

Ethnomedicinal System and Healthcare in a Riverine Community in Coari, Amazon, Brazil

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Abstract

Introduction: The use of medicinal plants, as a therapeutic practice of traditional medicine, is a viable resource for the maintenance of health and for the prevention and treatment of diseases. This practice in healthcare is common in forest regions in Amazon, Brazil.

Objective: To know the therapeutic itinerary and the sociocultural aspects that involve the use of medicinal plants during the health-disease process in the riverside environment.

Methods: Quanti-qualitative study with a cross-cultural approach with a Leininger theoretical reference, carried out with 8 expert informants in medicinal plants in the community of Nossa Senhora da Conceição do Boam in Coari (Amazonas, Brazil) and 11 informal informants responsible for health care in the household. Data collection took place from Jan/Mar 2015 through ethnographic technique, using semi-structured and structured interviews. Thematic analysis was performed to obtain categories of discussion.

Results: The present study showed that the concepts of health and disease go beyond symptomatic and pathological processes; that popular herbal medicine is the main resource used in the therapeutic itinerary of riverside families; healing is mostly practiced by women, whose transmission of knowledge is oral and interparental; and it involves cultural values and beliefs that go beyond economic aspects and access to health services.

Conclusion: This study made it possible to approach the riverside reality, providing an understanding of their difficulties regarding access to health services and the reasons inherent to the use of medicinal plants, where the understanding of the cultural dimension by the professional is essential to offer the health care for riverine people and their community.

Keywords: Medicinal Plant; Folk Medicine; Ethnography; Transcultural Nursing; Population Health Management

Abbreviations

HRC: Regional Hospital of Coari; UBS: Primary Health Care Centre; ACS: Community Health Agents; EI: Expert Informants; GI: General Informants

Introduction

Historically, the use of medicinal plants, as a therapeutic practice of traditional medicine, is a viable resource for the maintenance of health and for the prevention and treatment of diseases. Despite the evolution of modern medicine, about 80% of people living in developing countries opt for such therapy mainly in areas with difficult access to allopathy and conventional health services [1].

The Brazilian Amazon is one of the few national environments to house an expressive set of traditional forest peoples, including the riverside people, who remain over time using medicinal plants in the health and disease process, supported by vertically transmitted popular knowledge from generation to generation, involving ethnic and cultural factors in the management of popular herbal medicine [2].

However, the use of medicinal plants among the riverside people is under constant threat by the interference of factors that are external to the social dynamics. These include environmental degradation, mining activities with water contamination by mercury, the entry of new cultural elements accompanied by the disaggregation of traditional life systems, the greater ease of access to modern medicine services, the displacement of people from their natural environments to urban regions, as well as the extensive and extractive exploitation of Brazilian wild material, mainly by the pharmaceutical herbal industry, which has led native medicinal species to extinction [2-5]. The loss of biodiversity and the accelerated process of cultural change add a sense of urgency to the record of this traditional knowledge.

Although studies have been developed among riverside people to register this practice [2,4,6], there is a lack of knowledge in terms of the sociocultural aspects that involve the use of medicinal plants.

The use of plants for therapeutic purposes is embedded in a social and ecological context that will, in many ways, shape it, so that certain peculiarities of its use can only be understood if the cultural factors and the physical environment where it occurs are considered. Traditional knowledge is an integrated system of beliefs and practices of different cultural groups, and traditional peoples generally assert that "nature", in addition to being an inventory of natural resources, also represents the spiritual and cosmic forces that make life the what it is [7].

Aim of the Study

This study aims to know the therapeutic itinerary and sociocultural aspects that involve the use of medicinal plants during the health-disease process in the riverside environment.

Methods

This is a quanti-qualitative study, using a cross-cultural approach with a Leininger theoretical reference [8].

Setting

It was carried out in the riverside community of Nossa Senhora da Conceição do Boam (Our Lady of the Conception of Boam - 4o 08'97 "S; 63o 27'38"W), located on the shores of Lake Coari, in the municipality of Coari, state of Amazonas (Brazil). It is surrounded by the Amazon forest and is located about 20 km from the municipal headquarters of Coari, 363km from the state capital (Manaus), distance travelled in 24 hours by boat. The access from the centre of the municipality of Coari to the riverside community is by river only, with duration of one hour by motorboat; however, this time can be increased by 4 hours of hiking during the down tide season of the river.

