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Medicial plants: knowledge of Primary Health Care professionals in Basic Health Units, Eunápolis, Bahia

Plantas medicinais: conhecimento dos profissionais das Unidades Básicas de Saúde, Eunápolis, Bahia

Plantas medicinales:conocimiento de los profesionales de las Unidades Básicas de Salud, Eunápolis, Bahía

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Abstract

Objective: To assess the knowledge and use of Integrative and Complementary Health Practices (ICHP), with emphasis on medicinal plants and herbal medicines, among healthcare professionals in the municipality of Eunápolis, Bahia, Brazil. **Methods:** This is an observational study with a descriptive, cross-sectional design, using a mixed-methods (quantitative and qualitative) approach. Data were collected through semi-structured interviews conducted with 25 professionals working in Primary Health Care. **Results:** Most participants reported being familiar with ICHP; however, only a limited number of practices were mentioned. Greater familiarity was observed regarding medicinal plants. A total of 48 species were identified, with *Lippia alba* presenting the highest relative importance, followed by *Mentha piperita*, *Cymbopogon citratus*, and *Matricaria chamomilla*. The most frequent therapeutic indications were related to circulatory and nervous system conditions, as well as mental, behavioral, or neurodevelopmental disorders. **Conclusion:** Knowledge was restricted to few practices and strongly associated with phytotherapy and traditional knowledge, highlighting training gaps and the need for professional qualification to strengthen comprehensive care and the implementation of ICHP in Primary Health Care.

Descriptors:
Public health. Primary Health Care. Complementary Therapies. Medicinal Plants.

Whats is already known on this?
Medicinal plants are widely used in Primary Care, associated with traditional knowledge and the promotion of the comprehensiveness of care.

What this study adds?
Reveals limited knowledge of professionals about PICS, with a focus on phytotherapy, highlighting the need for qualification for its implementation in Primary Health Care.

Resumo

Objetivo: Levantar o conhecimento e o uso das Práticas Integrativas e Complementares em Saúde (PICS), com ênfase nas plantas medicinais

e fitoterápicos, pelos profissionais de saúde do município de Eunápolis, Bahia, Brasil. **Métodos:** Trata-se de um estudo de caráter observacional, com delineamento descritivo e transversal, desenvolvido a partir de abordagem quali-quantitativa. A coleta de informações ocorreu por meio de entrevistas semiestruturadas aplicadas a 25 profissionais atuantes na Atenção Primária à Saúde do município. **Resultados:** Verificou-se que a maioria dos participantes relatou conhecer as PICS, embora tenha mencionado um número restrito de práticas. Observou-se maior familiaridade com o uso de plantas medicinais. Ao todo, foram registradas 48 espécies, destacando-se *Lippia alba* como a de maior importância relativa, seguida por *Mentha piperita*, *Cymbopogon citratus* e *Matricaria chamomilla*. As indicações terapêuticas mais frequentes estiveram relacionadas a agravos dos sistemas circulatório e nervoso, além de transtornos mentais, comportamentais e do neurodesenvolvimento. **Conclusão:** O conhecimento mostrou-se restrito a poucas práticas e fortemente associado à fitoterapia e ao saber tradicional, evidenciando lacunas formativas e necessidade de qualificação profissional para fortalecimento da integralidade do cuidado e implementação das PICS na Atenção Primária à Saúde.
Descritores:
Saúde Pública. Atenção Primária à Saúde. Terapias Complementares. Plantas Medicinais.

Resumen
Objetivo: Evaluar el conocimiento y el uso de las Prácticas Integrativas y Complementarias en Salud (PICS), con énfasis en plantas medicinales y fitoterápicos, entre profesionales de la salud del municipio de Eunápolis, Bahía, Brasil. **Métodos:** Se trata de un estudio observacional, de tipo descriptivo y transversal, con enfoque mixto (cuantitativo y cualitativo). La recolección de datos se realizó mediante entrevistas semiestructuradas aplicadas a 25 profesionales de la Atención Primaria de Salud. **Resultados:** La mayoría de los participantes refirió conocer las PICS; sin embargo, se mencionó un número limitado de prácticas. Se evidenció mayor familiaridad con el uso de plantas medicinales. Se registraron 48 especies, destacándose *Lippia alba* con mayor importancia relativa, seguida de *Mentha piperita*, *Cymbopogon citratus* y *Matricaria chamomilla*. Las indicaciones terapéuticas más frecuentes se relacionaron con enfermedades del sistema circulatorio y nervioso, así como con trastornos mentales, conductuales o del neurodesarrollo. **Conclusión:** El conocimiento se mostró restringido a pocas prácticas y fuertemente asociado a la fitoterapia y al saber tradicional, evidenciando brechas formativas y la necesidad de cualificación profesional para fortalecer la integralidad del cuidado y la implementación de las PICS en la Atención Primaria de Salud.
Descriptores:
Salud Pública. Atención Primaria de Salud. Terapias Complementarias. Plantas Medicinales.

