ETHNOTHERAPY OF DIABETES PATIENTS AND COVID-19 BARRIER MEASURES IN CAMEROON

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Abstract: *The main purpose of this article is to examine the impact of Covid-19 barrier measures the adequate care of diabetic patients. This study is qualitative. Medical anthropology research techniques were used to collect field data. Using interview guides, the information collected from diabetics, medical staff and people close to the patient are analysed using content analysis method and following the "sickness, illness, disease" structuring. Barrier measures and lifestyle changes (diet, physical training, etc.) are closely linked to inadequate diabetes care. Precariousness is greater when families are forced to strictly respect barrier measures introduced in the fight against the spread of Covid-19. Interventions focused on taking into account risk factors (sedentary lifestyle, inappropriate diet.) are not obvious during periods of confinement. Barrier measures (social distancing, wearing masks, hand washing) are not respected at all, since the presence of close relations plays an undeniable role in psychological and moral comfort in all aspects of diabetic care.*

Keywords: Covid-19, Diabetes, barrier measures, confinement**.**

1. Introduction

At the start of the coronavirus 2019 (COVID-19) pandemic, diabetes was identified as a factor associated with severe forms, and a prognostic factor. Numerous studies have focused on this relationship and have been able to clarify a number of elements, impact: comorbidities associated with diabetes, phenotype of diabetic subjects at risk of severe forms, glycaemic control, COVID-19 on diabetes risk. This article is part of what is commonly referred to as the "Post-COVID-19 article".

In developing countries, around 90% of new cases of diabetes are attributable to lifestyle. People with diabetes in a medically fragile context (cardiac, pulmonary or renal) are more at risk to develop a severe form of COVID-19, unlike those with no other health problems. Poor households are the most affected by chronic non-communicable diseases as diabetes. Yet health care coverage is still limited, and medical costs are largely borne by families. In relation with hospitals, compliance with barrier measures remains a major public health challenge in Cameroon, especially in a health context where there is still no emphasis laid on the Covid-19 pandemic and diabetes.

This article is a point of attraction, or a piece of the veil, whose main aim is to examine the impact of Covid-19's barrier measures on the proper care of diabetes patients who are a category of patients that carry on the one hand, an incurable but controllable non-communicable chronic disease: diabetes and on the other hand, an extremely contagious and deadly disease which, in strict compliance with barrier measures can be treated: COVID 19. On the sidelines of biomedicine, this article, seen from an anthropological perspective, examines the impact of Covid-19 barrier measures on the treatment of diabetes. What is the interest of this article at a time when we tend to believe that COVID 19 is entirely eradicated given the abandonment of the barrier measures introduced by the Cameroonian government? Even if the attendance of certain places such as public buildings (Morgues, Banks, international conferences, etc.) where wearing a mask is still required, shows evidence that the COVID-19 pandemic has left its mark on the minds of the people who experienced it.

2. Methodological framework

This is a qualitative study. Medical anthropology research techniques were used to collect field data in the city of Yaoundé, on the basis of "illness, sickness, disease". Semi-structured and informal interviews were conducted with COVID-19 prevention and care service

providers, diabetics and their families and friends. Qualitative data were transcribed, typed in MSWord, then analysed using Quivy Campenouht's content analysis. Primary data processing consisted in highlighting the article's salient themes. At the same time, primary data were collected simultaneously with secondary data. As Covid-19 is a new disease, there is little scientific literature on this pandemic and diabetes. Thus, the literature review focused on reports, articles, journals, documentaries, etc., and social science literature, mainly anthropology. The field survey took place from June to October 2022. During the peak period of the Covid-19 epidemic, when the Cameroon Government has decreed confinement, the survey focused on compliance with the practice of barrier gestures in health facilities, public and private administrations, large gatherings, homes; compliance with barrier measures by diabetics, their families, friends and healthcare professionals specializing in diabetes care. Also, we have experienced Covid because we have come into contact with the coronavirus. In fact, family dynamics explain decisions on whether or not to comply with barrier measures, as well as social roles and power relationships relating to the health of others: Who decides on the purchase of hydroalcoholic gel, the installation of a water point for hand-washing, the number of meals, etc.? The life stories of diabetics who were victims of COVID-19 provided insights into their individual and collective experiences of barrier measures during this period of restriction.

In the quest for a scientific basis, the data were analysed on the basis of Jodelet's (1989) theory of social representations. This provided a synoptic view of the impact of barrier measures on the lifestyle and behaviour of diabetic patients at risk of exposure to COVID-19, as well as information on the knowledge, attitudes and practices of diabetics exposed to COVID-19, healthcare staff, their relations and community players.

From an ethical point of view, respect of to the rule of art has brought assurance that informants have accepted to submit to the investigation without constraint. Protective measures are focused on ethical requirements. An informed consent form was submitted to each participant for signature.

3.Results of the study

The results are of several kinds.

