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Medicinal Plants in Child Healthcare Among Traditional Brazilian Communities: Contributions and Gaps in Ethnobotanical Studies - Integrative Review

Plantas Medicinais no Cuidado Infantil em Comunidades Tradicionais Brasileiras: Contribuições e Lacunas dos Estudos Etnobotânicos - Revisão Integrativa

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Abstract

The knowledge of traditional peoples and communities regarding the use of medicinal plants constitutes an important cultural heritage, built through experience and transmitted across generations. In child healthcare, such knowledge is particularly relevant given the specific characteristics of the pediatric population and the limitations of the available clinical evidence, which are related, among other factors, to the small number of clinical trials specifically involving children. This study aimed to identify the plant species used in child healthcare by traditional Brazilian communities and to analyze the ethnobotanical information reported, considering its potential to support the validation of traditional use. An integrative literature review was conducted, in which eight studies were selected. A total of 75 medicinal species belonging to 38 botanical families were identified, with Lamiaceae, Asteraceae, and Fabaceae being the most represented families, as well as 39 reported uses, mainly for fever, influenza, cough, and sore throat. Leaves were the most frequently used plant parts, and tea was the main preparation method. For eight species, convergence was observed between the reported uses and those recognized in official documents of the Brazilian Pharmacopoeia, suggesting potential interest for future investigations. Among the main gaps identified were the lack of information on treatment duration, the age range of the children, and the quantities used in preparations, in addition to the low frequency of deposition of voucher specimens in herbaria. The results highlight the diversity of species and traditional practices employed in child healthcare, but also the need for greater detail and systematization of ethnobotanical records so that they can support research on safety and effectiveness, as well as compose evidence reports aimed at validating traditional use.

Keywords: Phytotherapy. Traditional Knowledge. Childhood Diseases. Child Health.

Resumo

Os saberes dos povos e comunidades tradicionais sobre o uso de plantas medicinais constituem importante patrimônio cultural, construído a partir de experiências e transmissão entre gerações. No cuidado infantil, assumem particular relevância diante das especificidades da população pediátrica e das limitações das evidências clínicas disponíveis, relacionadas, entre outros fatores, ao baixo número de ensaios clínicos direcionados às crianças. Este estudo objetivou identificar as espécies vegetais utilizadas no cuidado infantil por comunidades tradicionais brasileiras e analisar as informações etnobotânicas reportadas, considerando seu potencial para fundamentar a validação do uso tradicional. Realizou-se uma revisão integrativa da literatura, na qual foram selecionados oito estudos. Identificaram-se 75 espécies medicinais, distribuídas em 38 famílias botânicas, com destaque para Lamiaceae, Asteraceae e Fabaceae, e 39 alegações de uso, principalmente para febre, gripe, tosse e dor de garganta. As folhas foram as partes vegetais mais utilizadas e o chá, a principal forma de preparo. Para oito espécies, observou-se convergência entre os usos registrados e aqueles reconhecidos em documentos oficiais da Farmacopeia Brasileira, sugerindo potencial interesse para futuras investigações. Entre as principais lacunas, destacaram-se a ausência de informações sobre duração do tratamento, faixa etária das crianças e quantidades empregadas nas preparações, além da baixa frequência de depósito de espécimes-testemunho em herbário. Os resultados evidenciam a diversidade das espécies e práticas tradicionais empregadas no cuidado infantil, mas também a necessidade de maior detalhamento e sistematização dos registros etnobotânicos, para que possam subsidiar pesquisas sobre segurança e efetividade, além de compor relatórios de evidências destinados à validação do uso tradicional.

Palavras-chave: Fitoterapia. Conhecimento Tradicional. Doenças Infantis. Saúde da Criança.

1 Introduction

The use of natural resources for therapeutic purposes constitutes an ancestral practice deeply rooted in the healing knowledge of traditional Brazilian communities. Since the arrival of the Portuguese in Brazil in 1500, accounts by priests, missionaries, and naturalists have described the use of plants as medicinal resources by Indigenous peoples (Soares *et al*., 2025). Such practices have historically been valued and, in recent decades, have also come to be recognized through public health policies, such as the National Policy on Integrative and Complementary Practices (NPICP) and the National Policy on Medicinal Plants (NPMP), highlighting their relevance within the scope of Primary Health Care (PHC) (Beltrão *et al*., 2020; Brasil, 2006a, 2006b).