INTRODUCTION

The search for better health conditions and quality of life has accompanied the trajectory of humanity, often associated with the use of practices aimed at health promotion and non-biomedical care, involving the interaction between the individual, their body, and the environment. In this context, Integrative and Complementary Health Practices (ICHP) are configured as therapeutic resources that

complement the Western biomedical model or act in the prevention of health problems, being grounded in traditional knowledge.[1] These practices have an ancestral origin and are widely disseminated in different regions of the world, especially in Eastern countries, and, in recent decades, have been expanding within the Western context.[2-4]

In the Brazilian scenario, the institutionalization of these practices occurred in 2006, with the approval of the National Policy on Integrative and Complementary Practices (NPICP) within the scope of the Unified Health System (SUS), through Ordinance GM/MS No. 971, approved by the National Health Council. This policy establishes guidelines, objectives, and responsibilities among different levels of management, in addition to defining the practices initially offered, such as homeopathy, traditional Chinese medicine/acupuncture, and the use of medicinal plants and phytotherapy, also including observatories focused on anthroposophic medicine and social thermalism/balneotherapy.[5,6]

Subsequently, the NPICP underwent expansion, incorporating, in 2017, new practices such as art therapy, ayurveda, biodance, circular dance, meditation, music therapy, naturopathy, osteopathy, chiropractic, reflexotherapy, reiki, shantala, integrative community therapy, and yoga.[7] This movement broadened the therapeutic possibilities offered to users, contributing to the comprehensiveness and resolvability of health care.[8] In 2018, additional practices were included, such as apitherapy, aromatherapy, bioenergetics, family constellation, chromotherapy, geotherapy, hypnotherapy, laying on of hands, ozone therapy, and flower therapy.[1] The expansion of the set of ICHPs within the SUS reinforces their potential in health promotion, prevention, and recovery, as well as favoring access, humanization of care, and strengthening of the system's principles, including user co-responsibility.[9]

In line with these guidelines, also in 2006, the National Policy on Medicinal Plants and Herbal Medicines (NPMPHM) was established, articulated with the National Pharmaceutical Assistance Policy. This policy regulates the use of medicinal plants and herbal medicines, acting transversally in the implementation of actions aimed at improving the population's quality of life, ensuring the safe and rational use of these resources, as well as valuing biodiversity and strengthening the production chain.[10] The NPMPHM was updated in 2023 with an emphasis on innovation, sustainability, and the strategic role of biodiversity.[11]

Medicinal plants stand out as one of the main therapeutic resources within ICHPs, with their use being more frequent in Primary Health Care (PHC).[12] This level of care constitutes a privileged space for the development of these practices, as it is directly related to the territory, culture, and knowledge of the community, where care is permeated by knowledge transmitted across generations.[13]

The appreciation of popular knowledge by health professionals can significantly contribute to the care process, especially with regard to the use of medicinal plants, in addition to fostering the strengthening of the bond with the community. The use of these natural resources by the population is often associated with the belief in their effectiveness in addressing health problems, symptoms, and everyday situations.[14]

Despite the existence of this body of traditional knowledge and the presence of public policies that encourage the integration of ICHPs in Brazil, as well as the recommendations of the World Health Organization (WHO) for their incorporation into Primary Health Care (PHC),[15] challenges persist that hinder their effective implementation. Although the use of these practices has been growing globally, their institutionalization within health services has not kept pace with this expansion, possibly due to the predominance of the biomedical model and the emphasis on predominantly quantitative scientific evidence, to the detriment of qualitative approaches. [15-17]

In this context, it is observed that ICHPs still have limited integration into public health services, especially in the state of Bahia, and are often little known or even discredited by professionals and managers.[18-20] Therefore, the objective of this study was to gather, from PHC health professionals in the municipality of Eunápolis, Bahia, information regarding knowledge related to ICHPs, particularly the use of medicinal plants and herbal medicines.

METHODS

Study setting

The study was conducted in the municipality of Eunápolis, located in the Extreme South of the state of Bahia, at the intersection of the BR-101 and BR-367 highways, approximately 671 km from the state capital, Salvador, and 55 km from Porto Seguro. The municipality is part of the Porto Seguro microregion, which comprises the municipalities of Guaratinga, Itabela, Eunápolis, Itagimirim, Itapebi, Porto Seguro,

Santa Cruz Cabrália, and Belmonte. It has a territorial area of 1,425.970 km², a tropical climate, a predominance of the Atlantic Forest biome, and an estimated population of 113,710 in habitants in 2022. [21]

Eunápolis serves as a reference for health services in the microregion, offering facilities such as a Regional Health Polyclinic, Blood Center, Regional Health Center/Base Eunápolis, and Regional Hospital. Within the scope of Primary Health Care (PHC), the municipality has 36 Family Health teams distributed across 26 Basic Health Units (BHUs), organized into five health regions.