- *Population knowledge of COVID-19 and diabetes*

Worldwide, and mainly in Cameroon, community members are aware of Covid-19 through awareness campaigns and communication in the media and social media. Emphasis is placed on barrier measures, the principal means of preventing transmission or eradicating the scourge: respect for barrier measures, wearing a mask in public places, correct and systematic hand-washing, respect for social distancing, limiting groupings of people (no more than 50), burials in strict privacy, prohibition of cultural ceremonies (mourning, funerals, weddings, etc.). Toll-free numbers have been set up to enable people to contact specialized health professionals to report any suspicious cases in the community.

- *COVID-19 and diabetes: two entirely opposed diseases*

Respondents were not aware of the risks of COVID-19 for people living with diabetes. This is due to the fact that the coronavirus is a new disease whose aspects are still under study. These shortcomings are the responsibility not only of community members, but also of healthcare personnel, scientists and others.

Diabetes is a chronic, non-communicable disease that cannot be cured but can be controlled. In contrast, COVID-19 is a contagious curable pandemic although it is poorly known by healthcare professionals. Health professionals are general practitioners, most of whom have no specialized training in the joint management of diabetics who have been tested positive, or who are at risk of contracting COVID.

A number of measures are recommended to control diabetes. Strict respect of hygiene and dietary rules, and barrier gestures as frequent ventilation, repeated use of hydroalcoholic gel, wearing of masks, social distancing, systematic taking of medication; regular checking of the patient's blood sugar levels. According to specialists, "*if blood sugar levels are high (over 2.50*

g/ml), it's important to check that the patient isn't making acetone. If so, contact a healthcare professional as soon as possible, as the patient is insulin-deficient, and vaccinate him or her against the flu. These measures are also prescribed in case of Coronavirus".

Hypoglycaemia being a drop in blood of sugar level, it can affect the quality of life of diabetics and their families. It is important to be aware of the symptoms, treatment methods, causes and preventive measures. In view of the barrier measures associated with COVID-19, diabetics are still not surrounded by close relatives. The isolated patient cannot perceive the symptoms or realize that he is suffering from a fairly viral form of diabetes. Therefore, we must lay emphasis on COVID-19 and the risks for people living with diabetes. During periods of confinement, movement and visits were restricted, and patients who were tested positive quarantined. As a result, it was not at all easy for families to monitor hypoglycaemia in diabetics.

- *Involvement of various stakeholders in the fight against COVID-19*

The Cameroonian government supported by international organizations has announced the provision of preventive inputs and care for Covid-19 patients. This includes funding research, supplying specialized treatment centres with improved drugs and essential equipment, welcoming patients to CTAs, creating a national Covid-19 care program, making drugs available, and ensuring that the care package is free of charge for all patients. Barrier measures as a Cameroonian response strategy have seen the strengthening of community involvement, through the accompaniment of institutional partners and international organizations by local authorities in their respective communities, awareness-raising in their communities; the granting of donations by the elite: buckets, mufflers, hydro-alcoholic gel, soap, etc., to encourage families to respect the law, to respect barrier measures and hygiene rules on a daily basis, to combat misinformation, to ensure the safety of health personnel, and to inform people about the advantages and disadvantages of vaccination against Covid-19.

However, the level of poverty of the population acutely poses the problem of financing care in the event of a combination of diabetes and COVID-19; the precarious living conditions of the populations could not allow them to submit to strict compliance with barrier measures.

- *Non-compliance with barrier measures prescribed by Ministry of Health (MINSANTE)*

Effective application of these measures improves the epidemiological picture. Despite efforts to raise awareness, there has been a lack of interest among diabetics who have been tested positive for Covid-19 because it does not take into account the joint treatment of the two diseases. Non-compliance with barrier measures is linked to the lack of rigor in awareness and communication campaigns for behaviour change. According to informants, this situation can be observed in front of supermarkets, where security and law enforcement forces no longer oblige users to wash their hands, or in the non-existence or gradual disappearance of hand-washing points. For the population, this situation is the evidence that Covid-19 has been partially or totally defeated. For some others, Covid-19 is nothing but a pure invention of Western countries to cause harm.

- *The healing processes for diabetes patients and COVID-19*

We notice the shortage or almost non-existence of health professionals/auxiliaries specialized in the simultaneous management of the two diseases; lack of equipment for the management of serious cases; difficulties for patients in respiratory distress to access some geographic areas; the demotivation of community field agents who do not always have the substantial financial resources to carry out awareness campaigns in the field.

The material and immaterial support given to families affected by the pandemic is the evidence of the community solidarity. In addition, patients and their next of kin turn to informal healthcare providers to follow different therapeutic pathways: street medicines, traditional pharmacopoeia, underqualified healthcare auxiliaries working illegally in search of their daily bread. They neither perform laboratory nor blood sugar levels tests, but give infusions to patients. Such practices have disastrous health consequences and reinforce chemoresistance.