The municipality of Coari in 2016 had an estimated population of 83,929 inhabitants. Currently, the health services of the municipality of Coari are composed of a medium complexity hospital with 89 beds (Regional Hospital of Coari - HRC); 11 Primary Health Care Centres

(Unidades Básicas de Saúde -UBS), one of which is destined to riverine populations and located in the central region of Coari; a Tropical Medicine Institute; a hospital boat to cover all the riverside communities; a Central Laboratory of Clinical Analysis; an Emergency Service; a Sanitary Surveillance Nucleus and; a Psychosocial Care Centre. In addition to the health team present in the aforementioned services, each community has the support of Community Health Agents (Agentes Comunitários de Saúde - ACS), professionals in the community who are responsible for promoting health, mapping and referring people to the health services.

According to the local ACS, 132 people live in 38 families in the community and 60.6% of the population is in the 0 - 19 age group. The community has electric power and the drinking water comes from artesian wells or from the lake that borders the community. The houses are stilts, without internet access. The economy of the community revolves around the agricultural production of fruits as bananas and açai, nuts (castanha do pará) extraction and manioc flour manufacture. There is a school; however, there is no UBS.

Sample and data collection

In accordance with the ethnographic method, community observation, participation and reflection were carried out from January to March 2015 to get access to the community, to explore the context of the community living, the therapeutic practice with medicinal plants and their relationship with the environment [8]. One of the researchers resided for a period in the community to establish a rapprochement with the families, and to understand the way of life and healing practices of the riverine people. Other collection techniques, such as structured and semi-structured interviews for all informants, were also included.

Data were obtained from two types of informants: expert informants (EI) who are people recognized by the community as having in-depth knowledge of the use of native plants and/or production of medicines and promoting healing [9] and the general informants (GI) made up of individuals responsible for home care in case of illness but not recognized by the community as people with well-known knowledge in terms of medicinal plants.

The eligibility criteria for the informants were: age greater than 18 years; living in the riverside communities in the region of middle Solimões - Coari (Amazonas) for more than five years, due to the cultural property required for research. In addition, the EI should be specialist in popular or informal medicine elected by the community due to their notorious knowledge in terms of the use of medicinal plants, and the GI responsible for the health care of the relatives in the home.

On an on-site visit, eight expert informants in medicinal plants were selected by means of the "snowball" technique [10], according to information from people in the community.

The GIs, 11 informal informants were identified by the families as the responsible for home care in case of illness. The number does not represent the total number of families in the community, since the structure of the riverside houses contained more than one family.

In order to collect ethno-pharmacological data [10], semi-structured interviews were conducted with a specific script directed only to the EIs with questions related to the sociocultural aspects that involve the use of medicinal plants during the health-disease process: What is health and disease and where do diseases come from? What are the common diseases in the community and how are they treated? Why do you use medicinal plants to take care of diseases? Where can you get the medicinal plants? How is the access to health services in the municipality? and What is the itinerary followed by families in case of illness? The last two questions were also applied to the GIs. All informants, EI and GI, answered the structured interview on socioeconomic and demographic profile, access to health services and therapeutic itinerary.

Data analysis

A thematic analysis of the interviews was systematically, thoroughly and rigorously carried out. The cultural values and beliefs that involve the use of traditional herbal medicines were analysed qualitatively, according to the phases: the researcher starts with Phase I, by

analysing established and detailed data before moving to Phase II. In this second stage, the “represented”, the “indicators” and the “categories” of the first data in Phase I are identified; in Phase III, the “recurrent patterns” of the data as derived from Phases I and II and in Phase IV, the “themes” of behaviour and other “summary results of the research” are presented and abstracted from the data as derived from the previous three phases [8]. After the thematic analysis, part of the transcribed dialogues that were identified with the letter “I” and the interviewee’s number were selected and presented as illustrative excerpts in the results.