The study was conducted in five BHUs (Iris Lopes, Moisés Reis, Tadeu Tavares Leite, João Nunes da Silva, and Antônio Lima Ribeiro), with one unit selected from each health region in order to encompass the municipality's territorial diversity. The Iris Lopes and João Nunes da Silva units are located in rural areas, representing important access points to health services for these populations. In contrast, the Moisés Reis, Tadeu Tavares Leite, and Antônio Lima Ribeiro BHUs are located in urban areas, specifically in peripheral neighborhoods (Moisés Reis, Parque da Renovação, and Pequi, respectively). Together, these units serve approximately 14,270 adult users, playing a relevant role in access to health care.[22]

Study design

This is an observational, descriptive, cross-sectional study with a mixed-methods approach, encompassing both quantitative and qualitative methods. Data collection was carried out in December 2022 and January 2023 in the five selected BHUs, through interviews with 25 PHC professionals, including members of the Extended Family Health and Primary Care Center teams.

The sample was defined by convenience, characterizing it as non-probabilistic, with no records of refusals or sample losses during data collection.

For data collection, a semi-structured questionnaire composed of 19 questions was used, encompassing sociodemographic variables (sex, age, professional category, education level, and length of service in the SUS), as well as aspects related to knowledge, use, and perception of ICHPs, with an emphasis on medicinal plants. The interviews were conducted by a researcher in a private setting within the BHUs, ensuring participants' privacy.

Information regarding the species of medicinal plants cited, forms of use, and therapeutic indications was systematized, as well as data on the origin of participants' knowledge. The main limitations and challenges related to the implementation of ICHPs within the SUS were also identified and recorded.

The data collection instrument consisted of a semi-structured questionnaire with 19 questions, developed by the researchers based on national scientific literature[8,29,34-37,39-43,46,51,60-63] on Integrative and Complementary Health Practices, considering the study objectives, and approved by the Ethics Committee. The instrument was structured to include sociodemographic variables, knowledge, use, and perceptions regarding ICHPs, with emphasis on medicinal plants/phytotherapy. Prior to data collection, a pilot study (pre-test) was conducted with eight undergraduate students from health-related programs at the Federal University of Southern Bahia, aiming to assess the clarity, comprehension, relevance, and adequacy of the questions in relation to the research objectives. Based on the contributions obtained at this stage, editorial and organizational adjustments were made to the questions, in order to improve the precision and clarity of the instrument before its final application to the study participants.

Ethical aspects

The study was approved by the Research Ethics Committee of the Federal University of Southern Bahia, under opinion No. 7,064,787, in accordance with the ethical recommendations of Resolution 466/2012 of the National Health Council. The inclusion criteria were: being part of the health professional staff belonging to the multidisciplinary teams of the BHUs Iris Lopes, Moisés Reis, Tadeu Tavares Leite, João Nunes da Silva, and Antônio Lima Ribeiro, with a completed higher education degree, of both sexes. The exclusion criteria were: professionals on leave from work or on vacation during the interview period.

Data analysis

The collected data were initially tabulated in Microsoft Excel spreadsheets, containing information regarding the species of medicinal plants mentioned, their forms of use, and therapeutic purposes. Whenever possible, botanical identification of the species was carried out with the support of images and specialized references. For qualitative analysis, thematic analysis was employed, which enabled the identification of meaning units, recurring themes, and emerging patterns in the participants' statements. The development of the study followed the recommendations of the Consolidated Criteria for Reporting Qualitative Research (COREQ), ensuring transparency, methodological rigor, and scientific quality.[23]

The Relative Importance (RI) of the cited species was estimated for each group of interviewees, with those presenting higher values (maximum = 2) considered more relevant, as they were associated with a greater diversity of body systems and therapeutic properties. [24] The RI was calculated using the expression: RI = NSC + NP, where NSC corresponds to the ratio between the number of body systems treated by a given species (NSCE) and the total number of body systems treated by the most versatile species (NSCEV). NP refers to the ratio between the number of properties attributed to a species (NPE) and the total number of properties attributed to the most versatile species (NPEV).

The Informant Consensus Factor (ICF) was used to identify the most locally relevant body systems, based on the aggregation of popular indications into broader categories, according to the adaptation proposed by Trotter and Logan[25] and Oliveira et al.[4]. This index ranges from 0 to 1, with values closer to 1 indicating greater agreement among participants regarding the use of species within a given category. The ICF was calculated using the formula: ICF = (NAR − NA) / (NAR − 1), where NAR represents the total number of use reports per category and NA corresponds to the number of species indicated for that same category.

