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Between Forest and Laboratory: Knowledge, Practice, and Identity Among Traditional Medicine Practitioners in Yaoundé, Cameroon

A Qualitative Medical Anthropology Study

Dr Kah Evans NGHA

University of Yaoundé I, Cameroon

Lecturer, Faculty of Arts, Letters and Social Sciences, Department of Anthropology, University of Yaoundé I

Corresponding Author: kahngha@yahoo.com | +237 675 923 873

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Abstract

Contextually, traditional medicine remains a primary healthcare resource for a significant proportion of the Cameroonian population. Despite growing pharmacological interest in medicinal plants, the practitioners who constitute the human backbone of this system herbalists, traditional healers, phytotherapists, and naturopaths remain understudied in their socio-cultural context, their knowledge systems, and their relationship to biomedical practice. The objective of this study was to explore the ethnopharmacological knowledge, preparation techniques, cultural transmission mechanisms, and identity of five traditional medicine practitioners in Yaoundé, Cameroon, with a view to understanding complementarities and tensions between traditional and biomedical systems. As far as the Methods are concerned, this qualitative study employed semi-structured in-depth interviews with five purposively selected informants: a phytotherapist-nutritionist, a traditional healer (tradipraticienne), two herbalists from the Mvog-Bi market, and a naturopath. Interviews were conducted in Yaoundé between January and March 2026 and analysed thematically through an ethnomedical lens. Results show that five thematic domains emerged: (1) raw material sourcing and plant identification; (2) preparation and transformation processes; (3) formulation and dosage; (4) cultural transmission and spiritual dimensions; and (5) challenges and prospects for integration with modern pharmacy. Practitioners shared empirical pharmacovigilance logic, intergenerational oral transmission, and polypharmaceutical formulation. Key divergences were found in standardisation practices, spiritual engagement, and institutional recognition. In Conclusion, traditional medicine in Yaoundé constitutes a coherent, adaptive, and culturally embedded therapeutic system. Equitable collaboration between traditional practitioners and biomedical institutions grounded in mutual respect, quality standardisation, and intellectual property recognition holds significant potential for improving healthcare access and preserving phytotherapeutic heritage in Central Africa.

Keywords: *Medical Anthropology; Traditional Medicine; Phytotherapy; Herbalism; Naturopathy; Ethnopharmacology; Cameroon; Yaoundé; Knowledge Transmission; Biomedicine*

1. INTRODUCTION

Traditional medicine (TM) represents one of the oldest and most geographically widespread systems of healthcare in human history. According to the World Health Organization (WHO, 2023), approximately 80% of the global population relies on traditional or complementary medicine for at least part of their primary healthcare needs, and 170 countries have formally reported the use of traditional medicine within their health systems. In sub-Saharan Africa, this dependence is particularly pronounced: traditional healers often outnumber biomedical practitioners by a ratio of 100:1 in rural areas (Mahomoodally, 2013), and medicinal plants remain a cornerstone of first-line healthcare for both urban and rural populations.

Cameroon is no exception. Situated at the crossroads of Central and West Africa, the country harbours exceptional botanical biodiversity estimated at over 8,000 plant species, a significant proportion of which possess documented ethnomedicinal uses (Telefo et al., 2011). The country's pluralistic healthcare landscape, characterised by the coexistence of biomedical facilities, traditional healers, herbalists, and informal phytomedicine markets, presents a rich site for medical anthropological inquiry. Despite growing pharmacognosic and phytochemical interest in Cameroonian medicinal plants (Kuete, 2017), the human actors at the heart of these therapeutic systems the herbalists, traditional healers, phytotherapists,

and naturopaths who transmit, adapt, and apply this knowledge remain insufficiently studied in their socio-cultural complexity.

Medical anthropology, as a discipline, offers a conceptual framework for understanding illness, healing, and therapeutic systems as simultaneously biological, social, cultural, and spiritual phenomena (Kleinman, 1980; Singer & Baer, 2012). Arthur Kleinman's influential distinction between the popular, professional, and folk sectors of healthcare (Kleinman, 1980) provides a productive lens through which to analyse the plurality of actors encountered in this study. More recently, scholars such as Etkin (2006) and Pieroni et al. (2014) have emphasised the importance of ethnomedical knowledge as a dynamic, adaptive corpus not a static cultural relic that continues to evolve in response to ecological, economic, and demographic pressures.