Ethics

This research is part of the project “Self-medication in riverside communities in the region of the middle Solimões - Amazonas” that was approved by the Research Ethics Committee of the Nursing School of the University of São Paulo (CAEE 33560914.0.0000.5392). The participants signed the written informed consent.

Results

Sample characteristics

The EIs (n = 8) were predominantly female (87.5%), of brown colour, mean age of 51 years (ranging from 20 to 76 years), born in the state of Amazonas, mean income of US\$ 180 (US\$1 = R\$3.4), mostly Catholic (87.5%), and only two of these EIs were literate (one with high school degree and another with elementary school degree).

The GIs (n = 11) were female (90%), 80% of brown colour, mean age of 36 years (range from 20 to 73 years), 90% born in the state of Amazonas, mean income of US\$ 262 (range from US\$ 58 to US\$ 960), 100% Catholic, and all of them with at least elementary school degree.

The experts’ view on the health and illness process: Unveiling popular concepts

In this study, we sought to capture the local EI concepts of health. Through a thematic analysis of some speeches, it was observed that health goes beyond the conception of physical, mental and social well-being, because it represents the whole in a person’s life and a good feeling:

- “Health is a good thing. With health, we have everything in life, right?!” (I8).
- “When I laugh around... Now, when I feel pain it’s different; I don’t feel that joy to walk around” (I1).

In the definition of disease, the IEs characterize it as something limiting, which makes the individual dependent, in addition to expressing themselves through pathological and sentimental symptoms:

- “Illness is a very bad thing [...]. With health, the person does everything he wants, the patient cannot do anything” (I8).
- “For me, the person is sick when he is lying there, he is in bed and can’t get up, because if he is in this condition, then I consider it a disease. Now, if you can walk all the time, [...] you are feeling bad, but you are not so sick” (I1).
- “For me it’s a virus that causes us evil [...] the guy only knows when people get malaria when they turn yellow” (I7).

Knowing the aetiology of cultural diseases, the itinerary and therapeutic access

It was observed that diseases can have the physical or spiritual aetiology, both well-defined and culturally standardized. The determination of the cultural diagnosis carried out by the riverside people will deliberate the conduct to be taken, and the way to be covered in the therapeutic itinerary.

Four diseases of spiritual origin were mentioned (Table 1). Although some have clinical manifestations, the treatment involves prayers and charms, because, according to them, the exclusive use of popular herbal medicines is inefficient.

Spiritual "disease"	Definition	Treatment
Evil eye	"The child is scared and wakes up screaming at night. The evil eye is transmitted when a person envies the child".	Prayer and charm of the local prayer.
Beast's evil eye	It is a haunting transmitted by the animal of the river. When a menstruating woman goes to the river around noon, some animal can haunt the woman or child that is nearby. The child can be disturbed by an evil spirit, and a good prayer of the preacher is needed.	Prayer of the local prayer.
Bewitching	Transmitted by the child's father when he comes home and holds the child hungry, not bathed and sweaty from work. The child suffers from vomiting and signs of dehydration. It can also be transmitted by a person who admires the child.	Prayer and charm of the local prayer.
Childhood Illness	A disease that is difficult for riverside people to understand it. Seen as a taboo, the subject cannot be explored. Many riverside children died of this evil. There is an exclusive cemetery for infants affected by the disease. According to them the child becomes sad, with a droopy eye, with vomiting and diarrhea. But diagnosis and treatment can only be done with a strong prayer.	In this case, community members need to travel to the other community that has a reference prayer.

Table 1: Spiritual borne diseases with its settings and types of treatment reported by local experts.

Guided by popular knowledge, the riverside inhabitants of the community identify signs and symptoms of evils with spiritual origin, but it is up to the healer (prayer/counsellor) to discover the cure for the causes of illnesses and crises, as well as the description of the rituals of prevention.

In the case of "child disease", the signs and symptoms of clinical manifestation are characteristic of severe dehydration and could be treated with liquid and popular herbal remedies, together with prayers and blessings, thus suggesting accommodation of care. According to the local EI this disease is extremely lethal, because after the diagnosis made by the prayer, most children die of dehydration.