Customary, there are three categories of traditional medicine practitioners in Cameroon. Traditional healers who are skilled in ritual practices and use clairvoyance to diagnose the ailment before proceeding with treatment. Herbalists know a great number of medicinal plants handed down from generation to generation. They propose the same dosage to treat both illnesses. Naturopaths believe that, alongside biomedicine, they have the drugs to treat COVID-19 and diabetes. They are in touch with the components of nature on which they act to treat disease. Observation of the different practices reveals confusion between the three categories. They all claim to be health agents, and diagnose illnesses by representing pathologies according to their knowledge.

Traditional practitioners preserve the cultural assets linked to the cause, manifestation, designation and management of diseases. They are closer to biomedical health professionals. It is in that context that we can speak of "illness, sickness and disease", to the extent that care pathways are governed by popular systems of interpretation of illness. Informants also mention the strong practice of self-medication among populations or street pharmacies where pharmaceutical products are available over the counter along the roads and near pharmacies or health centres. These pharmacies offer the following advantages: retail sales, low prices, treatment advice from the salesperson who often has no training in medical services; the possibility of discussing prices; equivalence of medicines; speed of service and availability of equivalent medicines. In the absence of financial means, people use whatever medicines are available, including expired tablets, bitter tree bark and "leftover" medicines for old diseases. In terms of geographical accessibility, the homes are far from the health centres, where stocks of essential medicines regularly run out. Moreover, people sometimes have to travel long distances by motorcycle. Barrier measures, however, prohibit movement and promote social distancing, even on public transport. A Covid patient who suffers diabetic seizures is obliged to resort to available therapeutic practices, to the detriment of compliance with barrier measures.

On the economic front, people are unable to follow a treatment through to its end because of the very high cost of treating both diseases, which sometimes involves hospitalization or quarantine. Recurrences are frequent, and a return to the health centre for the same disease is obvious.

Culturally, the populations are strongly rooted in their traditions. For these supporters, there are several ways to treat diseases without resorting to biomedicine. Their lay knowledge leads them to opt for medicinal plants or to consult traditional practitioners. The Covid 19 pandemic has for instance, led to the development of a number of potions, fusions and traditional medicines. People have confidence in medicinal plants, which reflect their identity and come from ancestors who always give them guidance on their health, ailments and fate.

Irrespective of social rank, the respondents use alternative medicine, where illnesses are associated with specific representations. Nonetheless, they differ in their therapeutic practices, and believe they have the same medicine for Covid-19 and diabetes for centuries.

Since pharmaceutical products are sold over the counter by the roadside and close to pharmacies or health centres, and due to a lack of financial means, people use the medicines available in "street pharmacies", where everything pleads in their favour: tablets, even expired ones, bitter tree bark and "leftover" medicines for old diseases, retail sales, low prices, the possibility of discussing prices, rapid service and availability of equivalent medicines, and the advice of the salesperson who has no medical training. There are a multitude of medicinal plants in the traditional pharmacopoeia to combat COVID-19 and diabetes, commonly known as sugar disease. In popular imagery, any bitter plant eliminates sugar levels or cleanses the blood of diabetics. These practices were not easy to comprehend under confinement. As a result, to achieve this, populations were forced to disregard barrier measures.

- *Hand washing*

At the start of the pandemic, when awareness was high, the practice of hand washing was respected. Users were obliged to wash their hands on a daily basis. Currently, in the health facilities we visited, despite the availability of handwashing points, the practice of handwashing is no longer on users' agendas. Ongoing awareness-raising campaigns could help to alleviate this lack of interest.

Overall, the lack of communication is reducing protection against Covid. Wearing a mask is no longer compulsory. The practice of hygiene measures is encouraged within the DS through posters, but not required of users. According to informants, hand-washing was a reality when they were forced to do so. The practice of using running water in communities, public spaces, schools, public buildings, some hospitals and homes has become optional. Indeed, since the lifting of government restrictions in March 2020, commercial spaces and places providing various services have seen an almost systematic disappearance of handwashing points.

- *Working environment for diabetics under COVID-19 confinement*

It was risky for diabetics to keep on working during the period of COVID-19 confinement. There is no government financial support for people who decide to voluntarily withdraw from their workplace for fear of infection. However, they can try to reach an arrangement with their employer. Although diabetes has been clearly identified as a risk factor for severe COVID-19 and mortality, there are additional risk factors in the diabetic population. Understanding these risks could help manage diabetics effectively and advise clinical services.

When a diabetes patient is tested positive to COVID-19, measures should be taken in accordance with symptoms. If they have difficulty breathing, feel intense fatigue or have very high blood sugar levels, they should go to hospital. "*Hospitalization is mandatory to limit kidney failure and the thrombogenic risk, that is to say the risk of developing clots, is very high in the case of COVID-19. If the diabetic patient suffering from COVID-19 only presents flu symptoms, he must monitor his blood sugar and stay confined at home*" recommends the diabetologist (Interview conducted on June 14, 2022).