This article emerges from a field-based pedagogical exercise conducted within the framework of the GNO 505 Medical Anthropology course at the Faculty of Medicine and Biomedical Sciences (FMSB) of the University of Yaoundé I. Three student-researchers conducted independent semi-structured interviews with five traditional medicine practitioners in Yaoundé, generating rich ethnographic data that were subsequently compiled and subjected to thematic analysis. The resulting article addresses the following research questions:

(1) What are the key practices, knowledge systems, and material processes that characterise traditional medicine practitioners in Yaoundé?
(2) How are ethnomedicinal knowledge systems transmitted across generations, and what role does cultural and spiritual identity play in therapeutic efficacy?
(3) What are the principal convergences and divergences between traditional medicine practitioners and biomedical pharmacology, and what conditions would enable meaningful integration?

2. LITERATURE REVIEW

2.1 Traditional Medicine in Sub-Saharan Africa: Scope and Significance

The legitimacy and importance of traditional medicine in African healthcare contexts has been extensively documented over the past four decades. The African Union's Decade of African Traditional Medicine (2001-2010) catalysed significant policy attention and research investment, culminating in the Maputo Declaration, which called for the integration of traditional medicine into national health systems (WHO Regional Office for Africa, 2013). The WHO's Traditional Medicine Strategy 2014-2023 further emphasised the need for rigorous research, quality assurance, and regulatory frameworks to harness the potential of traditional medicine while ensuring patient safety (WHO, 2019).

In Central Africa specifically, ethnobotanical surveys have documented extensive knowledge of medicinal plants for the treatment of malaria, gastrointestinal disorders, infectious diseases, and reproductive health conditions (Betti, 2004; Nguelefack et al., 2015). Cameroon's medical pluralism shaped by its linguistic, ethnic, and ecological diversity produces a particularly heterogeneous array of traditional medicine practitioners, ranging from highly specialised herbalists and bone-setters to generalist healers integrating spiritual and pharmacological interventions (Ceuterick et al., 2011).

2.2 The Ethnopharmacology of Medicinal Plants: From Empirical Knowledge to Bioactive Molecules

The interface between traditional medicine and pharmacognosy has become one of the most productive areas of contemporary biomedical research. Ethnopharmacological approaches which use local knowledge as a guide for the bioprospecting of pharmacologically active compounds have led to the identification and development of numerous important drugs (Fabricant & Farnsworth, 2001; Newman & Cragg, 2020). In Cameroon, studies on plants such as Nauclea latifolia, Annona muricata, and Alchornea cordifolia have validated several traditionally reported therapeutic uses, including antimalarial, anti-inflammatory, and antimicrobial activities (Kuete et al., 2011; Telefo et al., 2011).

The process by which medicinal plants are prepared and administered is, however, far more than a pharmacological act. As Moerman (1979) argued in his seminal paper on the pharmacological significance of folk medicine, the method of extraction, the choice of solvent, the timing of harvest, and the ritual context of preparation all modulate the therapeutic outcome in ways that purely chemical analyses cannot fully capture. Costus afer, known locally as the "twin's cane," offers a particularly instructive example: its empirically documented role as a preservative in herbal preparations is now supported by robust scientific evidence of its antimicrobial properties (Akuodor et al., 2011).

2.3 Medical Pluralism, Identity, and the Sociology of Traditional Healers

Traditional medicine practitioners are not a homogeneous category. Medical anthropologists have drawn important distinctions between different practitioner types healers, herbalists, diviners, bone-setters, birth attendants and have emphasised that these roles are shaped by social position, gender, cultural authority, and individual biography as much as by technical expertise (Kleinman, 1980; Last & Chavunduka, 1986). In the context of urban Africa, the emergence of practitioners who combine academic training with traditional knowledge sometimes described as "neo-traditional" practitioners (Chabrol & Obrist, 2014) further complicates simple typologies.

The question of the social recognition and institutional legitimation of traditional medicine practitioners is also a recurring theme in the literature. In Cameroon, as elsewhere in Africa, traditional healers frequently report feelings of marginalisation, stigmatisation, and asymmetric relationships with biomedical actors who exploit their knowledge without adequate recognition or compensation (Ngogang et al., 2007). This structural inequality has been identified as a major obstacle to the development of genuine therapeutic complementarity (Bodeker & Kronenberg, 2002).