When questioned about diseases of physical origin that could be treated with local medicinal plants, experts cited 48 clinical situations involving signs and symptoms, specific diseases or organs with poor functionality. These could be treated with popular herbal medicines alone or combined with allopathic drugs (Table 2).

Treated with popular herbal remedies	Treated with popular herbal remedies and allopathic medicines
Relaxation, delivery speeding, anaemia, contraceptive, skin rash, uterine cancer, baby colic, woman colic, post-surgery, postpartum, dysentery, diarrhoea in children, air disease that occurs in children, pain, local pain, abdominal pain, ear pain, back pain, heart pain, stomach pain, weight loss, fattening, bleeding stanching, heavy stomach, strong fever, stingray sting, haemorrhoid, swelling, infection, infection in women, urinary infection, inflammation, inflammation in women, snake bite, broken bones, gallstones, heart problems, kidney, thrush, healing wound, loosening the belly, worm, reddishness.	Asthma, headache or pressure on the head, liver, flu, malaria.

Table 2: List of health problems treated with popular herbal products alone or combined with allopathic drugs.

The exclusive use of popular herbal medicines for the care of most diseases (87.5%) shows the community self-sufficiency for the treatment of diseases of physical origin.

The popular community care included some specialties: herbalist, midwife, Torsion healer (chiropractor) and praying man and there was no people who heal teeth and healers. It is also worth mentioning that the people had access to the professional care through an UBS destined to the care of the riverside populations located in the urban centre of Coari and an ACS that lived in the community. In this way, problems of physical origin could be treated with the professional or popular care.

Although there was an UBS for the riverside people in the urban centre of the municipality, they used to visit health professionals at the Coari Regional Hospital (HRC), because, according to the riverside people, the access was easy without the need for scheduling and passwords, which makes the urgency service more attractive.

The reports allowed identifying that none of the people could carry out medical follow-up, even in the gestational period. In addition, other difficulties were stated, such as: lack of a doctor, nurse and dentist (in the community and municipality), lack of vacancies for professionals, presence of damaged equipment to perform exams, little financial resources to buy the prescribed drugs and, transport fuel.

The following speech exemplifies the socioeconomic context that involves the search for a public health service:

“Not even prenatal care can be done. Sometimes we wait for two months to get an ultrasound; besides that, you have to wait all day for service. You spend a lot on your way there; you have nowhere to stay in the city; the waiting is long; and you have nowhere to eat. It’s the same thing to do surgery and dentist; there is no professional or can’t get there” (I1).

For these reasons, it is common the use of antipyretic and analgesic drugs without a prescription by the riverside people.

Aware of the existence of the professional and popular care, as well as the difficulties in accessing health services in the riverside socio-environmental context, it became necessary to know the therapeutic itinerary of the families (Figure 1), where the presence of three health care types is perceived: professional, family and folk.

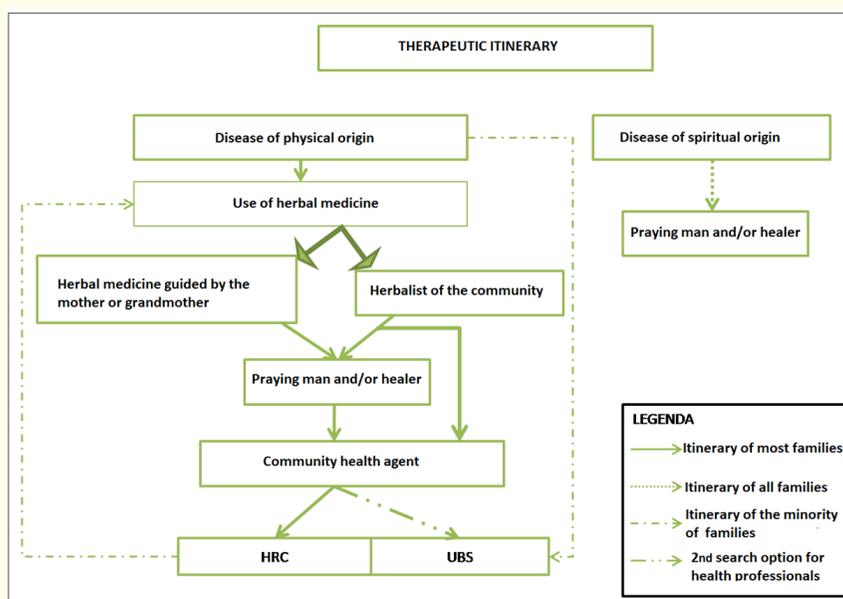


Figure 1: Therapeutic itinerary of the families of the riverside community.