The documentation and validation of these practices may provide particular benefits to the pediatric population, which remains underserved with regard to the development of medicines appropriate for its age group, owing to the limited number of clinical trials specifically targeting children (Beltrão *et al*., 2020; Rolim; Martinez, 2022). In this context, the Herbal Medicines Formulary of the Brazilian Pharmacopoeia (Formulário de Fitoterápicos da Farmacopéia Brasileira - FFFB) and the Herbal Medicine Compendium of the Brazilian Pharmacopoeia (Memento Fitoterápico da Farmacopéia Brasileira - MFFB) include only 14 medicinal species with indications

for use in children under 12 years of age (Brasil, 2016, 2026). Although this number is limited, studies have shown that the use of medicinal plants in childcare is a routine practice in the household setting, particularly for common childhood illnesses such as respiratory infections, diarrhea, and fever, which are frequently treated using homemade preparations, such as teas prepared from plant species cultivated in home gardens (Beltrão *et al*., 2020; Freire *et al*., 2021; Lemos *et al*., 2016).

Knowledge of medicinal plants constitutes an important body of knowledge that reflects the relationships established between human beings and the environment in which they live. It is built upon empirical experiences and observations incorporated into everyday care practices and culturally transmitted across generations, constituting what is referred to as ethnoknowledge (Albuquerque; Hanazaki, 2006; Giraldi; Hanazaki, 2010; Saraiva *et al*., 2017; Sousa; Pinho, 2023). In this context, ethnobotanical studies play a central role in documenting, valuing, and preserving traditional knowledge related to the use of medicinal plants. Such investigations not only contribute to the recognition of Brazil's cultural diversity and biodiversity but also support scientific research aimed at the pharmacological validation and safe use of these plant species (Soares *et al*., 2025).

Against this backdrop, this study aimed to conduct an integrative review of the national scientific literature to identify which plant species are used in childcare by traditional Brazilian communities and to assess whether the reported ethnobotanical information contains elements capable of supporting the validation of traditional use.

2 Material and Methods

This study adopted an integrative literature review, which consists of developing a comprehensive analysis of the literature, contributing to discussions on research methods and findings, as well as reflections on the conduct of future studies (Mendes; Silveira; Galvão, 2008). Following this methodological approach, the procedure comprises the following stages: (1) formulation of the guiding question; (2) literature search or sampling; (3) categorization of the studies; (4) assessment of the included studies; (5) interpretation of the results; and (6) synthesis of knowledge.

The guiding question of the review was developed through an adaptation of the PICo strategy (Santos; Pimenta; Nobre, 2007), considering "P" (Population) as children/the pediatric population in traditional communities, "I" (Interest/Intervention) as the use of medicinal plants in childcare, and "Co" (Context) as the traditional knowledge associated with the use of these plants. Based on this framework, the questions guiding the study were: "Which medicinal plant species are used in

childcare by traditional Brazilian communities, and to what extent does the reported ethnobotanical information encompass the elements established by health regulations to support the validation of traditional use?"

The inclusion criteria adopted for article selection were ethnobotanical studies published in Portuguese, English, or Spanish; conducted in traditional communities in Brazil; with an explicit focus (or clearly segmentable data) on the use of medicinal plants for children/child health; reporting the scientific name of the plant species mentioned; published in peer-reviewed journals, with no lower date limit, up to December 31, 2025. The exclusion criteria were duplicate articles; articles without a focus on traditional communities; studies without mention of pediatric/child use; purely phytochemical or pharmacological studies without an ethnobotanical focus; theses, dissertations, literature reviews, experience reports, editorials, books, book chapters, protocols, manuals, and other publications that did not address the research question; and studies lacking the scientific name of the recorded plant species.

The integrative literature review was conducted through an exploratory search between July 15 and 20, 2026, using systematic searches in the *SciVerse Scopus* (2025), *Web of Science* (2025), PubMed (2025), SciELO (2025), and Google Scholar databases, as these databases are widely recognized for their broad coverage and relevance in indexing studies in the field of ethnobotany.

The search strings used descriptors in Portuguese and English, including the terms "ethnobotanical survey," "ethnobotanical," "ethnopharmacology," "traditional peoples and communities," "traditional community," "Indigenous," "riverine," "Quilombola," "Indigenous peoples," "child," and "pediatric," combined using boolean operators.