2.4 Knowledge Transmission in Oral Medical Traditions

The intergenerational transmission of ethnomedical knowledge through oral and practical channels is a defining feature of traditional medicine systems in Africa. Unlike codified biomedical knowledge transmitted through written texts and formal curricula, traditional medical knowledge is typically transmitted through apprenticeship, observation, and active participation — often within the family unit or under the supervision of a recognised master (Flint, 2008; Pieroni et al., 2014). This mode of transmission is vulnerable to disruption by urbanisation, formal education, and cultural change, raising concerns about the erosion of valuable therapeutic knowledge (Leonti, 2011; Vandebroek et al., 2011).

At the same time, several scholars have challenged the narrative of inevitable decline, arguing that traditional medical knowledge is highly resilient and adaptive, incorporating new plants, techniques, and concepts from other cultural traditions through a process of "ethnobotanical innovation" (Bussmann & Sharon, 2006; Waldstein & Adams, 2006). The practitioners encountered in this study exhibit both of these dynamics: a strong attachment to family transmission and ancestral knowledge, combined with openness to cross-cultural knowledge exchange and, in some cases, collaboration with biomedical researchers.

3. METHODOLOGY

3.1 Study Design

This study employed a qualitative, ethnographic research design grounded in the methodological traditions of medical anthropology. The primary data collection method was the semi-structured in-depth interview (Bernard, 2017; Patton, 2015), chosen for its capacity to elicit rich, contextualised accounts of practitioners' knowledge, practices, and experiences while allowing for flexibility and emergent probing. Semi-structured interviews offer a productive balance between thematic consistency across informants and responsiveness to individual narratives a quality particularly well-suited to the study of knowledge systems that defy standardised categorisation (Kvale & Brinkmann, 2009).

3.2 Study Site and Setting

The study was conducted in Yaoundé, the political capital of Cameroon and a city of approximately 4 million inhabitants. Yaoundé presents a highly diverse urban healthcare landscape, encompassing public and private biomedical facilities alongside a rich and visible traditional medicine sector. The Mvog-Bi market, one of the city's principal herbalist markets, served as the primary fieldwork site for two of the three interview sequences. Additional interviews were conducted at practitioners' places of exercise in the Mendong district and in the broader urban area.

3.3 Participants and Sampling

Five informants were recruited through purposive sampling (Patton, 2015), based on their availability, willingness to participate, and representation of distinct practitioner profiles within the traditional medicine landscape of Yaoundé. The following profiles were represented:

Table 1. Profile of Study Participants

Participant	Age / Sex	Role	Setting

Phytotherapist-Nutritionist	47, M	Phytotherapist / Nutritionist	Formal practice, Yaoundé
Traditional Healer (tradipraticienne)	35, F	Tradipraticienne / Street vendor	Informal, Yaoundé streets
Herbalist 1 Francine	50–55, F	Herbalist	Mvog-Bi Market, Stand IVe
Herbalist 2	27–30, M	Herbalist	Mvog-Bi Market, Stand 12
Dr MAYOU Serges	31, M	Naturopath	Santé-Bio clinic, Mendong

3.4 Data Collection

Interviews were conducted in French and in Cameroonian French-inflected vernacular between January and March 2026. Each interview followed a shared thematic guide covering five domains: (1) raw material sourcing and plant identification; (2) preparation and transformation processes; (3) formulation and dosage; (4) cultural and anthropological dimensions; and (5) challenges, prospects, and comparisons with modern pharmacy. Interviews were audio-recorded with participants' consent and subsequently transcribed verbatim. Participants were assured of anonymity and confidentiality, and informed consent was obtained prior to all interviews. The study was conducted in compliance with the ethical guidelines applicable to academic research.

3.5 Data Analysis

Transcripts were subjected to inductive thematic analysis following the framework proposed by Braun and Clarke (2006). Analysis proceeded through six stages: data familiarisation, initial code generation, theme identification, theme review, theme definition and naming, and report production. A reflexive approach was adopted throughout, acknowledging the researchers' dual identity as pharmacy students and ethnographic observers. Analytical categories were cross-checked against existing medical anthropology and ethnopharmacology literature to ensure theoretical grounding. Direct quotations are used throughout the findings to preserve informants' voice and epistemological perspective, in keeping with qualitative conventions (Creswell & Poth, 2018).