- *Shortage of qualified healthcare personnel in diabetes and COVID-19 care*

Major difficulties include interactions with patients by telephone; close follow-up of patients at home remains problematic, given positive tests after several days of treatment; the lack of qualified staff; the lack of infrastructure and equipment causing delays in the management of COVID-19 cases; perceptions relating to the non-existence of the disease; and difficulties in obtaining medicines, which outpatients say are expensive.

Among the main obstacles that prevent the sustainability of barrier measures, field survey reveals religious beliefs, the stigmatization of people who attempts to respect the measures, health problems and the specificity of activities performed by some workers (transporter, sex worker, health personnel...). At the individual level, purchasing power, people's mind, representations linked to the illness, socio-cultural factors, the persistence of gatherings (meetings, funerals, associations) in small spaces without physical distancing. According to, people in the community, the government is to blame for this failure to comply with barrier measures. They believe that it should not talk about compliance with barrier measures to a very deprived people who must fight daily to survive. Unlike in Western countries, no provision has been made for either financial assistance or set up support measures for the populations. Moreover, in a context where economic activities are slowing down at community level, school and university calendars are being disrupted, and attendance at places of worship, markets, leisure facilities, etc., is down, there are no measures in place.

Consequently, the systematic abandonment of compliance with barrier measures is interpreted by most informants as the consequence of the implementation of support measures for people with diabetes, whether or not they have been tested positive. The fact that

compliance with barrier measures is not demanded overnight has led to controversy about the real existence of the disease.

Coronavirus 2019 (COVID-19) affects individuals in different ways. Most infected people develop a mild or moderate form of the disease and recover without hospitalization. Symptoms include fever, cough, fatigue and loss of smell or taste, sore throat, headache, aches and pains, diarrhoea, skin rash, discoloration of fingers or toes, and red or irritated eyes. It is imperative to be consulted by healthcare professionals at the same time as the diabetes doctor before travelling, if you have serious symptoms such as difficulty in breathing or shortness of breath, loss of speech or motor skills, confusion or chest pain. Hence the need for private means of transport, or failing that, the easiest and most practical choice: traditional medicine. Economically, people are unable to afford treatment during peak epidemics of these two diseases, given the high cost of the entire treatment package. In the event of serious illness, patients cannot accept hospitalization and stop treatment as soon as they feel relieved, so that recurrences are frequent and a return to the health centre for the same illness is obvious. From a cultural point of view, people prefer returning to medicinal plants treatment based on lay knowledge or being consulted by a specialist of the field without going through biomedicine or implementing barrier measures to movement, grouping and distancing. This trust reflects their identity and creates a link with their habits and customs, in communion with the ancestors who always give them guidance on their health, ailments and fate. This confers the socio-cultural character of the disease. In fact, it is not just the patient who suffers but also, the patient's environment. The African concept of illness is assistance. To the point where people separate or become enemies only because during the period of illness, the patient has not been visited by so-and-so, or a third party. The kind of behaviour that goes against the confinement of the Covid 19 pandemic.

- *Diabetes-related complications of Covid-19*

A common cause of diabetes-related complications is too much glucose in the blood. If blood glucose levels remain too high over time, this has a damaging impact on several of the body's organs, principally: the kidneys (nephropathy), the eyes (retinopathy), the neurological system (neuropathy) and the heart (heart attack). Diabetes is now recognized as a chronic disease that cannot be cured, but can be controlled. It is characterized by blood sugar levels above normal values. Usually, blood sugar levels are maintained within the normal range thanks in part to insulin, a hormone produced by the pancreas. Nowadays, diagnostic capabilities exist, although the quantity of reagents, as elsewhere, could be a challenge.

- *Reinforcing barrier measures for people living with diabetes*

Barrier measures need to be reinforced for people living with diabetes, as they are at greater risk of developing severe symptoms and complications if they contract COVID-19. This can be explained by the fact that viral infections (COVID-19, influenza, respiratory tract infection) can be more difficult to treat in people living with diabetes due to fluctuations in blood glucose levels, particularly if they are often high.

Contracting COVID-19 can greatly affect diabetes management, especially in people treated with insulin. The result is hyperglycaemia. While it is important to contact your pharmacist or physician to find out if medication adjustments are necessary, some medications can be temporarily discontinued because of barrier measures. For example, if you are unable to go to your doctor for treatment in the middle of a crisis, because you must not move beyond 6 p.m. in order to respect the curfew imposed by the government, this can be life-threatening for diabetics.

The WHO recommends quarantining these people at home. However, this measure is difficult to implement. In fact, unlike the situation in North America and Europe, a large proportion of our populations live from day to day, and have to find the means of subsistence

on a daily basis. For some, staying in quarantine is impossible in terms of financial compensation.