Following their selection from the databases, the articles were imported into *Mendeley Reference Manager* software for organization, screening, and removal of duplicate studies, followed by manual selection by the researchers. Subsequently, the articles included in the integrative review were selected, and a table was developed based on these studies containing the medicinal plant species used to treat childhood illnesses.

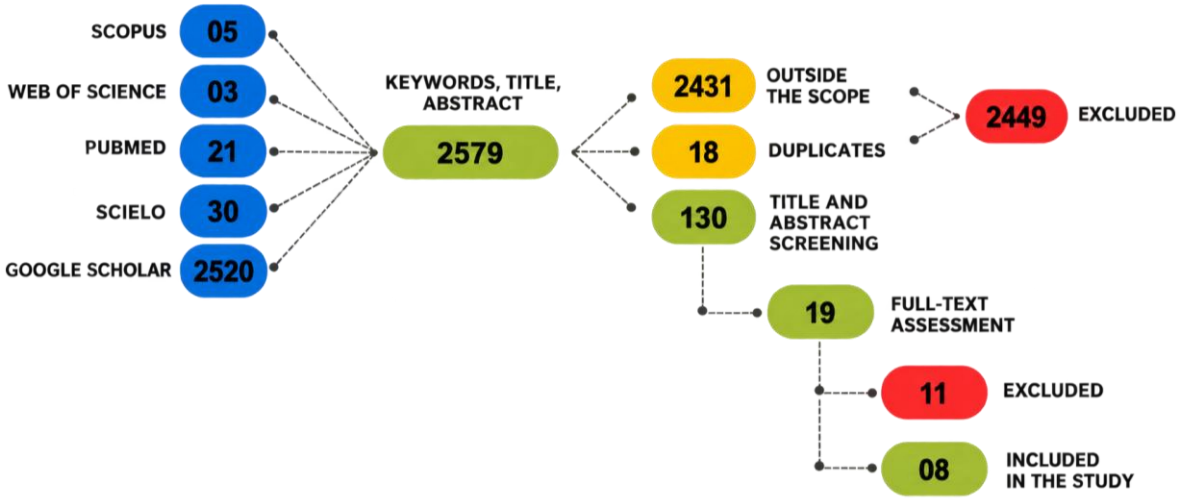
For each medicinal species used, the following information was recorded: common name, scientific name, botanical family, origin, therapeutic indication, plant part used, preparation method, and dosage. Species cited only at the genus level were excluded from the list. Methodological aspects were also assessed, with particular emphasis on the collection of plant material cited by the study participants, followed by the storage of this material in a herbarium. The scientific names of the cited species were updated according to the Flora e Funga do Brasil (2026), Plants of the World Online

(2026), and World Flora Online (2026) databases, while their common names were retained as reported in the selected studies. Finally, a synthesis of the conclusions of the selected studies was conducted to support the overall analysis of the data.

3 Results and Discussion

The database search initially yielded 2.579 records. Following screening, analysis, and title and abstract review, eight articles were selected for the final sample (Figure 1), adapted according to the PRISMA protocol (Haddaway; Page; Pritchard; McGuinness, 2022).

Figure 1 – Flowchart of the selection process for studies included in the integrative review, considering records identified in the databases searched, screening by keywords, titles, and abstracts, and the final selection of articles



Source: the authors.

The analysis of the eight studies revealed a diversity of methodological approaches, including systematic ethnobotanical surveys, qualitative and quantitative studies, and sociocultural research, among others, reflecting the strongly interdisciplinary nature of ethnobotany. This methodological plurality is directly related to the nature of the field itself, which bridges the biological and social sciences and incorporates different forms of knowledge production (Albuquerque *et al*., 2019).

One of the selected studies focused on a single species (*Siparuna guianensis* Aubl.), three addressed specific diseases (anemia, malaria, and respiratory infections), and the remaining four consisted of general ethnobotanical surveys (Table 1). The analyses revealed heterogeneity in the quality and level of detail of the ethnobotanical information. Of the eight selected articles, only two reported the collection of botanical material and the deposition of voucher specimens in a herbarium;

in the remaining studies, the methods used for botanical identification were rarely described.