4. FINDINGS

Five thematic domains emerged from the analysis: (1) raw material sourcing, plant selection, and environmental sustainability; (2) preparation and transformation processes; (3) formulation, dosage, and quality control; (4) cultural identity, spiritual dimensions, and knowledge transmission; and (5) challenges, integration prospects, and the politics of recognition.

4.1 Raw Material Sourcing, Plant Selection, and Environmental Sustainability

4.1.1 Procurement and Harvest Criteria

A fundamental divergence exists among practitioners in terms of how they procure their raw materials. The phytotherapist-nutritionist operates within a formalised supply chain, relying on certified suppliers who provide plants accompanied by quality certificates and phytochemical analyses. This approach, while limiting autonomy in the field, ensures a degree of standardisation and traceability consonant with pharmacological norms (WHO, 2019). As he explained:

Phytotherapist-Nutritionist:

> *"In my practice, I do not intervene directly in plant harvesting, because I work mainly with specialised suppliers. They provide me with plants that are already selected, controlled, and accompanied by certificates of analysis, which gives me a certain assurance regarding their quality, traceability, and active ingredient composition."*

By contrast, the traditional healer and the two herbalists engage in direct procurement, either through personal foraging or through suppliers who harvest from forests around Yaoundé. The herbalists' procurement reflects the economic realities of informal market practice, as Herbalist 2 described:

Herbalist 2 (Mvog-Bi Market):

> *"There are suppliers who go into the bush and strip bark from trees. They place orders at the village and take advantage of people doing timber cutting, since those are the ones who buy the wood. When a supplier goes into*

the forest, he goes into someone's territory if he spots certain trees, he can come and strip them, since the bark grows back."

The naturopath Dr MAYOU Serges articulated the most elaborate and ecologically conscious approach to procurement, articulating criteria for site selection, time of day, plant phenological stage, and environmental conditions all of which find partial support in the ethnopharmacological literature on the variability of secondary metabolite concentrations in medicinal plants (Ncube et al., 2012):

Dr MAYOU Serges (Naturopath):

"I choose plants according to several criteria: the experience transmitted by my elders, the natural habitat of the plant, and visible signs of maturity. I often harvest early in the morning, after the dew, because they say the sap and aroma are then at their best. I avoid roadsides or pesticide-treated fields and favour sacred sites or forests far from pollution."

4.1.2 Plant Identification and the Risk of Misidentification

With the exception of the phytotherapist-nutritionist who delegates identification entirely to laboratory-validated suppliers all practitioners rely on organoleptically grounded identification methods transmitted orally and through apprenticeship. Francine (Herbalist 1) described her approach: "I look most often at the leaves, the stem, and even the flowers. This description was transmitted to me by my late parents." The naturopath supplemented sensory identification with low-dose self-testing before administering a plant preparation to patients a precautionary practice that echoes traditional risk management strategies documented elsewhere in African healing contexts (Bussmann & Sharon, 2006). The absence of formal botanical verification among most practitioners represents a potential source of error with significant clinical implications (Fennell et al., 2004), underscoring the importance of accessible local quality control infrastructure.

4.1.3 Environmental Sustainability

All practitioners demonstrated at least incipient awareness of the ecological pressures associated with wild plant harvesting, though responses varied in sophistication. The naturopath described deliberate rotation of harvesting sites, periods of rest, and small-scale cultivation as mitigation strategies practices consistent with the principles of sustainable harvesting articulated in international guidelines for medicinal plant management (Hamilton, 2004). Herbalist 2 noted that bark regenerates approximately two weeks after stripping, reflecting empirical knowledge of plant biology that supports, to a limited extent, sustainable harvesting practice. However, the absence of formal monitoring or regulation of harvesting activity at the community level remains a structural vulnerability with long-term ecological consequences.