To stem the spread of COVID 19, community members had to play an important role in following the following hygiene rules: Wash hands with soap whenever possible; Avoid touching eyes, nose and mouth, which are entry points for the virus; In the event of a cough or sneeze, it is advisable to cover mouth and nose with the bend of the elbow or with a handkerchief, then dispose of the handkerchief immediately afterwards in a closed garbage can, and wash hands with a hydro-alcoholic solution or soap and water. You should also avoid close contact, especially with people who have been in contact with a confirmed case or a person from a country affected by the coronavirus. Avoid large gatherings of people, as they increase the risk of contamination. Protecting yourself also means protecting others.

- *Perception of hydroalcoholic gel*

Many people still stereotype the use of hydroalcoholic gel. On the pretext of the lotion's proven or presumed side effects on the skin, the use of hydroalcoholic gel to disinfect hands is in most cases disfavoured in favour of hand washing considered less harmless. Superstores are content to have security staff pour a drop of hydroalcoholic gel into the palm of their customers' hands, which, in popular imagery, is nothing more than high-capacity alcohol, not to be used frequently for fear of damaging the hands. And given the fragile nature of diabetics' skin, this solution is not very suitable.

People from countries with an active outbreak of the epidemic should place themselves in voluntary quarantine, i.e., limit their movements and contact with their neighbourhood, and be able to detect the first symptoms and report to the relevant health authorities. With regard to the level of community involvement, both formal and informal sector stakeholders have been mobilized in the fight against COVID-19. At this level of reflection, we can decry the measures concerning the simultaneous care of diabetes.

- *Community resilience*

From an anthropological point of view, the forms of resilience experienced by communities faced with the demands of respecting barrier measures lead us to question the combined control programs when a person suffers from a curative pandemic such as COVID-19 associated with an incurable disease like diabetes. It revealed profound socio-cultural dysfunctions that need to be understood and analysed in depth. At the start of the pandemic, there were major problems in humanizing care for COVID-19 patients. Anthropologically, this distancing contributed to weakening or breaking physical contact which is an essential dimension of humanizing care. Indeed, in popular imagery in the Cameroonian context, any disease with a strong media connotation, as it was the case with COVID-19, borders on pure publicity. A diabetic who has been suffering from this incurable disease for decades wonders why it is not covered by the media. In a global context of health system fragility, where the quality and quantity of health professionals are inadequate, and where the infrastructure is sometimes proven to be inadequate, the humanization of care for COVID patients, including the related barrier measures, has been perceived as a Western invention designed to weaken African solidarity, hence the misperception of the barrier measures by the target populations.

The effectiveness of COVID-19 treatment is linked to acceptance of the disease. But some people don't believe in the existence of COVID-19. Those who are tested positive opt for other therapeutic routes, to the detriment of biomedical therapy, in order to avoid the stressful treatment: isolation, eating fruit, etc. Identifying the corona virus with the simple flu from which Africans usually suffer, traditional herbal pharmacopoeia or a "grandmother's" potion would put an end to it.

- *Community perceptions of barrier measures*

In the process of caring for their patients, members of the community refused to accept quarantine, which they perceived as stigmatizing them and raising various issues linked to the

problem of self-representation. The institutional requirements for treating COVID-19 death in the Cameroonian context were dehumanizing. They ran counter to the communities' socio-cultural and religious aspirations, resulting in scenes of tension and open conflict, sometimes bloody, between the institutional stakeholders and the victims' families.

In addition, compliance with barrier measures lost its vitality in households and neighbourhoods where deaths from covid-19 were not known. In the Cameroonian context, a diabetic cannot be quarantined by family and friends under the pretext of respecting barrier measures.

- *Wearing masks and social distancing*

At the start of the pandemic, social distancing and the wearing of masks were required. Not being common practice, it is difficult for a people deeply rooted in tradition to discard certain habits and customs overnight in order to meet Western standards. In public services, where compliance with these measures is required, their application is not absolute. Service providers and users alike sometimes ignore, without being bothered, the requirements relating to barrier measures indicated on notice boards at the entrance to offices. As people are not reading-minded, they don't pay much attention to them. They are only interested in services rendered within the prescribed time limits.

Thus, the response to COVID-19 at community level had more of a profit-making connotation than the fight against the pandemic. For example, at the start of the pandemic, face masks were made from fabric or plastic, and sold at relatively low prices. Today, the drastic fall in the price of imported masks has outstripped artisanal production. Locally-produced hydro-alcoholic gels have flooded the market. Added to this are a host of herbal teas made from culinary products and traditional pharmacopoeia.

The messages addressed to the communities concerned the perception and prevention of the disease, and compliance with barrier measures. In the awareness-raising sessions, no mention was made of the differences and similarities with diabetes.

- *Instant appropriation of barrier measures prescribed by the WHO and the Cameroon government*

As soon as the pandemic broke out, it was not easy to instantly adopt the barrier measures prescribed by the WHO and the Cameroon government. It was only with a little hindsight that people began to adopt them: social distancing and the wearing of masks in relation to messages on morbidity and mortality relayed by the official media, social networks and rumour (sidewalk radio). The survey shows that, contrary to preconceived ideas, positive cases of Covid-19 are accompanied by solidarity on the part of families, friends and communities. Acceptance of cohabitation with this pandemic is becoming increasingly widespread. Particular attention is being paid to people suffering simultaneously from COVID 19 and diabetes. Hence the need to explore family involvement in the care of diabetics testing positive for COVID 19.

