

Oral health self-medication in Muiscas, Yanakunas and Pijaos indigenous populations of Colombia

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Abstract *Self-medication is a social practice that corresponds to the autonomous use of therapeutic elements to address diseases. It involves a socio-cultural context of the disease, and a rationality focused on therapeutic efficacy and the availability of curative supplies. Identify and analyze the process of oral health self-medication in indigenous Muiscas, Pijaos, and Yanakunas of Colombia. This is a qualitative, ethnographic study employing techniques such as documentary analysis, participant observation, field diary, and ethnographic interviews. Self-medication is frequent among these indigenous people. It prioritizes the use of pharmaceutical drugs in the Muiscas and medicinal plants in the Yanakunas. The therapeutic supplementation is evident in the Pijaos. The pharmaceutical elements focus on a matter of social progress and the herbal elements on a matter of cultural identity. In these communities, oral health self-medication is a structured and daily practice in families to address their ailments. This practice is supported by the knowledge, management, and availability of different therapeutic resources.*

Key words *Oral Health, Self Medication, Indigenous Population, Qualitative Research, Medicinal Plants*

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Introduction

Colombia has hundreds of indigenous peoples. This research is interested in the oral health self-medication process of the Muiscas, Yanakunas, and Pijaos, and this interest recognizes that the health of Latin American indigenous people is an issue addressed by health¹⁻³ and academic⁴⁻⁶ entities. One of the aspects studied is their oral health, where the presence of various diseases is indicated, in particular dental caries. It also highlights the difficulty in accessing dental services, and the autonomous and supplementary use of drugs and herbs to solve ailments⁷.

Self-medication is a common issue in these populations. However, no specific oral health studies were found. The reviewed studies quantify the consumption of non-prescription medications and the factors that influence this practice⁸⁻²⁰. They also report high use of over-the-counter drugs such as analgesics and flu drugs, and to a lesser extent, restricted items such as antibiotics. Among the influencing factors are the poor medical education of the population⁸⁻¹¹, the presence of easily treated discomforts⁸⁻¹⁹, and chronic diseases taken care of for a long time^{10,17-19}. It also highlights the easy procurement of medicines^{10,13,15,20}, media's influence regarding their consumption^{12,18,20}, the information acquired in health services, including drugstores^{10,11,15,16}, and barriers to access health care centers^{14,16-20}.

These investigations consider that self-medication is a public health problem due to the "massive" and "abusive" consumption of drugs and their adverse effects on health. They also insist on the responsibility of the pharmaceutical industry and the lack of government control. Concerning this stance, national and international health entities promote strategies so that the government and society tackle this issue, and address their ailments scientifically and safely²¹⁻²⁶.

Other studies reviewed used qualitative methods. These indicate that self-medication is a sociocultural practice²⁷⁻³⁰, and they warn that from experience with their ailments, people recognize the therapeutic efficacy of medications and, therefore, make use of them by avoiding medical care^{27,28}, a decision that influences their interaction with drugstores and barriers to access health services²⁰. The use of medicinal plants is also pointed out because their healing benefits, their "miraculous" properties, and their few secondary effects are known^{27,29,30}. Given this reality, health entities regulate the use of medicinal plants and recognize that their use is a widespread therapeutic practice in society^{31,32}. In general, the reviewed

research considers self-medication as a strategy of the subjects to solve their ailments from the use of available therapeutic elements, without the supervision of health professionals.

An author like Eduardo Menéndez, who from the critical medical anthropology examines the interaction between the symbolic and structural elements of each social group, considers self-medication as the autonomous decision of the subjects to use certain therapeutic elements in the treatment of their discomforts without the direct intervention of health personnel. This does not only refer to medicines developed by the pharmaceutical industry (acetaminophen or antibiotics), but to all those substances that are available in their environment (medicinal plants, parts of animals, mineral supplies) and used by people and their social core (family or neighbors) to act against their sufferings^{33,34}.

It also indicates that self-medication synthesizes the experience of people with different models of health care in their territory (biomedicine, alternative therapies). Therefore, it is the main articulation core of these models. These experiences allow people to acquire knowledge and skills that revitalize from specific rationality focused on therapeutic efficacy, and their ideas about the body and health, and the disease and its care. It is essential to mention that self-medication and own care are part of self-care, the most common form of care in every society^{33,34}.