The therapeutic indications of the mentioned medicinal plants were organized into categories of body systems and health conditions, according to the International Statistical Classification of Diseases and Related Health Problems (ICD-11) of the World Health Organization (WHO).[26] The following categories were considered: infectious or parasitic diseases; neoplasms; diseases of the blood and hematopoietic organs; diseases of the immune system; endocrine, nutritional, or metabolic diseases; mental, behavioral, or neurodevelopmental disorders; sleep–wake disorders; diseases of the nervous system; diseases of the visual system; diseases of the ear or mastoid process; diseases of the circulatory system; diseases of the respiratory system; diseases of the digestive system; skin diseases; diseases of the musculoskeletal system or connective tissue; diseases of the genitourinary system; conditions related to sexual health; as well as symptoms, signs, or clinical findings not classified elsewhere.

RESULTS

A predominance of female participants was observed (76%), with a higher concentration in the 31 to 50 age group (64%). Regarding education, 96% of the professionals held a specialization degree. Concerning length of service in the Unified Health System (SUS), 76% reported at least five years of experience, with a mean of 10.48 years, ranging from one to thirty years.

The composition of the Primary Health Care (PHC) teams included professionals from different categories, also encompassing the Extended Family Health and Primary Care Center: physicians (n=5), nurses (n=5), dentists (n=4), psychologists (n=3), social workers (n=3), nutritionists (n=2), physical education professionals (n=2), and a physiotherapist (n=1).

With regard to knowledge about Integrative and Complementary Health Practices (ICHPs), 60% of participants reported being familiar with them, while 44% recognized them as a therapeutic modality. However, when specifying which practices were known, it was found that, among the 29 recognized practices,[1] only three were mentioned, with emphasis on medicinal plants/phytotherapy (68.75%), followed by Traditional Chinese Medicine (TCM)/acupuncture (25%) and aromatherapy (6.25%). Additionally, 32% of the professionals reported using ICHPs at a personal level, with phytotherapy again being the most frequent, followed by aromatherapy.

Regarding professionals' attitudes toward users' requests to use ICHPs as a complementary or alternative approach to synthetic allopathic medications, 36% expressed support, 8% adopted a neutral position, and 56% were unable to provide an opinion, attributing this limitation to a lack of knowledge or familiarity with these practices. It is noteworthy that only one professional (a physician) reported having participated in specific training in ICHPs, being qualified in Traditional Chinese Medicine/acupuncture.

With respect to the use of medicinal plants, 80% of participants reported having used or currently using these resources. A total of 48 species distributed across 27 botanical families were recorded (Table 1), with Asteraceae (7 spp.), Lamiaceae (6 spp.), Fabaceae (4 spp.), Lauraceae (3 spp.), and Zingiberaceae (3 spp.) being the most representative.

Regarding forms of preparation and use, leaves were the most frequently mentioned plant part (64%), followed by stems (10%), flowers (8%), and seeds (8%). Preparation in the form of tea, either by infusion or decoction, was the most commonly reported method of use, cited by 70% of participants (Table 1).

Among the identified species, there was a predominance of exotic plants (69.39%) compared to native ones. The species considered most versatile in terms of therapeutic indications, according to the Relative Importance (RI) index, were: lemon balm (*Lippia alba*) (RI=2), peppermint (*Mentha piperita*) (RI=1.87), lemongrass (*Cymbopogon citratus*) (RI=1.75), and chamomile (*Matricaria chamomilla*) (RI=1.55) (Table 1).

The medicinal plants mentioned were associated with 38 therapeutic indications, organized into 18 categories of body systems and health conditions (Table 2). The categories with the highest frequency of indications were diseases of the circulatory system, diseases of the nervous system, and mental, behavioral, or neurodevelopmental disorders. The Informant Consensus Factor (ICF) ranged from 0.57 to 1, with a lack of consensus observed only in the neoplasms category (ICF=0) (Table 2).

Table 1. Medicinal plant species and usage information cited by health professionals from Basic Health Units, Eunápolis (BA), Brazil, 2022–2023.

Family/ Species	Common name	Indication for use	BS	Form of use	Plant part used	Origin*	RI
Amaryllidaceae							
Allium cepa L.	Onion	Cough, shortness of breath, asthma	DRS; SSF	Tea	Bulb	Exotic	0,77
Allium sativum L.	Garlic	Cough, shortness of breath, asthma	DRS; SSF	Tea	Bulb, stem	Exotic	0,77
Anacardiaceae							
Schinus terebinthifolia Raddi	Aroeira	Anti-inflammatory	SSF	Tea	Leaf	Native	0,32
Annonaceae							
Annona muricata L.	Soursop	Lung câncer	NEO	Tea	Leaf	Exotic	0,32
Apiaceae							
Foeniculum vulgare Mill.	Fennel	Digestive aid, intestinal colic, carminative, calming, sleep aid, stomach pain	DDS; MBD; SWD	Tea	Seed	Exotic	1,35
Petroselinum crispum (Mill.) Fuss	Parsley	Diuretic	DGU	Tea	Leaf	Exotic	0,32
Asparagaceae							
Dracaena trifasciata (Prain) Mabb.	Santa Bárbara	Stomach pain, digestive aid	DDS	Tea	Leaf	Exotic	0,45
Asteraceae							
Achillea millefolium L.	Dipirona	Not reported	-	Tea	Leaf	Exotic	-
Matricaria chamomilla L.	Chamomile	Calming, digestive aid, anxiety relief, carminative, pain relief and anesthetic effect for the vulvar and perineal region (applied on a sanitary pad)	MBD; DDS; SSF; DGU	Tea	Leaf, flower	Exotic	1,55
Gymnanthemum amygdalinum (Delile) Sch.Bip. ex Walp.	Alumã	Not reported	-	Tea	Leaf	Exotic	-
Bidens pilosa L.	Carrapicho de agulha	Not reported	-	Tea	Leaf	Native	-
Baccharis trimera (Less.) DC.	Baccharis trimera (carqueja)	Weight loss	ENMD	Tea	Leaf	Native	0,32