4.2 Preparation and Transformation Processes

4.2.1 Drying, Grinding, and Initial Processing

The initial stages of plant processing drying, grinding, and cutting are universally practised across all informants, albeit with varying degrees of technical understanding of their impact on phytochemical composition. The naturopath demonstrated the most nuanced understanding of the relationship between drying method and active ingredient preservation:

Dr MAYOU Serges (Naturopath):

"Some fragile plants, such as aromatic leaves, dry in the shade to preserve essential oils; other roots or bark can dry in the sun. Drying often reduces water content and can concentrate certain active compounds, but it can also reduce volatile components if done in the sun hence the careful choice of method according to the plant."

This observation aligns with established pharmacognosic evidence: sun-drying causes significant degradation of thermolabile and photosensitive compounds, including certain flavonoids, alkaloids, and volatile oils (Eloff, 1998; Ncube et al., 2012). Traditional healers and herbalists generally dry their materials in the open air, with limited control over temperature and UV exposure, representing a source of preparation variability that has direct implications for therapeutic consistency.

4.2.2 Extraction Methods

All practitioners employ one or more of the classical aqueous extraction methods infusion, decoction, and maceration with the choice of method adapted to the botanical material and the target therapeutic compound. The naturopath provided the most systematic account of extraction logic:

Dr MAYOU Serges (Naturopath):

"I use infusion for thin leaves and flowers (medicinal teas), decoction for roots, bark, or hard parts boiling for a long time to extract the active principles and maceration to prepare tinctures with alcohol or oil. Distillation is less frequent but used to extract essential oils when the plant permits."

This differentiated extraction practice corresponds closely to principles established in pharmacognosy: infusion is optimal for thermolabile compounds, decoction for heat-stable compounds such as tannins and saponins, and maceration with polar or non-polar solvents for lipophilic compounds and alkaloids (Evans, 2009). Water is the most commonly used solvent across all practitioners, consistent with its documented efficacy as a polar extractor and its cultural availability and safety. The use of alcohol-based maceration by the naturopath introduces additional extraction capacity for non-polar compounds, potentially enhancing the therapeutic profile of the preparation.

4.2.3 Conservation of Prepared Medicines

Conservation strategies vary considerably. The naturopath stores dry plant material in cloth bags or terracotta pots, away from moisture and light, and uses light fumigation to deter insects strategies consistent with traditional preservation techniques documented across Central African herbalism (Betti, 2004). He also applies labelling with preparation date and plant identity, a practice that bridges empirical tradition and pharmacopoeial best practice.

Francine (Herbalist 1) reported the addition of Costus afer locally known as the "twin's cane" to prepared decoctions as a conserving agent. This practice has significant scientific support: Costus afer has been shown to possess potent antimicrobial and antibacterial properties (Akuodor et al., 2011), providing a compelling example of traditional empirical knowledge that anticipates, and is validated by, modern pharmacological research.

4.3 Formulation, Dosage, and Quality Control

4.3.1 Polypharmacy and Synergistic Formulation

All practitioners employ multi-plant formulations, combining herbs to achieve synergistic therapeutic effects. The logic of combination is guided by empirical observation certain plants are known from long experience to complement each other, with one providing the primary therapeutic effect and another attenuating side effects or enhancing absorption. The naturopath articulated this logic clearly:

Dr MAYOU Serges (Naturopath):

"The formulation rests on experience and observation: we combine plants that complement each other one bringing the main effect, another softening side effects or reinforcing absorption. For example, an anti-inflammatory plant can be combined with a calming plant to improve patient comfort."

This practitioner-level polypharmacy logic has been increasingly recognised in pharmacognosy as a source of biologically meaningful interactions. The concept of synergy in which the therapeutic effect of a plant combination exceeds the sum of its parts has been partially validated in vitro for several Cameroonian plant combinations (Kuete et al., 2011; Nguelefack et al., 2015). Conversely, the risk of antagonistic or toxic interactions in multi-plant preparations is a recognised safety concern that argues for systematic evaluation of traditional formulation practices (Fennell et al., 2004).

4.3.2 Empirical Pharmacovigilance and Dose Adaptation

A particularly significant finding across all informants is the consistent application of dose adaptation based on patient characteristics notably age, sex, weight, and pregnancy status. The naturopath described a rule-of-thumb dosage system:

Dr MAYOU Serges (Naturopath):

"For children one strongly reduces the dose, often by dividing it; for elderly or weakened patients, one starts gently. There are empirical rules: for example, "teaspoon" for children, "tablespoon" for adults, adjusted according to the plant and the strength of the preparation. Pregnant women receive special precautions and certain remedies are avoided."

