p.m. and remains on call all weekend. Each dentist worked for two weeks each month and received bonuses from the health training. This monthly bonus was paid based on service performance. But each dental surgeon being a civil servant benefited from the state salary. The dental surgeons in this hospital were responsible for carrying out oral consultations, performing dental surgery, and maintaining the dental office equipment. The service did not have a dental assistant or technician to accompany the doctors in the administration of care.

Material resources

The dental office of Mbanga was able with the support of the management to acquire dental equipment during the creation of this service after the affection of the dental surgeons. In the Table 1 broad outline what was found during this research work is summarized.

The dental office consisted of two rooms, a treatment room and a bathroom. The District Hospital dental office was newly equipped. There was the possibility of performing general dental surgery. The dental surgeon said to this affects that: "The dental practice is brand new and allows good quality dental procedures to be performed". The devices found were all functional. The dental chair was a portable chair; there was a storage cabinet and a desk. In this same room, there was a water outlet below which was a sink. The service had at its disposal a functional bathroom.

Table 2: Different types of dental office service.

Services	Acts	State
Prevention	Sealant	Not done
	Fluoride toothpaste	Done
	Power control	Not done
Treatment	COE Exodontia Oral surgery Periodontics	Done
Promotion	Countryside	Done
	Education/Awareness	Done
	Brushing kit distribution	Not done
Rehabilitation services prevention	Prosthesis type	Not done

COE: Conservative Odontology and Endodontics

Although there were handpieces to do manual scaling. The service had at its disposal a piezoelectric ultrasonic scaler with several inserts and a key. It had among its functionalities, the endodontic function which allowed to make the canal preparations. The dental kit consisted of the necessary for a dental consultation as for it consisted of the necessary for a dental consultation (mirror, probe, tweezers), the necessary for the exodonties (elevators, forceps, curettes). There were also instruments for the joint and assistant prosthesis and the orthodontic bands. The endodontic kit included the material needed to make the material needed to perform devitalization, so there were nerve shots, pins, files, paper cones, gutta cone, to perform cold condensation.

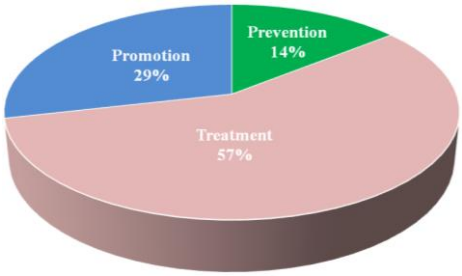

Figure 1: Provision of the dental office of the District Hospital of Mbanga.

For the coronary fillings, there were the different instruments to make the final and temporary fillings, namely the mouth spatula, and the different cutters mounted on the turbine of the suitcase for the cavity preparations. In order to work without pain, local or locoregional anesthesia was performed by dental surgeons. To do this, the latter used the anesthetic contained in cartridges. The dental surgeon said "We often use vials of anesthetics available in pharmacies for more invasive procedures, but generally the cartridges are sufficient for the majority of procedures". The local anesthetics found were xylocaine, mepivacaine and lidocaine. Apart from that, dental syringes and appropriate needles were found to perform anesthesia.

Regarding dental consumables, to carry out scaling the dental surgeon said he used other materials, namely polishing paste, mouthwashes and inserts that were fixed on the handpiece of the scaler. The inserts were changed after each treatment. They also used dental dimples to apply the polishing pad. As for the fillings, permanent fillings were made with glass ionomer cement (CVI) and photopolymerizable composite, so it was found that the etchant and the adhesive which allowed a better grip of the composite. Finally, the necessary for sterilization, it was most often done cold and rarely hot in the population of the Hospital which was found only in surgery. It was used in decontamination and washing tanks with bleach and soap or chlorine and stored in decontamination boxes.