The conceptual approach of this author promotes the contextual and specific analysis of each group, its rationale on health and disease, and its relationship with health services. Based on these elements, this research aims to identify and analyze the health self-medication process in Muiscas, Pijaos, and Yanakunas of Colombia.

Methods

This is a qualitative, ethnographic study that employed research techniques such as documentary analysis, participant observation, field diary, and ethnographic interview. This method is based on a prolonged and prudent approach to the daily life of the communities, where one observes, asks, ponders, and analyzes specific issues, to understand the senses and meanings of people's practices³⁵, in this case, what is related to self-medication in oral health.

These techniques were implemented by three dentists with ethnographic experience. The work was carried out in three communities: Yanakunas, of the Andes of southern Cauca, Pi-

jaos, of the upper Magdalena River valley, and Muiscas, of the urban area of Bogotá. The documentary analysis involved the search of published literature on these indigenous peoples to familiarize with their social contexts and specific issues of this study. This information was contrasted and complemented with the information that emerged from the other research techniques.

The participant observation was developed in several scenarios to know the articulation between the representations and practices of the subjects³⁶ regarding oral health self-medication; that is, between what people say and do in this aspect of their life. One scenario was the homes of three, five, and six Muiscas, Yanakunas and Pijaos families, respectively, selected from criteria such as ethnic self-ascription, living permanently in the region, parental relationship with one or more children living at home and their voluntary participation in the study. The choice and the number of families was based on the theoretical construction of ideal types³⁴, which allows choosing representative subjects of each social group.

This technique was also implemented in oral health services in the study regions, and in the places where the medicines are obtained or acquired. The former were chosen for the information given by the families about the health entities they attend, and the latter because they are the environments of these communities. This observation was accompanied by the use of the field diary, a tool used permanently to record the data of observations and conversations, and also to interpret and reflect on this information³⁵.

The interviews were conducted with key people from each community due to their trajectory in the field of health, as per the recognition indicated by the families. Among the Yanakunas, an herb, a community leader, and a health promoter; in the Pijaos, a *Mohana* or “traditional doctor” and a community leader; and in the Muiscas, a community leader, two older adults and a seller of medicinal plants. This technique allowed obtaining information from a formal dialogue guided by the research questions³⁷. The interviews were recorded and transcribed.

All the information collected was organized in an analytical chart, a technique that allows sorting and ranking data based on pre-established categories³⁵. Likewise, these data were interpreted from theoretical arguments that seek to understand the senses and meanings of self-medication practices, and their relationship with structural elements of each community³⁶.

In the ethical aspects, the Universal Declaration on Bioethics and Human Rights of UN-

ESCO, and Resolution 8430 of 1993 on Colombian health research standards were taken into account. It also had the backing of the Research Ethics Committee of the Faculty of Dentistry of the National University of Colombia.

Results

The presentation of results begins with a characterization of each community. The current Muiscas speak Spanish and live in the urban area of Bogotá and surrounding rural areas, at 2,600 meters above sea level. In this city, they mainly inhabit the towns of Suba and Bosa (Figure 1), where its population is close to 5,000 people – 0.06 percent of Bogotá’s population³⁸. In general, they are integrated into city life. Nevertheless, they live in poor social conditions, and reside in isolated places where health institutions have a limited presence. They are currently in the process of political and cultural reconstruction of their people that includes the strengthening of their Indigenous Council, which is the bridge of interaction between communities and the State. Likewise, they promote the revival and defense of material and immaterial elements of their culture, among which their “ancestral medicine” and knowledge about plants for therapeutic use stand out, without implying a disinterest in Western medicine.

The Yanakunas inhabit the Andes in the south of the country, in the so-called Colombian Massif, between 2,500 and 3,300 meters above sea level (Figure 1). Its population is close to 45,000 inhabitants – 0.09 percent of the Colombian population – and its main economic activity is agriculture in collective lands called preserved territories³⁹. Although this town consists of 31 communities, it only interacted with people from Kakiona and Pancitará, territories where nearly four thousand individuals live together. This indigenous group is of Quechua origin. However, they only speak Spanish. The communities are organized in the *Cabildo Mayor Yanakuna*, a political entity that promotes a Life Plan which highlights its intercultural health model, and an institution called “*Runa Yanakuna*” that provides western and traditional medical care services.

The Pijaos occupy the warm valley of the Magdalena River, between 500 and 1,000 meters above sea level, south of the Tolima department (Figure 1). Its language disappeared in the mid-twentieth century, and its population is close to 60,000 inhabitants – four percent of the national indigenous population⁴⁰. They live



Figure 1. Territory of the Muisca, Yanakunas, and Pijaos in Colombia.