The avoidance of potentially abortifacient plants during pregnancy documented by both the traditional healer ("there are medicines that can cause miscarriage if too much is taken") and all other practitioners reflects a form of empirical pharmacovigilance with direct clinical relevance. This practice converges with the pharmacological literature documenting the uterotonic properties of several plants commonly used in Cameroonian traditional medicine, including species of Annona and Vernonia (Nguelefack et al., 2015). While empirical dosing lacks the precision of standardised

pharmacological dosing, it represents a functionally adaptive risk-management strategy operating within the knowledge constraints of oral tradition.

4.3.3 Sensory Quality Control

In the absence of laboratory-based quality control, all practitioners rely on sensory indicators odour, colour, taste, and consistency to assess the quality and potency of prepared medicines. The naturopath described using a mild self-test as an additional quality check: administering a small dose to himself or a trusted person before giving a preparation to a patient. While such methods do not meet pharmacopoeial standards (WHO, 2019), they represent a pragmatic and culturally coherent approach to quality assurance that partially compensates for the absence of analytical infrastructure.

4.4 Cultural Identity, Spiritual Dimensions, and Knowledge Transmission

4.4.1 Intergenerational Transmission and the Social Life of Knowledge

Knowledge transmission among traditional medicine practitioners in this study is overwhelmingly intergenerational and practical. Family transmission is the primary channel: four of the five practitioners attribute their foundational knowledge to parents or grandparents. Herbalist 2 expressed this most succinctly: "It is transgenerational my parents taught me and their parents taught them, and so on." The naturopath added the dimension of master-apprentice transmission, involving formal periods of learning by observation, repetition, and active participation, sometimes culminating in an initiation ceremony.

This mode of knowledge transmission is consistent with findings across sub-Saharan Africa and other oral medical traditions (Flint, 2008; Leonti, 2011). It is both a strength ensuring the transmission of contextually adapted, empirically refined knowledge and a vulnerability: the increasing disruption of family structures, urban migration, and the cultural prestige of formal biomedical education reduce the pool of potential successors (Vandebroek et al., 2011). The phytotherapist-nutritionist's hybrid trajectory combining university training with apprenticeship alongside traditional healers may represent a model for the future of traditional medicine transmission in urban Central African contexts.

4.4.2 Spiritual Dimensions and Holistic Healing

The spiritual and cosmological dimensions of therapeutic practice are differentially present among the practitioners studied, ranging from central to absent. The naturopath articulated the most developed account of the spiritual embedding of traditional medicine:

Dr MAYOU Serges (Naturopath):

> *"For many of us, plants have a force or an "energy"; we ask their permission before taking them. Rituals, prayers, and offerings are part of the respect owed to plants and to the spirits of the place. This spiritual dimension is seen as complementary to the pharmacological effect: it opens the patient and the community to holistic healing."*

The traditional healer similarly foregrounded the non-material dimensions of illness and healing: "For me, healing depends not only on plants, but also on the spiritual dimension. One must take into account the patient's inner state." The two herbalists from Mvog-Bi, by contrast, explicitly distanced themselves from ritual practice, asserting identities as technical specialists rather than spiritual intermediaries.

These findings resonate with a substantial body of medical anthropological scholarship on the role of ritual, meaning, and symbolic efficacy in healing (Kleinman, 1980; Moerman, 2002). Biomedical constructs of the placebo effect, psychoneuroimmunology, and patient-centred care increasingly acknowledge the therapeutic relevance of meaning-making, social support, and the therapeutic relationship all dimensions in which traditional medicine's ritual framework may confer genuine benefits (Singer & Baer, 2012).

4.4.3 Cultural Taboos and Protective Interdictions

All practitioners affirmed the existence of cultural taboos and therapeutic interdictions associated with the preparation and administration of certain medicines. These include prohibitions on specific plants or preparations for pregnant women and young children, restrictions on harvesting during mourning periods, and the reservation of certain knowledge and remedies for initiated practitioners. These interdictions serve multiple functions: they encode accumulated empirical safety knowledge in a culturally legible form, reinforce the social boundaries of the practitioner role, and connect therapeutic practice to a broader cosmological order (Last & Chavunduka, 1986).