Eclipta prostrata (L.) L.	Arnica	Pain relief and anesthetic effect for the vulvar and perineal region (applied on a sanitary pad)	SSF; DGU	Tea	Leaf	Native	0,65
Calendula officinalis L.	Calendula	Pain relief and anesthetic effect for the vulvar and perineal region (applied on a sanitary pad)	SSF; DGU	Tea	Leaf, flower	Exotic	0,65
Brassicaceae *Brassica oleracea* L.	Kale	Stomach pain, digestive aid	DDS	Juice (fresh extract) with milk	Leaf	Exotic	0,45
Cactaceae *Pereskia aculeata* Mill.	Oro-pro-nobis	Anti-inflamatory, imune system support, anemia	SSF; DIS; DBH	*In natura*	Leaf	Native	0,97
Cereus undatus Haw.	Pitaya	Anemia	DBH	Juice (fresh extract)	Leaf	Exotic	0,32
Costaceae *Costus spicatus* (Jacq.) Sw.	"Cana-de-macaco" (Macaw cane)	Kidney problems	DGU	Tea, *in natura*	Leaf, stem	Native	0,32
Cucurbitaceae *Cucurbita pepo* L.	Pumpkic	Not reported	-	Tea	Leaf	Exotic	-
Equisetaceae *Equisetum giganteum* L.	Horsetail	Weight loss, diuretic	ENMD DGU	Tea	Leaf	Native	0,65
Euphorbiaceae *Jatropha multifida* L.	Mercurochrome (merthiolate)	Wound healing, cicatrizant	SD	*In natura*	Leaf-stem juice (fresh extract from leaves and stem)	Native	0,32
Fabaceae *Bauhinia forficata* Link	Bauhinia (cow's paw)	Diabetes – hypoglycemic (blood glucose-lowering) agente	ENMD	Tea	Leaf	Native	0,32
Cassia senna L	Senna	Weight loss	ENMD	Tea	Leaf	Exotic	0,32
Copaifera langsdorffii Desf.	Copaíba	imune system support, cicatrizant	DIS; SD	Essential oil	Stem	Native	0,65
Stryphnodendron adstringens (Mart.) Coville	Barbatimão	Pain relief and anesthetic effect for the vulvar and perineal region (applied on a sanitary pad)	SSF; DGU	Tea	Bark	Native	0,65

Lamiaceae							
Rosmarinus officinalis L.	Rosemary	Hair strengthening, calming, cough relief	SD; MBD; DRS	Tea	Leaf	Exotic	0,97
Melissa officinalis L.	Melissa	Sleep aid (sedative/hypnotic effet)	SWD	Tea	Leaf	Exotic	0,32
Mentha piperita L.	Peppermint	Stomach pain, digestive aid, antihypertensive, calming, constipation relief, throat inflammation, immune system support	DDS; DCS; MBD; DRS; DIS	Tea	Leaf	Exotic	1,87
Plectranthus barbatus Andrews	Boldo	Abdominal pain, diarrhea, stomach pain, nausea, digestive aid	DDS	Tea, macerated preparation, juice	Leaf	Exotic	0,82
Lavandula sp.	Lavender	Sleep aid (sedative/hypnotic effet)	SWD	Essential oil	Flower	Exotic	0,32
Origanum vulgare L.	Oregano	Colic (cramp pain)	SSF	Essential oil	Leaf	Exotic	0,32
Lauraceae							
Cinnamomum cassia (L.) J.Presl	Cinnamon	Termogenic, carminative, immune system support, anti-inflamatory	DIS; DDS; ENMD; SSF	Macerated poder, tea, water infusion (steeping)	Stem	Exotic	1,3
Laurus nobilis L.	Bay leaf	Diuretic	DGU	Tea	Leaf	Exotic	0,32
Persea americana Mill.	Avocado	Not reported	-	Tea	Leaf	Exotic	-
Lythraceae							
Punica granatum L.	Pomegranate	Throat inflammation	DRS	*In natura*	Seed	Exotic	0,32
Moraceae							
Morus nigra L.	Mubelrry	Hormone replacement, menopause	ENMD	Tea	Leaf	Exotic	0,45
Musaceae							
Musa paradisiaca L.	Banana heart	Cough, shortness of breath, asthma	DRS; SSF	Tea	Flower	Exotic	0,77
Myrtaceae							
Psidium guajava L.	Guava	Diarrheia	DDS	Tea	Leaf	Native	0,32
Phyllanthaceae							
Phyllanthus sp.	Stonebreaker	Kidney stones, kidney problems	DGU	Tea	Leaf	Native	0,45
Plantaginaceae							
Plantago major L.	Plantain	Anti-inflamatory	SSF	Tea	Leaf	Exotic	0,32
Poaceae							
Cymbopogon citratus (DC.) Stapf	Lemongrass	Colic, headache, digestive aid, carminative, calming, sleep aid	SSF; DDS; DNS; MBD; SWD	Tea, essential oil	Leaf	Exotic	1,75
Avena sativa L.	Oats	Dermatitis	SD	Bath	Seed	Exotic	0,32
Rutaceae							