Services

The dental office was very new, so the patients were not very numerous. To this end, the oral doctor said: "we receive an average of twenty patients per month in consultation and not all of them provide the care, generally due to a lack of financial means". In the Table 2, the various services and the state of execution at the Mbanga dental office are presented. At the level of prevention, the dental surgeon declared: "we do not perform any act of primary prevention here at the moment with the exception of dental scaling". So the sealant which refers to the filling of the pits, furrows and pits of the permanent posterior teeth was not done. Fluoridated toothpastes were not systematically prescribed and dietary advice was given after the consultation, generally during oral health campaigns. Concerning the curative, the dental surgeon declared: "Patients generally come when the pain becomes unbearable or when the other means used are unsuccessful". The majority of acts performed in the department were dental extractions and scaling. In oral surgery, it was mainly a question of the management of maxillofacial cellulitis and the management of fractures.

For the promotional component, health campaigns were often organized during which patients benefited from the education and awareness made by doctors. According to the dental surgeon, the dental prostheses were made in another neighboring and more developed city. Only the impression and the placing in the mouth of the device were done in the chair. Patients only requested dentures because of the more affordable cost. The Figure 1 summarizes all the services in the Mbanga district hospital and their level of execution.

This figure shows that the response to prosthetic needs is almost non-existent in this odontostomatology department. But also that the response to treatment needs is already available and is of the first order because the dental surgeon said that he did not receive the majority of patients for emergencies. The cost of

dental procedures varied according to the procedure to be performed. Indeed, the oral consultation was made at 2000F while the extractions were done at 8000F, the same price was attributed to coronary fillings and scaling, while the root canal treatment cost 20000F.

Traditional medicine offer

Traditional medicine occupies a large place in the management of oral diseases, particularly in the Mbanga area. Indeed, studies have shown that in rural areas, ethnomedicine is a much sought-after recourse. Also this work is interested in traditional medicine in the provision of services.

Table 3: Sociodemographic data on traditional therapists.

Variable		0-5 Years	6-10 Years	≥ 10 Years	Total
Sex	Female	3(23.1%)	6(46.2%)	0(0)	9(69.2%)
	Male	0(0)	2(15.4%)	2(15.4%)	4(30.8%)
Age (years)	20-30	3(23.1%)	6(46.2%)	0(0)	9(69.2%)
	31-40	0(0)	2(15.4%)	0(0)	2(15.4%)
	41-50	0(0)	0(0)	2(15.4%)	2(15.4%)
Study	Primary	2(15,4%)	2(15.4%)	0(0)	4(30.8%)
	Secondary	1(7.7%)	6(46.2%)	2(154%)	9(69.2%)
Salary (FCFA)	0-50000	0(0)	2(15.4%)	2(15.4%)	4(30.8%)
	60-90000	3(23.1%)	6(46.2%)	0(0)	9(69.2%)

Human Resources

During this research work 13 traditional healers were interacted. The sex ratio was 2.25. The Table 3 presents the characteristics of the human resources found in the locality during the survey. The average age was 27 years with the extremes of 21 years and 48 years, while the minimum salary received by traditional therapists was 35000F while the maximum salary was 90000F. The majority of practitioners with secondary education stopped before the baccalaureate and learned traditional medicine. The majority had less than 10 years of practice.

Material resources

Among those interviewed, it was noted that the majority of traditional healers worked in open spaces, behind counters or on board vehicles with sound-emitting devices to communicate about their services. And these cars were used as storage places for traditional pharmacopoeia products. Available products cited by traditional healers are presented in Figure 2.

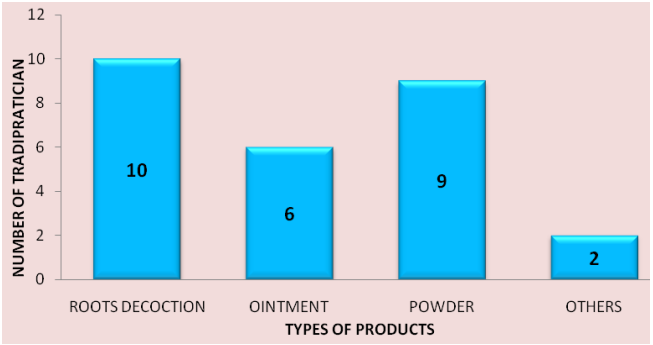

Figure 2: Form of products found in traditional healers.