Source: Elaborated by the authors.

in hundreds of communities in collective lands where they grow bananas, cassava, corn, beans, coffee, and sugar cane, and raise small-scale beef cattle. In this case, they interacted with the Anabá and El Vergel-Calarma communities, municipality of Ortega, where 300 people live. They have organized to revive their ancestral territories and strengthen their territorial autonomy in dimensions such as education and health. Concerning health, a process of intercultural health care is developed by an institution called Wala.

Regarding health care, it is essential to underscore that the Colombian indigenous population's health insurance is subsidized by the State. Even so, dental services maintain different access barriers for this population throughout the country. This is one of the reasons why these communities are implementing autonomous and intercultural health institutions.

The ethnographic work allowed to identify that the oral health self-medication strategies are contextualized and related to four aspects: the representations of subjects concerning the mouth; the impact of oral diseases on people's daily lives; the interaction of households with the different forms of health care of their territories; and the availability of therapeutic utility elements.

On the first aspect, among the Muisca, the mouth has functions related to comprehensive well-being: eating and communicating, as well as expressing through laughter, love through kisses, or show off with smile designs. Yanakunas believe that the mouth is a multipart tool that is useful for communicating and feeding, structural support in daily life, where group work is essential. Likewise, magical explanations of certain diseases are represented in their oral cavity; for example, on canker sores, it is indicated that they appear due to the interaction of people with a bioluminescent insect called *ninacuro*, an endemic larva of this Andean area. Among the Pijaos, the mouth is a fundamental part of the body, an element for social communication and food chewing. For this reason, the tongue, lips, and teeth are essential components that must be taken care of carefully because they can be attacked by various diseases.

The second issue is that Yanakunas and Pijaos believe that dental pain usually incapacitates people in the development of daily activities, which is why they seek immediate and effective solutions. The Muisca consider that toothache, inflammation, and gum bleeding are adverse situations because they affect the aesthetic appearance and indicate the level of oral health care.

Regarding the third element, the Muisca have a wide range of services that they attend despite access barriers, and occasionally assume the costs of their care in private offices. They sometimes interact with "ancestral grandparents", seeking solutions to their ailments. Dental care services for the Yanakunas are insufficient and distant and, besides, attend at the grasslands. The Pijaos also have barriers to access health services, and also visit an empirical dentist, due to its low cost and easy access, and *Mohana*, a medical head of their traditional medicine.

Concerning the last issue, the information is organized in Chart 1 that presents the type of discomfort, the therapeutic resources used, the place where they can be obtained, and their preparation, as well as the indigenous people who make use of these resources as a healing element. The Muisca have drugstores in their area of residence, where they acquire biomedical drugs. They also obtain medicinal plants in the markets, and particularly in the *Cusmuy*, a ceremonial house built in the city where they grow therapeutic herbs. The Yanakunas get painkillers in village shops and harvest medicinal plants in mountains and orchards. In the Pijao region, it is easy to obtain medicines for dental pains, dis-

comforts that are also treated with healing herbs collected in gardens, pastures, and plantations (Chart 1).

Other ethnographic data indicate in detail how these communities materialize their oral health self-medication strategies. In this work, we identified that self-medication is enhanced once a discomfort emerges, which is led by mothers and older women, and that different elements and therapeutic techniques are employed.

When discomfort is felt in the mouth, the caregivers use their experience to recognize its impact on the health and daily life of the affected person and, consequently, guide an immediate response in the domestic setting. This contact between the caregiver and the patient includes a diagnosis of the intensity, persistence, and affectation of said discomfort. From this evidence, they activate their knowledge about the disease and its care, an argument that includes reviewing the availability of therapeutic resources in the home environment.

This issue differs in each indigenous group studied. Among the Muisca, such knowledge is complemented by the support of the Google search engine and the easy access to drugstores. The knowledge and skills of neighbors and the availability of medicinal plants in the environment are essential among Yanakunas and Pijaos. Equally, it is common for Muisca families to have shared use of drugs in their homes, especially against pain, inflammation, and fever, a rare situation between Yanakunas and Pijaos.