Citrus latifolia (Yu. Tanaka) Tanaka	Lemon	Immune system support, gastritis, digestive aid	DIS; DDS	Juice	Fruit	Exotic	0,77
Sapindanceae *Paullinia cupana* Kunth	Guaraná	Termogenic	ENMD	Macerated poder	Seed	Native	0,32
Verbenaceae *Lippia alba* (Mill.) N.E.Br. ex Britton & P.Wilson	Lemon balm	Colic, headache, digestive aid, calming, sleep aid, constipation relief, anxiety, carminative	SSF; DDS; DNS; MBD; SWD	Tea	Leaf, stem	Native	2
Xanthorrhoeaceae *Aloe vera* (L.) Burm. f.	Aloe vera	Hemorrhoids, hemorrhoidal thrombosis	DDS	Supoository, ice cube-shaped form	Leat juice (fresh leaf extract)	Exotic	0,45
Zingiberaceae *Curcuma longa* L.	Turmeric	Anti-inflamatory, immune system support	DIS; SSF	Macerated powder, poder with honey (candy), tea	Root	Exotic	0,65
Zingiber officinale Roscoe	Ginger	Cough, immune system support	DRS; DIS	Tea, *in natura*	Root	Exotic	0,65

* Flora do Brasil (Flora e Funga do Brasil, 2022) [27] e Global Biodiversity Information Facility (GBIF) (GBIF, 2021) [28].

BS: body systems; CA: cancer; DBH: diseases of the blood and hematopoietic organs; DCS: diseases of the circulatory system; DDS: diseases of the digestive system; DGU: diseases of the genitourinary system; DIS: diseases of the immune system; DNS: diseases of the nervous system; DRS: diseases of the respiratory system; ENMD: endocrine, nutritional, or metabolic diseases; IR: relative importance; MDB: mental, behavioral, or neurodevelopmental disorders; NEO: neoplasms; SD: skin diseases; SSF: symptoms, signs, or clinical findings not classified elsewhere; SWD: sleep–wake disorders.

Source: developed by the author.

Table 2. Body Systems and Health-Related Conditions with Description of the Informant Consensus Factor (ICF), Eunápolis (BA), Brazil, 2022–2023.

Body systems and health-related conditions (ICD-11)	NAR	NA	Plant	ICF
Certain infectious or parasitic diseases	0	-	-	-
Neoplasms	1	1	Soursop	0
Diseases of the blood or hematopoietic organs	4	2	Oro-pro-nobis, pitaya	0,67
Diseases of the immune system	23	7	Oro-pro-nobis, turmeric, cinnamon, ginger, peppermint, copaiba, lemon	0,73
Endocrine, nutritional, or metabolic diseases	15	7	Mulberry, guarana, cinnamon, Bauhinia (cow's paw), Baccharis trimera (carqueja), senna, horsetail	0,57
Mental, behavioral, or neurodevelopmental disorders	40	6	Lemongrass, lemon balm, fennel, rosemary, chamomile, peppermint	0,87
Sleep–wake disorders	26	5	Lemongrass, lemon balm, fennel, melissa, lavender	0,84
Diseases of the nervous system	20	2	Lemongrass, lemon balm	0,95
Diseases of the visual system	0	-	-	-
Diseases of the ear or mastoid process	0	-	-	-
Diseases of the circulatory system	4	1	Peppermint	1
Diseases of the respiratory system	15	7	Onion, garlic, banana heart, ginger, rosemary, peppermint, pomegranate	0,57
Diseases of the digestive system	53	12	Lemongrass, lemon balm, fennel, cinnamon, guava, boldo, chamomile, peppermint, Santa Bárbara, aloe vera, kale, lemon	0,77
Skin diseases	9	4	Oats, rosemary, copaiba, mercurochrome (merthiolate)	0,62
Diseases of the musculoskeletal system or connective tissue	0	-	-	-
Diseases of the genitourinary system	21	9	Bay leaf, chamomile, "cana-de-macaco" (Macaw cane), stonebreaker (Phyllanthus), horsetail, parsley, arnica, calendula, barbatimão	0,6
Conditions related to sexual health	0	-	-	-
Symptoms, signs, or clinical findings not classified elsewhere	37	11	Onion, garlic, aroeira, ora-pro-nóbis, oregano, cinnamon, banana heart, plantain, lemongrass, lemon balm, turmeric	0,72