4.5 Challenges, Integration Prospects, and the Politics of Recognition

4.5.1 Structural Challenges

Practitioners identified a consistent set of structural challenges: the progressive disappearance of certain plant species due to deforestation and over-harvesting; the absence of dose standardisation and preparation consistency across lots; the lack of quality control infrastructure; regulatory pressure without institutional support or training; and the stigmatisation of traditional medicine by biomedical institutions. The herbalists from Mvog-Bi offered candid accounts of the social marginalisation they experience:

Herbalist 2 (Mvog-Bi Market):

"It is only when people are not satisfied with hospitals that they come to us, and they always want to pay less than the price they diminish us, forgetting that they are here because it went beyond the hospital's capacity."

This account reflects patterns documented in the broader literature on traditional healer marginalisation in urban Africa (Ngogang et al., 2007). It also gestures toward an important structural paradox: patients who have failed to find relief in biomedical settings turn to traditional medicine as a last resort, imposing informal hierarchies that undervalue traditional medicine while depending on it.

4.5.2 The Asymmetry of Collaboration with Biomedical Researchers

A particularly sensitive theme across the interviews was the nature of encounters between traditional practitioners and biomedical researchers. Both the herbalists and the naturopath reported experiences of what might be characterised as extractive research: scientists purchasing plant samples and conducting interviews without establishing genuine reciprocal partnerships, sharing findings, or ensuring equitable benefit distribution:

Dr MAYOU Serges (Naturopath):

"I have had some contacts with researchers who wanted to analyse certain plants; this allowed validating or refuting some uses and learning modern extraction methods. These collaborations require time and trust, and I sometimes felt an asymmetry: we share our knowledge, but the recognition and benefits are not always equitable. I would like more partnerships that respect the intellectual property of communities."

This testimony echoes a long-standing critique in the ethnobotany and bioprospecting literature regarding the appropriation of traditional knowledge without adequate recognition or compensation a problem now addressed, at least in principle, by the Nagoya Protocol on Access and Benefit-Sharing (Convention on Biological Diversity, 2011). Translating international bioethical principles into equitable local research practice in Cameroon remains an unfinished institutional project.

4.5.3 Prospects for Integrative Collaboration

Despite these challenges, practitioners expressed openness to and in some cases actively advocated for collaborative models that combine traditional and biomedical expertise. The naturopath proposed a set of concrete innovations:

Dr MAYOU Serges (Naturopath):

"I would propose joint training programmes (herbalists plus pharmacists), local laboratories for simple analyses (quality control), and sustainable cultivation protocols. Standardisation of extracts, clear labelling, and benefit-sharing frameworks would help valorise our resources. Also, pilot formulation projects standardised tinctures, ointments could show the way forward."

These proposals align closely with the strategic priorities identified in the WHO Traditional Medicine Strategy 2014–2023 (WHO, 2019) and with academic recommendations for the integration of traditional medicine into national health systems in sub-Saharan Africa (Bodeker & Kronenberg, 2002; Mahomoodally, 2013). They also anticipate the institutional priorities of the nascent Cameroonian framework for traditional medicine regulation, which is currently under development under the auspices of the Ministry of Public Health.

5. DISCUSSION

5.1 A Coherent, Adaptive Therapeutic System

The findings of this study challenge reductive portrayals of traditional medicine as merely a residue of pre-modern belief or a substitute healthcare resource for the poor. The five practitioners studied exhibit coherent therapeutic logics, adaptive knowledge systems, and empirically calibrated risk management practices that deserve serious engagement from

both medical anthropology and pharmacognosy. Their practices are neither static nor uncritical: they adapt formulations, observe outcomes, adjust doses, and incorporate knowledge from other cultural traditions in ways that are functionally analogous to the adaptive learning processes of biomedical practice.

This picture is consistent with the theoretical framework of "explanatory models" proposed by Kleinman (1980), which holds that all healthcare systems biomedical and traditional alike operate through coherent interpretive frameworks that assign causes, meanings, and treatments to illness episodes. It is also consistent with Etkin's (2006) argument that traditional pharmacopoeias are dynamic, historically responsive knowledge systems rather than fixed ethnographic artefacts. The plurality of practitioner profiles encountered ranging from the academically trained phytotherapist-nutritionist to the empirically grounded street-level herbalists illustrates the adaptive range of this system across different social and educational positions.