It was identified that popular herbal medicine presents a prominent position in the therapeutic itinerary, being the first route of most families and the professional system is the last to be visited, in case of illness.

When analysing the values and beliefs that involve the use of medicinal plants, it is verified that among all the IEs this practice is based on a knowledge acquired for generations that continues to be transmitted orally (vertical) by grandmothers, mothers or mothers-in-law in the family environment.

For riverside people in general, the use of medicinal plants is based on a set of cultural beliefs and values, justified and strengthened by popular science, as can be seen below:

- “[...] I believe in it because I know what to mix and the one from the pharmacy is not known” (I1).
- “The home remedy is better than the medicine of the pharmacy. The pain goes away and it works better” (I4).
- “Home remedy heals faster” (I5).
- “The home remedy does not hurt anyone” (I6).

However, family caregivers in the informal system (GI), besides the ease of access to medicinal plants, have greater confidence in terms of treatment efficacy:

- “I use home remedy because it’s easy and it’s close” (I9).
- “...Because it’s easier to get” (I18).
- “I use because I have faith in God and in the home remedy” (I17).

The mention of easy access is evidenced by the number of medicinal plants grown in the backyards of the homes (87.1%), while in the surrounding forest (6.45%) and other communities (3.2%), the smallest part is sought.

Discussion

Care for the human being is universal, that is, for human beings to be born, to grow, to maintain their life and to die, they must be taken care of; however, each culture, according to its environment and social structure, will have its own vision in terms of health, disease and care [8]. Such a representation reveals that the concept of health defined by the riverside people surpasses the issues established by the hegemonic medical system instituted in our society, since it represents more than a mere symptomatology, but also the interconnection between mind, body and soul, demonstrating the importance of comprehensive care covering biopsychosocial aspects. Thus, the health concept emitted by EI goes beyond physical well-being and it can also involve feelings of joy and happiness.

The results was similar to those found in another study [11] whose object was the cultural dimension of the concept of health of retired workers of Guadalajara in Mexico. In addition to physical well-being, the author emphasizes that workers defined health as a state of tranquillity, harmony, happiness and feeling good. Also, he considers the cultural analysis of the concept important, since the meanings given to health influence his experience (real or subjective), condition his perceptions and interpretations and influence his practices of health maintenance. Therefore, the elements that conceptualize health should be considered for the construction of intervention or education programs, in order to achieve the promotion of integral health. Given that in the riverside context, health is a concept that approaches joy and happiness, it is necessary to build actions that dialogue with the population in order to generate such feelings.

In addition to feelings, it was observed that in both concepts of disease and health, the EI linked them to a state of (in) dependence and autonomy of the individuals. It is observed in the EI’s speech in which health enables individuals or groups to perform the activities according to the desired standards in a given culture, following the theory of cultural care [8]. As well, identifying the definition and aetiol-

ogy of diseases given by a certain population group makes us understand many attitudes and practices related to the health-disease process [12]. Therefore, to understand the therapeutic itinerary, it is necessary to have prior knowledge in terms of the cultural aetiologies.

Although most of the families were Catholics, the traditional practice of healing of the Amazon indigenous were commonly used. The absence of a traditional spiritual healers in the community can be due to the prevailing Evangelical or Christian religions, which oppose faith healing or spiritualist practices [13]. Spirituality has been the cause and the answer to inexplicable diseases and ills and may be the causative agent of some diseases in the community of Nossa Senhora da Conceição de Boam. Other authors have also observed in other riparian communities the existence of these “cultural diseases”, transmitted by enchanted animal, a man or a woman, who conscious or unconscious of misfortunes generate spells or counter-spells, reflecting in material or immaterial damages. Thus, the aetiology of diseases in the riverside environment involves a set of knowledge based on their own culture and symbolism, which interprets the process of illness and healing with spiritual, physical, religious, magical or mythical senses [14].