In this research work, it was found that the products generally found were in liquid form, contained in bottles, white or purple powders, but also balms and ointments. These products were contained in bottles or in plastic bags or paper bags. Some were contained in boxes, or tubes that were offered to patients depending on the pathologies. These contents were made from tree bark, natural essence (clove), dried plants. Especially for oral pathologies, products made from cloves, mango leaves, moringa powders and many others were listed. Some said they associate traditional and conventional medicine, which is why some practitioners found anti-inflammatory such as ibuprofen and diclofenac. It was also noted that the products had various indications so one could find a product that treated several different pathologies.

Services

The pathologies that the traditional healers claimed to treat were tooth decay and bleeding gums. It was found that 84.6% of them said they only treated dental caries. The attendance of traditional healers varied between 10 and 30 patients per month. The majority (53.8%) received about 20 patients per month for oral reasons. Treatments were generally made using traditional products and 84.6% of traditional healers said they only gave products to treat teeth, while some 15.4% said they performed acts such as dental extractions and sometimes incisions. To this end, a traditional therapist declares: "When I want to pull out the tooth, I put my powder here, I leave it to act for 5 minutes and the tooth even jumps once alone". He said he didn't use any instrument just the strength of his fingers.

Moreover, 46.2% of these practitioners said they had good feedback from patients and these patients were only referred when the case seemed serious or the treatment ineffective. It was found that 30.8% of practitioners said they referred the patient when the latter complained of pain on a tooth without a cavity. In addition, it was found that 69.2% of practitioners sent their patient to the District Hospital for better care

when their treatment was ineffective and the case was complicated. Regarding the cost of the products, all the traditional healers said they sold the products at affordable prices. Indeed, they said that the prices varied between 1000F and 5000F.

Some traditional healers (69.2%) found that traditional medicine responds well to oral health problems and is very effective, vast and less expensive than modern medicine, and said they wanted state support to promote this medicine, although some (30.8%) asked for the training and assignment of more dentists in the locality.

DISCUSSION

It was found that for this research work only two dental surgeons assigned to the Mbanga District Hospital. This is explained by the fact that the majority of oral doctors are concentrated in metropolitan areas. This result is consistent with that of Uguru *et al*.,[7] in their work found that the majority of practitioners were found in the major capitals while the rural area did not only had one dentist. But also, Kaboré *et al*.,[8] in their work on the oral care offer in urban areas in Burkina Faso, taking the example of the city of Ouagadougou, found that the city of Ouagadougou concentrated more dentists than the rural area, which does not did not allow certain dental procedures to be carried out due to the lack of a qualified professional. The fact that the dental surgeons worked in turn also presented a difficulty because they found themselves alone to hold the service which could encroach on the quality of the reception or even of the care. This opinion was shared by Diop *et al*.,[9] who in their work in public health facilities in Dakar found that 46.1% of practitioners had the reception of patients managed by a secretary or 21.5% of practitioners said that the reception was managed by a dental assistant. All of the dentists found were female. This result coincides with that of Agbor *et al*.,[10] who found in his work on the oral health workforce in Cameroon conducted in 2015 that the female gender is increasingly represented in the practice of oral medicine. Indeed, he was able to note that 53.4% of dental surgeons in Cameroon are women. He explained that the majority of his wives work in the private sector. The dental office at the hospital had a portable chair. This is not suitable for performing certain acts of dental surgery such as certain dental extractions, because it is unwieldy and does not offer the necessary comfort for both the practitioner and the patient during treatment. The means of sterilization were also approximate because it was necessary to move with the material to benefit from hot sterilization because cold sterilization was not always optimal. In addition, the instruments used to provide care were normally single-use, but they were recycled. There were almost no protective materials for the patient when it came to administering care. These results are similar to those of Diop *et al*.,[9] who in their work encountered the same shortcomings when the practitioners were questioned. Moreover, 32% of them found that the equipment was unavailable and up to 35% of the dentists questioned found the technical platform not sufficiently supplied. He also reported a major problem related to the electricity problem which penalized the work at times. Uguru *et al*.,[7] found that the absence of a technical platform provided is a barrier to access to oral services.