Table 1 – List of studies included in the integrative review on the use of medicinal plants to treat childhood diseases in traditional Brazilian communities, organized by author(s), year of publication, title, community studied, municipality/state, and database searched

Study code	Author(s)/Year	Title	Traditional community	Municipality/ State	Database
1	Valentini *et al*., 2009	Use and conservation of negramina (*Siparuna guianensis* Aubl.) in Bom Sucesso, Várzea Grande, Mato Grosso	Riverine communities	Várzea Grande, MT	Google Scholar
2	Freitas; Coelho, 2014	"Forest remedies" used by local specialists in the community of São João da Várzea, Mossoró, Rio Grande do Norte, Brazil	Farmers	Mossoró, RN	Google Scholar
3	Vásquez *et al*., 2014*	Ethnobotany of medicinal plants in riverine communities in the municipality of Manacapuru, Amazonas, Brazil	Riverine communities	Amazonas, AM	SciELO
4	Frausin *et al*., 2015*	An ethnobotanical study of antimalarial plants among Indigenous peoples in the Upper Rio Negro, Brazilian Amazon	Indigenous peoples	Amazonas, AM	Google Scholar
5	Lemos *et al*., 2016	Ethnobiological survey of plants and animals used to treat acute respiratory infections in children in a traditional community in the municipality of Barbalha, Ceará, Brazil	Farmers	Barbalha, CE	PubMed
6	Lemos *et al*., 2017	Natural resources for the treatment of anemia in children: contributions to traditional medicine	Farmers	Barbalha, CE	Google Scholar
7	Lima *et al.*, 2017	Popular healing practices and the use of medicinal plants by riverine mothers in childcare	Riverine communities	Amazonas, AM	Google Scholar
8	Silva *et al*., 2019	Knowledge and use of medicinal plants in the Catu community, Canguaretama, Rio Grande do Norte, Brazil	Indigenous peoples	Canguaretama, RN	Google Scholar

Source: research data.

The selected studies revealed a predominance of publications retrieved from Google Scholar (6), PubMed (1), and SciELO (1). Repeated authorship was observed only for Lemos *et al*., who published two studies (2016 and 2017), whereas all other authors were represented by a single publication. Regarding the geographical distribution of the studies across Brazil, the Northeast region showed the highest concentration, with four studies, two conducted in Ceará and two in Rio Grande do Norte. In the North region, three studies were identified, all conducted in the state of Amazonas, while one study was carried out in Mato Grosso, in the Central-West region.

Similarly, although they did not apply the criteria adopted in the present study, Queiroga *et al*. (2023), in their analysis of scientific articles focusing on ethnobotany in Brazil published between 2010 and 2020, found a higher concentration of studies in the Northeast region, followed by the North

region. However, Ritter *et al*. (2014), in their analysis of scientific production in ethnobotany in Brazil, identified the Northeast and Southeast regions as having the highest numbers of studies. The predominance of studies in the Northeast region may be associated with the high biological and cultural diversity of this territory, which encompasses different biomes, traditional communities, and forms of interaction between populations and plant resources (Crepaldi *et al*., 2016).

The studies included in the review encompassed only three types of traditional Brazilian communities across different regions of the country: riverine communities and farming communities, with three studies each, and Indigenous communities, with only two studies. Regarding the temporal distribution, publications spanned the period from 2009 to 2019, with the highest concentration in 2014 and 2017, accounting for two studies each, indicating sporadic research output throughout the period. The small number of ethnobotanical publications focusing on children highlights the need to expand research on traditional knowledge and practices related to the use of medicinal plants in child care. Such studies should encompass not only Indigenous, Quilombola, and riverine populations but also other traditional communities, taking into account Brazil's sociocultural and territorial diversity.

According to Albuquerque *et al*. (2019), bureaucratic hurdles and the complexity of regulatory processes may limit the development of ethnobotanical research on the use of medicinal plants by traditional peoples and communities. According to Silva, Carvalho, and Benevides (2022), among the various factors that may contribute to this low among the factors contributing to the limited diversity of communities studied, Silva, Carvalho, and Benevides (2022) highlight delays in bureaucratic negotiations required to obtain authorization for conducting research. Although these procedures are extremely important, they often lack the necessary expediency.