The most common mouth discomfort is pain, and specifically, toothache. Pharmaceutical elements are used in all three communities to address it. Acetaminophen or paracetamol are easily-acquired medicines. If the pain persists or is “strong”, families turn to drugstores to buy ibuprofen, and they even recognize that there are different doses and frequencies of consumption of this drug. Besides these medications, Muisca use Diclofenac, Naproxen, and Ponstan – mefenamic acid. In the face of inflammation, all three communities use acetaminophen or paracetamol, and before infections, Muisca and Pijaos resort to amoxicillin, and Yanakunas to ampicillin, antibiotics easily obtained in drugstores although their sale requires a prescription.

This population is unaware of the components or action mechanisms of these drugs. Its use derives from and is strengthened by experiences with effective results, and socialized in the family and community. The therapeutic efficacy is not the exclusive knowledge of the caregiv-

ers, as each individual develops specific reasoning on these medications from their learning in the management of their ailments. Likewise, we found that these medications are not exclusive for pain in the oral cavity, but used to cope with all kinds of pain, differentiating their use by intensity and duration.

Another element used between the Muisca and the Pijaos against these pains is the black liniment – a mix of extracts and oils – a liquid medicine without sanitary registration that is obtained in stores of natural products and some drugstores, and that is impregnated in a cotton speck and is placed in the carious cavity. This procedure is also performed with the so-called “electric shims” – a solution with benzocaine and antipyrine – and other elements such as cloves, antiseptic alcohol, nail polish, and shoe polish. Some inputs such as firestone and vigil salt are diluted in water and used as mouthwashes to cope with mild pain, and for inflammations, infections, canker sores, and hemorrhages.

Medicinal plants are other therapeutic resources. Of these leaves, stems, latex, or bark in the form of mouthwashes, plasters, or infusions are used and are obtained in orchards, pastures, gardens, and forests, and also in the markets. Several of these are of Andean origin – Goldenberry, Chilean Myrtle – from tropical areas – Sensitive Mimosa, Coca – and others come from latitudes such as Arabia – Aloe – or the Mediterranean – Calendula. It is essential to underline that each community lives in a specific geographical space. Therefore, its medicinal flora is specific.

Plants are the main therapeutic element for the Yanakunas. In the face of pain, they use leaves of peppermint – *Mentha spicata* –, stevia – *Stevia lucida* –, coca – *Erythroxylon coca* –, or peach – *Durus acinus* –, latex from the milk tree – *Euphorbia lactiflua* –, or poppy – *Papaver somniferum*. Swelling is reduced with Malva foliage – *Malacra alceifolia* –, Salvia – *Salvia officinalis* or the black nightshade – *Solanum nigrum*. White geranium poultice – *Pelargonium* – is used for hemorrhages. Abscesses are drained by a puncture with a splinter of white corn kernels – *Miconia theazana* –, and canker sores and throat inflammation are treated with grape juice – *Physalis peruviana*.

The Pijaos use plants less frequently and dispose of them as a primary measure to their ailments. However, if the discomfort continues or is strong, they resort to drugs because of their efficacy. For pain, they use cloves – *Syzygium aromaticum* –, infusions of Sensitive mimosa stems

Chart 1. Therapeutic elements used in self-care in oral health by the Muiscas, Yanakunas and Pijaos.