5.2 Convergences and Divergences with Biomedical Pharmacology

The most striking convergence between traditional practice and biomedical pharmacology is the practitioners' implicit pharmacovigilance logic. The consistent adaptation of doses to age, sex, and pregnancy status; the avoidance of potentially harmful plant combinations; and the use of sensory quality indicators all reflect functional equivalents of the safety monitoring processes that underpin pharmacological practice. The empirical use of Costus afer as a preservative subsequently validated by antimicrobial research (Akuodor et al., 2011) exemplifies the pharmacological significance of traditional knowledge that is often dismissed as unscientific.

The most significant divergence lies in standardisation: the variability in plant quality, extraction method, solvent type, dose, and conservation strategy across and within practitioner profiles makes it difficult to ensure therapeutic consistency or to conduct rigorous comparative efficacy studies. This is not merely a technical limitation but a structural one, reflecting the absence of analytical infrastructure, regulatory support, and quality assurance frameworks accessible to traditional practitioners. Addressing this divergence without erasing the cultural and contextual specificity that gives traditional medicine its adaptive value is the central challenge of traditional medicine integration (Bodeker & Kronenberg, 2002).

5.3 The Politics of Recognition and the Ethics of Collaboration

The experiences of marginalisation and asymmetric research relationships reported by the practitioners in this study are not incidental but structural. They reflect a broader configuration of power in which biomedical institutions, pharmaceutical companies, and academic researchers occupy the positions of legitimacy, funding, and knowledge valorisation, while traditional practitioners provide the raw material both botanical and epistemological that generates commercial and scientific value (Ngogang et al., 2007). This configuration is ethically untenable and practically counterproductive: it discourages knowledge sharing, undermines trust, and forecloses the collaborative relationships that would benefit both systems.

The Nagoya Protocol (Convention on Biological Diversity, 2011) and the emerging framework of community intellectual property rights offer promising legal instruments for addressing these asymmetries, but their practical implementation in Cameroonian contexts requires sustained institutional attention. Medical anthropologists, pharmacognosists, and public health researchers based at institutions such as the University of Yaoundé I have a particular responsibility and opportunity to model ethical, reciprocal, and equitable forms of collaboration with traditional medicine practitioners.

5.4 Limitations

Several limitations of this study should be acknowledged. The small sample size (N = 5) and purposive sampling method limit the generalisability of findings to the broader population of traditional medicine practitioners in Yaoundé or Cameroon. Language differences between standard French and locally inflected vernacular may have introduced minor translation nuances in the transcription and analysis process. Future research should employ larger, more diverse samples, longer fieldwork periods, and ideally participatory methods that give practitioners greater agency in the research process.

6. CONCLUSION

This study has offered a qualitative, empirically grounded account of the knowledge systems, therapeutic practices, and socio-cultural identities of five traditional medicine practitioners in Yaoundé, Cameroon. The analysis reveals a

coherent, adaptive, and culturally embedded therapeutic system characterised by sophisticated plant knowledge, implicit pharmacovigilance logic, rich intergenerational transmission mechanisms, and a productive if sometimes asymmetric engagement with biomedical actors and knowledge.

Three overarching conclusions can be drawn. First, traditional medicine in urban Cameroon is neither homogeneous nor static: it encompasses a range of practitioner profiles, knowledge orientations, and institutional positions that resist simple typologies and demand fine-grained ethnographic attention. Second, the convergences between traditional medicine and biomedical pharmacology in areas such as dose adaptation, polypharmaceutical formulation, and plant conservation are substantial enough to constitute a genuine basis for integrative collaboration, provided that this collaboration is grounded in mutual respect, equitable benefit-sharing, and support for quality standardisation. Third, the structural marginalisation of traditional medicine practitioners in Cameroon is a public health problem as well as an ethical one: it suppresses valuable knowledge, discourages collaboration, and deprives patients of the complementary benefits of an integrated healthcare system.

The sustained engagement with traditional medicine practitioners in the field, in the curriculum, and in research is not merely an academic exercise but a contribution to the preservation and responsible valorisation of one of Central Africa's most important cultural and therapeutic heritages.

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