Table 2 – List of medicinal plant species used to treat childhood diseases by traditional Brazilian communities, as reported in the eight selected articles and identified by the sequential codes provided in Table 1

Family/Species	Common name	Origin	Therapeutic indication	Plant part used	Preparation method	Study code
Acanthaceae						
Justicia pectoralis Jacq*	anador (plant)	N	Headache	Leaf	Tea	7
Amaranthaceae						
Alternanthera brasiliana (L.) Kuntze*	anador	N	Sore throat; Fever	Leaf	Tea (infusion); Tea (decoction)	5
Beta vulgaris L.	beterraba	C	Iron-deficiency anemia in children	Root	In natura; Sap	6
Dysphania ambrosioides (L.) Mosyakin & Clemants	mastruz	NA	Fever; Cough; Productive cough; Pneumonia	Leaf	Tea (infusion); Traditional medicinal syrup (lambedor)	5

Family/Species	Common name	Origin	Therapeutic indication	Plant part used	Preparation method	Study code
Amaryllidaceae						
Allium aescalonicum L.	cebolinha-branca	C	Sore throat; Productive cough; Cough; Hoarseness	Bulb, Leaf	Tea (infusion); Traditional medicinal syrup (lambedor)	5
Allium fistulosum L.	cebolinha	C	Stomach pain in infants	Leaf	Tea	3
Allium sativum L.***	alho	C	Flu; Fever; Throat infection	Fruit (bulb), Clove (bulbils); Leaf	Tea (infusion); Tea (decoction); Juice; Traditional medicinal syrup (lambedor)	7, 5
Allium schoenoprasum L.	cebolinha-fina	C	Newborn infant	Stem	Maceration (internal use)	3
Anacardiaceae						
Anacardium occidentale L.*	caju	N	Diarrhea	Bark	Sap	7
Mangifera indica L.	manga	C	Flu; Productive cough; Iron-deficiency anemia in children	Bark, Leaf	Syrup; Tea (infusion); Juice; Traditional medicinal syrup (lambedor); Tea (infusion)	7, 5, 6
Spondias mombin L.	taperebá	N	Encourage the infant to walk (strengthen the infant's legs); Dry the umbilical stump	Bark, seed	Bath; Poultice	7
Apiaceae						
Daucus carota L.	cenoura	C	Iron-deficiency anemia in children	Root	In natura; Sap	6
Arecaceae						
Acrocomia aculeata (Jacq.) Lodd. ex Mart.	macaúba	N	Flu; Productive cough	Leaf, Bark	Juice; Tea (infusion); Tea (decoction)	5
Bactris gasipaes Kunth	pupunha	N	Anemia	Root	Syrup	7
Cocos nucifera L.	coco	NA	Dysentery; "Tiriça" (neonatal jaundice) in children	Sap (liquid), Fruit (berry/peel)	Sap; Decoction: the coconut fruit is boiled, and the resulting tea is given to the child or used for bathing.	7, 2
Euterpe precatoria Mart.	açaí	N	Anemia	Root	Syrup	7
Asteraceae						
Acanthospermum hispidum DC.	retirante	N	Fever; Productive cough; Bronchitis	Leaf, Root	Tea (decoction); Tea (infusion)	5
Achyrocline satureioides (Lam.) DC.*	carrapicho-de-agulha	N	Sore throat; Fever	Leaf	Tea (infusion)	5
Artemisia vulgaris L.	anador	C	Iron-deficiency anemia in children	Leaf	Tea (infusion)	6
Baccharis trimera (Less.) DC.*	carqueja	N	Iron-deficiency anemia in children	Leaf	Tea (infusion)	6
Pectis brevipedunculata (Gardner) Sch.Bip.	alecrim	N	Fever; Flu; Sinusitis	Leaf, Root	Tea (infusion); Tea (decoction); Bath; Traditional medicinal	5