Discomfort	Self-medication Strategy			Indigenous people
	Therapeutic Element	Resource Source	Method of Use	
Pain	Paracetamol, Ibuprofen, Acetaminophen	Sidewalk and neighborhood store Drugstore.	Tablets	Yanakunas, Muisca, Pijaos
Pain	Diclofenac, Naproxen, Ponstan	Drugstore	Tablets	Muiscas
Pain	Black liniment, electric shoe	Health food store and drugstore	In cotton ball in the carious cavity	Muisca, Pijaos
Pain	Antiseptic alcohol, ethyl alcohol	Sidewalk and neighborhood store Drugstore	In cotton ball in the carious cavity	Yanakunas, Muiscas, Pijaos
Pain	Nail polish, shoe polish	Sidewalk and neighborhood store	In cotton ball in the carious cavity	Pijaos, Muiscas, Yanakunas
Pain	Peppermint, Stevia Lucida, Coca, Peach	Orchards, pastures, forests	Cooking leaves and mouthwash	Yanakunas
Pain	Milk tree, Poppy	Orchards, pastures, forests	Latex in the carious cavity	Yanakunas
Pain	Opium poppy, Coca, Marijuana	Orchards, pastures, forests	Cooking leaves and stem. Mouthwash	Pijaos
Pain	Clove, Garlic	Sidewalk and neighborhood store	Macerated and placed in the carious cavity	Muiscas, Pijaos
Pain	Rosemary	Gardens, street sales	Cooking leaves Mouthwash	Muiscas
Pain, infection	Salt Vigua, firestone	Drugstores, sidewalk, and neighborhood store	Water solution Mouthwash	Pijaos, Muiscas, Yanakunas
Infection	Amoxicillin, Ampicillin	Drugstore	Capsules	Pijaos, Muiscas, Yanakunas
Infection	White corn kernels	Forests	Splinter puncture in the abscess	Yanakunas
Infection	Goldenberry	Orchards, pastures, forests	Cooking leaves and fruits Mouthwash	Yanakunas
Infection	Swamp plantain, Bidens, Myrcia	Orchards, pastures, forests	Cooking leaves Mouthwash	Pijaos
Infection	Tobacco	Neighborhood stores.	Plaster in the infected area	Muiscas
Inflammation	Mallow, Aloe, Blackberry, Bitter Mexican Sage	Orchards, pastures, forests	Cooking leaves Plaster	Yanakunas
Inflammation	Calendula	Orchards, Gardens	Cooking leaves and flowers Mouthwash	Muiscas, Pijaos
Hemorrhages	Sage, White Geranium	Orchards	Cooking leaves Plaster	Yanakunas

Source: Elaborated by the authors based on ethnographic data.

– *Mimosa pudica* –, or Marijuana leaves – *Cannabis sativa* –, and coca. For inflammation, they use calendula – *Calendula officinalis* –, and as a disinfectant plantain – *Plantago major* –, Bidens – *Bidens pilosa* –, or myrtle – *Myrtus communis*.

Muisca's urban life does not prevent the use of medicinal plants. Concerning toothache, cloves, garlic paste – *Allium sativum* – or myrtle

are placed in a carious cavity. Rosemary – *Rosmarinus officinalis* – relieves postoperative pain, tobacco – *Nicotiana tabacum* – is used against infections, and black nightshade and calendula are anti-inflammatory.

It is essential to indicate that the efficacy of medicinal plants is sometimes complemented with drugs, depending on the intensity and du-

ration of discomfort. Among the Yanakunas, ibuprofen is consumed with peppermint water, and among the Pijaos with a sensitive mimosa infusion.

Discussion

The results allow discussing various elements of the self-medication process. One of these is the relationship between territory and health and the daily representations of the population regarding life, health, disease, and death. The other element is the interaction of the subjects with the existing health systems in their territories, which includes the appropriation, availability, and access to therapeutic resources. From these elements, it is possible to question the existing concepts about oral health self-medication.

In detail, we found that each community inhabits a territory where a balanced representation prevails over the mouth, its discomforts, and care. Thus, the territory is a heuristic corpus that weaves structural and symbolic health care aspects⁴¹, and different health care systems⁴² and their many material and intangible resources used to respond to health issues⁴³ coexist in it.

Suffering (pain), desire (kiss) or sin (caries), and body symbols of social status (smile design) are also represented in the mouth. Self-medication addresses suffering, an immediate strategy to remedy sin. Dental care is also responsible for this task, but its work is exclusive to social status. Therefore, the mouth is a space of differentiated therapeutic intervention, evidencing social inequality⁴⁴, and also a scenario of functions that establish an intricate diversity of practices and relationships in one community⁴⁵ or another.

Mouth representations are related to explanations about its diseases. In the Yanakunas, the reasoning about the origin of some diseases stems from traditional medicine. In the Pijaos, the explanations show an articulation between biomedicine and traditional medicine. In the Muisca, the weight of the biomedical arguments is remarkable. This shows that each community interacts in its territories with other social groups, and has an unequal integration into the national society, subordinated integration where biomedicine is one of the power and control instruments⁴².

Several researchers emphasize that the rationale used to understand the disease corresponds to the reasoning for its care⁴⁶⁻⁴⁸. However, each subject has particular experiences with its oral

discomforts, particularly with dental pain that sometimes becomes torment and requires immediate care that demands a variety of techniques and medications. In this process, new inputs are introduced to overcome these ailments, through the trial and error method, and whose positive results are socialized by the subjects in their immediate social environment.

Self-medication is a process directed by mothers and grandmothers from knowledge and skills transmitted generationally, and by contact with the health services present in their territories^{27-30,33,42-44,46-48}. For this reason, procedures and medications that correspond to biomedical logics prevail in the Muisca of Bogotá, and treatments and supplies from traditional medicine prevail in the Andean Yanakunas.