- *Community and family as important pillars of the psychological support network in the care of diabetic patients with covid-19*

The family plays a central role in the care of diabetic patients with covid-19. Although the disease is often seen as a fatality, the family is the main shield on which patients can rely to find the psychological strength they need to overcome the ordeal imposed by their situation. This support is even more significant when the patient is receiving treatment at home. In some cases, the onset of illness is an opportunity to strengthen the grieving family's attachment to the religious faith. Last but not least, this support from the family kinship also takes place at a distance when some of the members are not in the same locality. Incessant telephone calls are made daily to encourage the patient, letting him know that he is going to defeat diabetes.

The community is the other important pillar of the patient's psychological support network. Depending on their social affinities, sufferers receive comfort from friends, colleagues

and other acquaintances via social networks and vicarious messages. Through this constant attention, the community becomes the patient's second family. This attention is explained by the duty of solidarity, which is still one of the fundamental principles of community life in all African societies. However, while it is true that community support is a given, some patients advise their relatives not to divulge their state of health outside their immediate circle, and even better, to limit home visits. This strategy is doubly beneficial, because it reduces the risk of contamination, while reducing the extent of social stigmatization.

- *Experience of the disease by diabetics with or without a positive test for COVID-19*

Social support (family, friends, healthcare personnel) is a determining factor in the experience of the disease by diabetics, whether or not they have been tested positive for COVID-19. The more support patients receive from those around them, the more (psychological) strength they find to cope with the disease. Social mobilization around the patient which is a particularity of the identity of Cameroonian communities constitutes one of the first medicines against the disease. In this context, the patient does not face the disease alone. He is supported by those closest to him. We no longer speak of the sick person in the "singular" sense, but of the sick person in the "plural" or "community" sense of the term.

Barrier measures and lifestyle changes (diet, physical activity, etc.) are closely linked to the lack of adequate diabetes care. Precariousness is more accentuated as families are forced to strictly respect the barrier measures introduced in the fight against the spread of Covid-19. Interventions focused on taking into account risk factors (sedentary lifestyle, inappropriate diet, etc.) are not obvious during periods of confinement. Barrier measures (social distancing, wearing helmets, etc.) are not respected at all, as the presence of family and friends plays an undeniable role in providing psychological and moral comfort in all aspects of diabetic care.

It is important to respect the 4 pillars of balance, because living with diabetes means developing a lifestyle that helps control the disease. According to biomedical experts, the focus should be on care and treatment (medication and insulin, self-monitoring, hypoglycaemia, hyperglycaemia, weight management, body care, natural health products, testing and follow-up), diet, physical activity, psychology (adapting to diagnosis, stress, family and friends, mental health, testimonials).

People with diabetes are advised to eat well to achieve better glycaemic control. To ensure adequate nutrition, they should eat three balanced meals a day, and avoid skipping them. Meals must therefore be taken at specific times. However, field results reveal that this is a rather delicate situation in the midst of the Covid 19 pandemic. In terms of barrier measures, confinement is not conducive to strict compliance with these recommendations, given the degree of poverty in households, it is not easy for healthy people, even less for diabetics, to eat properly. During the period of confinement, all income-generating activities suffered a drastic financial downturn. Still, no specific plan has been drawn up for people with diabetes to earn enough money to buy the foods they need for their nutrition. Not only is it difficult for people with diabetes to comply with nutritionists' prescriptions, i.e., to submit to a proper diet due to a lack of financial resources, they are also forced to adopt barrier measures that slow down all income-generating activities.

According to this specialist, "*In a population hospitalized for COVID-19, a third of whom are diabetics, age is a common factor that cannot be influenced, unlike weight control linked to a balanced diet, sufficient physical activity and a healthy lifestyle*" (Interview conducted on June 19, 2022). Diabetics are obliged to control their weight. However, with the abrupt cessation of all activities during the confinement of parents and pupils who no longer attend school from March 2020 due to the rapid spread of the disease, families have seen their consumption patterns change. As a result, the number of daily meals has multiplied. The fact that schoolchildren are at home means that householders have to prepare large quantities of food several times a day. As a result, people with diabetes not only run the risk of contracting the Corona Virus, but also of falling prey to obesity.

- *Covid-19's impact on the cost of living*

Patients are monitored not only during treatment at the health facility, but also in the community. At the same time, measures are taken to mitigate stigmatization and enforce respect for Covid-19 patients. The Covid-19 was psychologically rejected by the population, who considered it a pure invention. On this basis, it was impossible to gather information about the various actors involved in the therapeutic and community management of the disease. However, some data collected from health service providers enabled us to better circumscribe the elements related to violence surrounding the care of Covid-19 patients.