Then, it is perceived that belief in local culture is a tool predominantly used by the population in the search for health, where faith and spirituality are employed in the rituals performed by the prayer or healer with curative purpose. When conducting an anthropological analysis, it is possible to identify the influence of four strands in the practice of riverside people faith healing: Indigenous, Christian, African and Kardecist.

Although indigenous “pajelança” (indigenous magical ritual aimed at healing) has a strong influence on the origin of faith healing, the integration into a new system of social relations, incorporating Catholic, Kardecist and African beliefs and practices, has been observed since the end of the twentieth century [15]. The practice of these riverside prayers and healers is able to interconnect with other popular caregivers and everyday immaterialities, such as folklore, landscape, imagination and affective system [16].

Similarly, in other localities in Brazil, diseases of mystical origin have been approached by spiritual techniques through healers, as observed in a study that found that mothers have sought popular measures, believing that only the use of blessings and charms could extinguish the spiritual health problems that affect newborns [17]. In the Amazonian riverside communities of the Unini River, spiritual diseases were the second most frequent category, representing 16.7% of all popular healing practices, including the use combined with plants and animals for the healing process [18].

The use of popular herbal medicines is common in places where people have difficulties to access health services, and historical-cultural influences favour the use of these herbs [1]. The therapeutic itinerary is related to all the activities produced by individuals or groups in the preservation or recovery of the health status, allowing the mobilization of distinct resources: from home care and religious practices to the predominant biomedical devices in allopathic medicine [19].

The IG and IE statements make it possible to note that the therapeutic itinerary of the families follows a flow through the three health care systems described in the literature [20]. This flow, considered the most used and accepted [21], proposes that health care can be located in three different subsystems, within which the experience of the disease is experienced: professional, popular (folk) and informal.

The transmission of knowledge of folk medicine from generation to generation is a common feature in the Brazilian Amazon. Evidence such as these was also noticed in Rio Grande do Sul (Brazil), which verified the strong female influence on health care and knowledge transmission involving medicinal plants [22].

In contrast to other studies that considered that therapeutic practice with medicinal plants is influenced by the difficulty of access to health services and the lack of financial resources to acquire allopathic therapy [18,23], it was identified that, despite the presence of this

reality in the studied environment, this is not the main motive that causes EI to use these resources, according to reports of easy access to medicinal plants, better solutions, and knowledge in terms of treatment preparation and composition.

It was observed among the riverside people the existence of values and beliefs that strengthen the practice, such as the trust and faith that they have in terms of the use and efficacy of the popular herbal medicine, the easy access, familiarity with the management of the therapy and the belief to be a harmless method to health.

It is worth noting that, although the cultivation of medicinal plants in the backyard is a common Brazilian practice [22,24,25], it requires a series of care considering its therapeutic use, since inadequate cultivation that disrespects the needs of each species may endanger the health of those who use them. Therefore, the removal of border herbs from ponds, rivers or polluted places should be avoided; in addition, the state of conservation of these plants must be verified, avoiding those withered, mouldy or old.

Guidelines for storage are essential in order to avoid injury. After collection, medicinal plants should be stored in a cool and dry place protected from sunlight, moisture and insects to better preserve the active ingredients [25].

Thus, the use of medicinal plants includes cultural values specific to the riverside environment, which goes beyond economic aspects or access to conventional health services. The therapeutic practice is surrounded by symbolism that is sometimes exotic to health professionals, making the ethnobotanical analysis essential for the health care of this population group.

Conclusion

The use of medicinal plants is involved in a cultural, socioeconomic and educational context characteristic of the riverside environment, surrounded by symbolism. When analysing the therapeutic itinerary of the riverine families, the popular herbal medicine is the main resource used in the cases of diseases of physical origin. The information obtained in this study can support actions aimed at improving river life, registering and perpetuating knowledge in terms of the use of medicinal herbs, and may support studies on the conservation and management of these species.

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Conflict of Interest

None.

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