A wide range of healing elements is appropriated in self-medication. Its medicinal capacity, use techniques, means of obtaining them, and some adverse effects are recognized. The most commonly adopted elements are pharmaceutical medications, due to their easy acquisition and therapeutic efficacy^{8-23,27-30}, an issue that, according to different authors, is due to the lack of medical education of the population⁸⁻¹¹. However, it is stressed that health education should focus on promotion and prevention actions, and not exclusively care⁴⁹, and concerning medications, people are mostly educated by the health services and the pharmaceutical industry. The consumption of medications – with or without prescription – is lower where there are no health services. Therefore, poor medical education by health institutions and barriers to access to health care services^{14,16-20} motivate self-medication.

Other widely used elements are plants^{27,29,30,42-44,46-48}. In indigenous groups, these are the first option to address oral discomforts because of their known healing properties^{2,4}. Its use also has ideological support for the idea of a benign nature^{27,29,30}, and political support that yields the healing resources of the territory. Plants are also used as a supplement to pharmaceutical medicines^{42-44,46-48}. Thus, the efficacy of these medications and that plant resources are a subjective part of care and work as a regulator of the side effects of pharmaceutical products is recognized.

In general, oral health self-medication in these communities is a sociocultural process that subjects implement autonomously without the direct intervention of health staff^{27-30,33,42-44,46-48}. This process aims to restore health or limit the effects of the disease through the use of various

therapeutic elements and techniques available in the environment, used from specific reasoning of each group about body and health and disease and its care. Every reasoning is specific, and knowledge and skills that derive from the different health care systems interacting with these communities are articulated in it.

This process focuses people and the ability of each social group to understand and treat their illnesses autonomously. Therefore, it contrasts with concepts that consider self-medication as a contravention in the consumption of pharmaceutical drugs^{8-20,50,51}, and that focus on this type of therapeutic resource as a scientific representation of health services. Although one recognizes that the “massive” and “abusive” use of all types of medicines is a problem for the health of the population⁸⁻²⁰, it should be noted that self-medication is a method to understand the level of development of healthcare systems.

Conclusions

Oral health self-medication in indigenous Muiscas, Pijaos, and Yanakunas of Colombia is a process that recursively relates different social dimensions. One of these dimensions is the territory, a symbolized space where each community builds and energizes its representations about the mouth and its components, well-being, health, and oral diseases and their treatment. It is also a scenario of daily life where communities promote their political self-determination, and one of the results of this exercise of power is the construction of health systems with an intercultural perspective.

Another social scenario is energized from medical pluralism. That is, several health care systems are recognized and used. In self-medication, therapeutic resources from different medical systems are articulated to cope with the same oral discomfort. For this reason, asymmetries are evident in the supplementary interaction between pharmaceutical drugs and medicinal plants. This indicates the level of integration and conflict of biomedicine and traditional medicine in the sociocultural life of each group.

One more of these dimensions reflects from the anthropological perspective of this study and considers that every therapeutic resource used intentionally is considered a medication. In this regard, each community correctly understands and addresses its diseases, and as a corollary, there are specific rationales for medications. These include the place and means of acquisition and use, the dose, its complementarity with other medications, and the therapeutic efficacy that corresponds to individual experiences of the microsocial context.

The last dimension to point out is the appropriation of the body and its ailments. In the self-medication process, subjects exercise control in their original territory: their body, and in particular, their mouth. Their ailments and conscience lead them to mobilize their knowledge and skills to restore their health immediately and independently of the dynamics prevailing in health systems (Western and traditional medicine), systems with which they can interact and that are generally mediated by transactions of money, time and dignity.

Collaborations

EJO Lozano built the research project and managed the financial support for its realization. Likewise, he guided and participated in the ethnographic work in the three communities where the project was developed, and organized, analyzed and wrote the final text with the contributions of the other two researchers. YDL Pinzón supported the construction of the research project and the management of economic resources. She also participated in ethnographic work, in the organization and analysis of the information, and in the writing of the final text. SIP Solano participated in the construction of the research project, in the ethnographic work, in the organization and analysis of the information, and in the writing of the final text.

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Article submitted 18/03/2019

Approved 07/02/2020

Final version submitted 09/02/2020

Chief editors: Romeu Gomes, Antônio Augusto Moura da Silva