ICD: International Statistical Classification of Diseases and Related Health Problems; ICF: Informant Consensus Factor; NA: number of species indicated for each category; NAR: total number of uses reported by each informant for a given category.
Source: developed by the author.

Regarding the origin of knowledge about medicinal plants, there were 17 reports of learning from family members, four from friends/colleagues/neighbors, six from the internet/books, and one from the assisted community. Five interviewees did not respond because they did not use medicinal plants. Concerning their use in BHUs, it was observed that the majority of the interviewed health professionals (56%) had already prescribed/advised and supported their use when requested by users, provided it was concomitant with the synthetic allopathic medication in use. The term "advised" applies to professionals without current legal authorization to prescribe medications. Furthermore, 76% of the professionals

reported perceiving routine use of medicinal plants by BHU users, with no mention of drug interactions and/or toxicity during their practice within the SUS.

DISCUSSION

Knowledge and experience are constructed through the interaction of the individual with the context in which they are embedded, being influenced by lived experiences and social reality.[29] In the present study, although most participants reported being familiar with ICHPs, only three practices were effectively mentioned: medicinal plants/phytotherapy, Traditional Chinese Medicine (TCM)/acupuncture, and aromatherapy. Considering that the NPICP encompasses a broader set of practices that can be offered within the SUS, this finding highlights gaps in professionals' knowledge, which may compromise their incorporation into the routine of Primary Health Care (PHC), as observed in other studies.[9,19,30--31]

It was also observed that some professionals make personal use of ICHPs, with a predominance of phytotherapy. The use of medicinal plants stands out as the most widespread practice, which is also described in the literature, although other approaches such as TCM/acupuncture, homeopathy, chromotherapy, shiatsu, self-massage (Do-in), and yoga are also mentioned.[8,32] In the Brazilian context, the wide availability of plant species and the intergenerational transmission of traditional knowledge favor the use of these practices, often even before seeking formal health services.[10,33-34]

In general, the results indicate limited knowledge among professionals regarding the diversity of existing ICHPs. This limitation may negatively impact the comprehensiveness of care within the SUS, since such practices are recommended—especially in Primary Health Care (PHC)—for fostering user bonding, valuing the territory, and recognizing the community's non-biomedical knowledge.[30,32,35-36] Although the NPICP provides for professional training actions within the SUS, only one participant (a physician) reported being qualified to carry out one of the practices—TCM/acupuncture—highlighting weaknesses in training. Even so, it was possible to identify an interest among professionals in expanding their knowledge on the subject, as reported in other studies.[35,37]

The expansion of training strategies and the effective implementation of ICHPs in health services are essential, considering that their integration into PHC contributes to strengthening the bond between professionals and users, in addition to encouraging co-responsibility in care and valuing traditional knowledge.[16,32] Despite the existence of national policies and encouragement from the WHO, investments in training, research, and funding are still insufficient, and in many municipalities, the implementation of these practices depends on local initiatives and their own resources.[38]

Among ICHPs, phytotherapy/medicinal plants stood out as the most well-known and used by participants, with 48 species recorded, a result similar to that observed in other studies.[20] The most frequently cited botanical families—Asteraceae (7 spp.) and Lamiaceae (6 spp.)—are also commonly reported as predominant in studies conducted in different regions of Brazil.[39-41] These families have wide geographic distribution and high species diversity, which may explain their recurrence in ethnobotanical research.[42]

The Asteraceae family, considered one of the largest among angiosperms, comprises species that are widely distributed and adapted to different environments.[43-44] Some have economic relevance, [44] although certain species may present toxicity when used improperly, as in the case of *B. pilosa*.[42] The Lamiaceae family, also one of the most numerous in terms of species, is characterized predominantly by aromatic plants rich in essential oils, with broad therapeutic applications.[45]

The species with the greatest prominence in the present study was *Lippia alba* (lemon balm), which showed the highest Relative Importance value (RI=2), belonging to the Verbenaceae family, indicating high versatility of use and frequency of citation. This species, native to South America, is widely used in Brazil and frequently reported in the literature as one of the most relevant in the context of traditional medicine.[12,35,46-47] Several studies describe its therapeutic properties, including analgesic, antispasmodic, anti-inflammatory, sedative, antimicrobial, and antiviral actions, as well as its use in gastrointestinal disorders and as a calming agent.[47-50]