The services available in the dental office of the district hospital were mainly curative. This is explained by the fact that populations generally resort to oral services when the pathology becomes symptomatic and troublesome. The main treatment done was tooth extraction, followed by scaling. Prosthetic care was practically non-existent and prevention was too often linked to health campaigns. These results are similar to those of Diop *et al*.,[9] who found in the research that the majority of care was curative and scaling was the only preventive care carried out in these health facilities. The cost of care was a huge concern when using oral care because the dental surgeon said that the majority of patients were content to pay the consultation fees and were unable to do the care because it was too expensive. However, these costs are almost identical to those given by Uguru *et al*.,[7] in his research work which said that the consultation was around 2000F and encountered the same financial difficulties denounced by his patients. In a study conducted in Ghana in 2015, it was shown that patients spend an average of 80.000F in direct costs for their oral health care[11]. Sangare *et al*.,[12] found after interviewing 960 adults in the department of Dabou that 22% of respondents said they spent 10 times more by going to the dentist than to the traditional practitioner.

The 13 traditional healers were interviewed, all living in the Mbanga area. This result reflects the strong demand for traditional care because the population in rural areas is more rooted in traditional medicine than contemporary medicine. Present work showed that the majority of traditional healers had less than 10 years of experience. In a study carried out in 2015 in Dakar, Kounaté *et al*.,[13] found that 53.4% of the elderly people questioned were comfortable in the use of traditional medicine for management of their oral diseases. Traditional healers said they used various kinds of products to treat oral diseases. They came in the form of decoctions, ointments, balms and had various therapeutic indications. In a study conducted in 2017, Traoré *et al*.,[14] found nearly 40 plants with therapeutic indications among traditional healers. They had identified the analgesic, anti-hemorrhagic actions, some were fighting against halitosis. In addition, Kerfal *et al*.,[15] had found in a research that therapeutic products came in different preparations. Decoctions, infusions, essential oils and poultices were there for this work and a similar study performed by Al- deen *et al*.,[16] in Yemen.

Several traditional healers said that the products were very accessible financially and the products sold between 1000F and 5000F. This result shows the gap between traditional medicine and conventional medicine. These results are similar to those of Sangare *et al*.,[12] who found that the prices of natural products in their study varied between 5000F and 10000F. Benefits in traditional medicine were practically based on herbal

medicine. Very few traditional therapists took action if they did most of it, said they did dental extractions.

CONCLUSIONS

Oral health is part of general health. Also benefiting from the provision of appropriate services would be an asset to improve the quality of life of individuals. This work aimed to present the services offered in a remote area. It emerges that the populations benefit from a dental practice that is not well supplied with equipment and little frequented by the population, but from a more substantial offer in traditional medicine and to which the populations adhere better. The challenge would be to find a balance between the needs and the offer for these populations.

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AUTHORS CONTRIBUTION

DJANGA EMC: writing original draft, conceptualization. **Essomba T:** methodology, formal analysis, conceptualization. **Edo'o VD:** data curation, investigation. **Ndjoh JJ:** editing, data interpretation. **Herve JN:** investigation, conceptualization. **Etounou TM:** data curation, investigation. **Abba-Kabir HM:** critical review, supervision. **Essi MJ:** methodology, formal analysis, conceptualization. The final manuscript was read and approved by all authors.

DATA AVAILABILITY

The data and material are available from the corresponding author on reasonable request.

CONFLICTS OF INTEREST

None to declare.

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