Generally speaking, the weight of socio-cultural factors and poverty are the main bottlenecks, whatever the survey area. Many socio-cultural factors influence compliance with barrier measures. Indeed, some people's standard of living would not allow them to buy one or two mufflers a day. And if we have to take into account the diabetes care from which the Covid patient suffers, it is quite obvious that the population cannot take into consideration the barrier measures.

- *Socio-cultural practices favourable to the transmission of COVID-19 in relation to Diabetes*

There are a number of socio-cultural practices that are conducive to the transmission of COVID-19. When a family has a diabetic to care for on a daily basis, even if only in terms of nutrition, it is obliged to go to the market constantly to stock up. Within the markets, the results of the survey reveal that social distancing is not respected, and neither is the wearing of masks. Public transport is one of the main factors contributing to the rapid spread of the virus. Also, the gathering of dozens of people always takes place without respect for barrier measures (mourning, marriage, baptism). According to the respondents, barrier measures are very difficult to respect. Few people stop at the corners where buckets are placed for hand-washing. No specific measures have been taken for people suffering from COVID and diabetes.

According to respondents, barrier measures are very difficult to comply with wearing masks is a major constraint preventing those who wear them from breathing normally. Some people admit they can't keep their nose in the mask for long because they can't stand it. However, those questioned acknowledged that simply washing hands was not enough to prevent the transmission of Covid-19.

- *Factors favouring the relaxation of barrier gestures*

The most frequent symptoms of Covid are fever, cough, fatigue, loss of smell or taste, while the least frequent are sore throat, headache, aches and pains, diarrhoea, skin rash or discoloration of fingers or toes, red or irritated eyes. However, the patient may present severe symptoms such as difficulty in breathing or shortness of breath, loss of speech or motor skills, or confusion and chest pain. At this stage of the disease, patients are advised to consult a healthcare professional immediately. However, with barriers in place that limit movement, even if a doctor or health centre is contacted by telephone, it is not easy for the patient to get in touch with his or her attending physician.

However, in the midst of the Covid period, when the entire population is required to comply with barrier measures as confinement and travel are restricted. Moreover, we live in a context where precariousness and poverty levels prevent a large number of the population from affording this luxury. Most have to go out every day to get enough to eat. And yet, if a diabetic has to stop working, he or she will never be able to meet these requirements.

4. Discussion

In diabetics, we observe, on the contrary, a more or less remarkable increase in fasting blood sugar (hyperglycaemia: 1.2 per thousand at least) and a more remarkable rise in it after meals (1.4- approximately 1.6 per thousand). The value of hyperglycaemia certainly gives us a measure of the severity of the disease: we speak of mild diabetes when glycemia oscillates

between 1.2 and 1.8 per thousand, of moderate diabetes when it varies between 1.8 and 2.5 per thousand, and of severe diabetes when fasting glycemia permanently exceeds 2.5 per thousand. The essential data, of fundamental importance for diagnosis, is the determination of the amount of glucose in the blood (glycemia). Normally, fasting blood glucose levels hover around one per thousand (between 0.80 and 1.20 per thousand), with a slight rise (up to 1.30 per thousand) after a meal.

Living with diabetes does not increase the risk of contracting COVID-19, but does potentially increase the risk of developing severe symptoms and complications if COVID-19 is contracted. The most common complications are pneumonia and acute respiratory distress. In some cases, COVID-19 can lead to death. People living with diabetes are at greater risk of developing severe symptoms and complications if they contract COVID-19, as viral infections (COVID-19, influenza or other) can be more difficult to treat in people living with diabetes due to fluctuating blood glucose levels, particularly if these are often high.

Covid-19 has an undeniable impact on the care of diabetics under insulin, for example. In the context of biomedicine, it is always advisable to contact a healthcare professional, in this case a doctor, to find out whether a medication adjustment is necessary, or whether certain drugs need to be temporarily discontinued. Diabetes is one of the most frequently reported comorbidities in COVID-19 patients. Diabetes does not appear to increase the risk of contracting COVID-19. Although diabetic patients are considered to be at greater risk of infection, recent studies have shown that these are mainly fungal and bacterial infections, particularly soft-tissue infections, urinary tract infections and community-acquired pneumonia (especially pneumococcal). Viral infections, such as seasonal flu, are not usually more frequent in diabetic patients than in the general population. In the case of influenza, however, diabetes is recognized as a risk factor for developing a severe or critical form of the infection.

There are a number of factors to be taken into account when dealing with a disease or pandemic, in this case COVID 19 and diabetes. The economic context refers to the economic institutions, norms, values and rules in force, the positioning of the various players in the economy, and production, distribution and consumption activities. What matters is the degree and modes of state intervention in the economy, the cycles of growth and decline in economic activity, job creation and loss, the effects of market globalization, but also the cost of consumer goods and marketing practices, all of which influence a society's way of life and standard of living. Yet, in the fight against COVD 19, the Cameroonian government has instead introduced restrictive measures that run counter to all the above: confinement, systematic disruption of activities for some who would have to move from one town to another in search of gain to be able to meet the family's health needs.