Other species also showed high relative importance, such as *Mentha piperita* (peppermint) (RI=1.87), followed by *Cymbopogon citratus* (lemongrass) (RI=1.75) and *Matricaria chamomilla* (chamomile) (RI=1.55). *M. piperita* is widely used in different therapeutic contexts, with applications ranging from mild conditions, such as the common cold and digestive disorders, to antioxidant, antimicrobial, and anti-

inflammatory properties.[51-54] Studies also suggest its preventive potential in chronic diseases, such as diabetes and cardiovascular diseases.[54]

C. citratus presents several biological activities described in the literature, including antioxidant and anticancer actions,[55] larvicidal, hypoglycemic, hypolipidemic, antioxidant, antiprotozoal, antimycobacterial, anti-inflammatory, antidiarrheal, antibacterial, antiamoebic properties, as well as potential neurobehavioral effects,[56] and antifungal activity. [55-57] In turn, *M. chamomilla* has widely recognized properties, such as sedative, digestive, anti-inflammatory, antispasmodic, antimicrobial, and healing effects.[58-59]

The predominance of leaves as the most commonly used plant part reinforces a recurring pattern in ethnobotanical studies, possibly associated with the ease of collection and preparation. [39-40,51] Similarly, preparation by infusion or decoction (tea) was the most frequently cited method, corroborating findings from other studies.[39,46]

The use of medicinal plants is strongly associated with folk medicine, representing knowledge transmitted across generations within family and community settings. In this study, the main source of knowledge reported was the close social network, including family members, friends, and neighbors, which is consistent with the literature.[34-35,46,60]

Studies indicate that health professionals tend to recommend the use of medicinal plants as complementary to conventional treatment, especially when there is adequate clinical follow-up, a scenario also observed in this study.[34-35] In this regard, medical practice may play a strategic role in consolidating phytotherapy within the SUS, contributing to safer use and strengthening the bond with the community.[35]

The analysis of the ICF showed greater agreement in categories related to diseases of the circulatory system (DCS), diseases of the nervous system (DNS), and mental, behavioral, or neurodevelopmental disorders (MBND). The DCS category was associated with one species and four citations of use for reducing blood pressure;(61) followed by the DNS category, with two species and 20 citations of use for headache; and the MBND category,[62] with six species and 40 citations of use for anxiety and calming effects. A similar result was described in the study by Ribeiro et al.(63) These findings reflect relevant demands in the local context, possibly associated with contemporary living conditions that contribute to the increase of health problems related to these systems.[53,64-65]

Finally, the interviewed professionals demonstrated recognition of the use of medicinal plants by the assisted population, in addition to reporting personal use and advisory practices, although still in a limited manner. This scenario indicates potential for the expansion of actions, policies, and programs focused on phytotherapy/medicinal plants at the municipal level, especially considering the expressed interest and the need for professional training to enable more effective performance in PHC.[34]

Limitations and contributions of the study

This study presents limitations that should be considered when interpreting the findings. The cross-sectional design does not allow for establishing causal relationships between knowledge and professional practice. The sample was based on convenience and restricted to health professionals from a single municipality, which limits the generalization of the results to other contexts within the SUS. In addition, the information was obtained through a self-reported instrument, which may be subject to recall bias and social desirability bias, especially considering the influence of popular knowledge in the construction of understanding regarding medicinal plants.

Despite these limitations, the study contributes by highlighting the local panorama of knowledge and use of ICHPs among Primary Health Care (PHC) professionals, identifying training gaps and potential interest in professional qualification. The findings provide support for strengthening the National Policy on Integrative and Complementary Practices, as well as for planning continuing education actions and expanding phytotherapy at the municipal and regional levels.

CONCLUSION

The study showed that, although most health professionals report being familiar with ICHPs, this knowledge is limited to a few modalities, with a predominance of phytotherapy/medicinal plants. Personal use of these practices and guidance provided to users were observed, mainly linked to traditional knowledge and concomitant use with allopathic medications; however, there is low formal qualification for their implementation in Primary Health Care (PHC).

The findings reveal gaps in professional training and indicate the need to expand continuing education and qualification actions in ICHPs, especially at the municipal level. In this sense, the results may support strategies to strengthen the comprehensiveness of care and the implementation of the National Policy on Integrative and Complementary Practices within the PHC context.

CONTRIBUITIONS

Contributed to the conception or design of the study/research: Santos TS, Oliveira GL. Contributed to data collection: Santos TS. Contributed to the analysis and/or interpretation of data: Santos TS, Oliveira GL. Contributed to article writing or critical review: Santos TS, Oliveira GL, Borges GF, Belasco IC. Final approval of the version to be published: Santos TS, Oliveira GL.

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