Diabetes is a chronic disease that cannot be cured, but it can be controlled. Therefore, to live with diabetes, the patient should develop a lifestyle that enables him or her to control the disease while achieving full self-fulfilment. In this respect, diabetes sufferers are advised to eat well. A well-balanced diet can help considerably in achieving adequate glycaemic control. Dietary recommendations for diabetics are similar to those for the general population. For example, diabetics must eat three balanced meals a day. Skipping meals is not recommended. In other words, meals must be taken at regular times.

The demographic context relates to the particularities of a population, such as fertility, age and gender distribution, and ethnic diversity. It also concerns population movements such as the rural depopulation, suburban growth, the gentrification or impoverishment of certain neighbourhoods, and immigration. Barrier measures put a stop to population movements during COVID 19.

The social and cultural context refers, among other things, to the predominant norms and values in a society, religious practices, gaps between social groups, the intensity of collaboration or competition between community members, and phenomena such as racism or sexism. Social distancing as a barrier measure has instead created the deconstruction of this collaboration between family and community members. So, in times of confinement, we

couldn't really talk about "illness, sickness and disease", but about the patient's experience of illness. By experience, Cameroonians know that an illness such as jaundice (the name Africans give to icterus) or haemorrhoids is best treated by a traditional doctor. This is what Mbonji E. (1993: 329) means by "horizontal complementarity", referring to illnesses that can be treated both by the doctor and the healer. He mentions some of these illnesses: hypertension, stomach ulcers, cirrhosis, constipation, sexual asteria and asthma.

As we have seen from statistical studies, the number of diabetics is rising steadily throughout the world in general, and in developing countries in particular. This increase calls into question the efficacy of the drugs used to treat it, notably insulin and the other specific medications used to curb the disease. While insulin treatment does have its advantages, there are also a number of recognized drawbacks. In the past, according to A. Saponaro (1973), and there is no evidence that this has changed today, the accidents that have occurred following the use of insulin are attributable to gross errors of prescription or administration. Imbalances between insulin doses and the amount of carbohydrates in the diet, and poor glycaemic control, are the least acceptable.

The diabetics we interviewed admit that they sometimes abandon their hospital beds to receive potions from traditional healers, or go to church to pray for healing. But the sick's quest for care begins at home. Diabetes is a disease that can be cured with medicinal plants. In the field of diabetes, these multiple recourses reveal a health sector in the throes of change, where disease and health, science and experience, ethics and aesthetics, values and morals, economics and politics, rights and duties, public and private, are intertwined. In the face of so-called conventional medicine, the renewal of this phenomenon has been structured around a dualism opposing orthodox medicine to other systems and techniques whose scientific evidence is questionable, if not unproven. For several years now, the literature has been mentioning the diversification of diabetes patients' recourse to care, remedies and treatments based on "medicines" known as "alternatives" or, more recently, "complementary and alternative medicines" (CAM) or "alternative", "parallel", "soft", "natural" medicines, etc. (Siri, 2006). The same terms, at the level of the people affected, are used to express the use of alternative care and recourse in the temporality of treatments. Thus, a complementary treatment will be sought simultaneously with diabetology care, while an alternative treatment will replace (most often punctually) one or more treatments proposed by official diabetology.

Diabetes can be cured, in the sense that, after a more or less lengthy period of dietary or insulin treatment, the individual can become accustomed to the quantity of carbohydrates considered sufficient under normal conditions: these individuals, even once cured, will nevertheless have to continue to observe certain precautions by complying with preventive hygiene rules to avoid a possible relapse. But the success of the treatment, i.e., the cure of the disease, depends on the consistency, assiduity and intelligence with which the cure itself is carried out.

5. Conclusion

At the end of this article, the measures are adequate, but they are ineffective because of their low level of appropriation and, above all, the lack of community support for their application. Almost unanimously, the people interviewed find them logical, but they remain inoperative, as they are in contradiction with local habits and customs. There is in fact a breakdown in interpersonal, family and community ties. They feel that the government has enacted measures that have not really been implemented on the ground.

Today, in various communities, the barrier measures, although well known, are little respected by a population that displays deviant behaviours and practices on a daily basis. Wearing masks, washing hands or using gel, and respecting social distancing, which were once good practices to be encouraged or perpetuated, are now being severely tested, or even increasingly ignored. Barrier measures, in this case social distancing, or coughing into the elbow to further combat the spread of COVID-19 would be salutary. However, people's deeply-

rooted fear of stigmatizing the patient leads them to disregard these barrier measures. Anyway, in the context of COVID-19 where according to some of our interlocutors, barrier measures obstruct certain therapeutic remedies, it is not easy to carry out an ethnography of diabetes plus COVID-19 patients.

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