Family/Species	Common name	Origin	Therapeutic indication	Plant part used	Preparation method	Study code
					syrup (lambedor)	
Tagetes erecta L.	cravo-de-defunto	NA	Nausea in children	Leaf, Flower	Tea; Bath; Maceration (internal use)	3
Bignoniaceae						
Fridericia chica (Bonpl.) L.G.Lohmann	crajiru	N	Anemia	Leaf	Syrup	7
Pleonotoma jasminifolia (Kunth) Miers	cipó-quira	N	Anemia	Leaf	Syrup	7
Tabebuia aurea (Silva Manso) Benth. & Hook.f. ex S.Moore	para-tudo	N	Iron-deficiency anemia in children	Bark, Leaf	Tea (decoction); Tea (infusion)	6
Bixaceae						
Bixa orellana L.	urucum	N	Fever; Fatigue; Flu; Bronchitis; Pharyngitis; Productive cough	Seed, Root	Traditional medicinal syrup (lambedor); Macerate; Tea (decoction)	5
Burseraceae						
Commiphora leptophloeos (Mart.) J.B.Gillett	imburana, umburana	N	Bronchitis; Flu; Cough; Sore throat; Hoarseness	Bark	Tea (decoction); Tea (infusion); Traditional medicinal syrup (lambedor); Macerate	5
Cactaceae						
Cereus jamacaru DC.	mandacaru	N	Fever; Cough; Bronchitis	Bark, Root, Branches	Tea (infusion); Tea (decoction); Traditional medicinal syrup (lambedor)	5
Caricaceae						
Carica papaya L.	mamão, mamoeiro	NA	Fatigue; Fever	Nectar, Flower, Shoot	Traditional medicinal syrup (lambedor); Tea (infusion)	5
Caryocaraceae						
Caryocar coriaceum Wittm.	pequi	N	Sore throat; Bronchitis; Productive cough	Fruit	Traditional medicinal syrup (lambedor); Oil (oral ingestion)	5
Crassulaceae						
Kalanchoe pinnata (Lam.) Pers.	piracuru	NA	Cough	Leaf, Root	Tea (infusion); Traditional medicinal syrup (lambedor); Juice	5
Cucurbitaceae						
Cucurbita pepo L.	jerimum	C	Colic in newborns; Umbilical colic	Stem axis	Decoction: stem axis + water, boiled	2
Dioscoreaceae						
Dioscorea alata L.	cará	C	Anemia	Root	Tea	7
Euphorbiaceae						
Croton campestris St.-Hil.	velame-do-campo	N	Iron-deficiency anemia in children	Root	Tea (decoction); Tea (infusion)	6
Jatropha gossypiifolia L.	tuatuá	N	Anemia	Leaf	Syrup	7
Fabaceae						
Cajanus cajan (L.) Huth	andu	NA	Bronchitis; Constipation; Sore throat; Fever; Cough	Leaf	Tea (decoction); Tea (infusion); Traditional medicinal syrup (lambedor)	5

Family/Species	Common name	Origin	Therapeutic indication	Plant part used	Preparation method	Study code
Glycyrrhiza glabra L.*	alcaçuz	C	Cough; Sore throat	Leaf, Root	Tea (infusion); Tea (decoction)	5
Gwilymia coriacea (Benth.) A.G.Lima et al.	barbatimão	N	Iron-deficiency anemia in children	Bark	Tea (infusion)	6
Libidibia ferrea (Mart. ex Tul.) L.P.Queiroz*	jucá	N	Flu	Bark	Syrup	7
Phaseolus vulgaris L.	feijão	C	Iron-deficiency anemia in children	Seed	Cooked preparation (broth/soup)	6
Lamiaceae						
Coleus amboinicus Lour.	hortelã-gorda	C	Cough; Sore throat; Bronchitis	Leaf	Traditional medicinal syrup (lambedor); Tea (infusion); Juice	8, 5
Mentha arvensis L.	hortelã, hortelãzinho, vique	C	Childhood illness; Fever; Cough; Nasal congestion	Leaf	Sap (internal and external use); Syrup; Tea (infusion); Bath; Inhalation	3, 5
Mesosphaerum suaveolens (L.) Kuntze	alfavacão	N	Flu; Fever; Nasal congestion	Leaf	Tea (infusion); Head bath	5
Ocimum americanum L.	manjericão	NA	Bathing children	Leaf	Bath; Tea; Sap (internal use)	3
Ocimum basilicum L.	alfavaca	C	Cough; Flu; Bronchitis; Sore throat	Leaf	Tea (infusion); Tea (decoction); Mouthwash; Gargling	5
Ocimum gratissimum L.	alfavacão	NA	Bathing children	Leaf	Tea; Sap (internal use)	3
Pogostemon cablin (Blanco) Benth.	oriza	C	Bathing children	Leaf	Tea; Bath; Maceration (external use)	3
Lauraceae						
Persea americana Mill.*	abacate	NA	Wounds; Iron-deficiency anemia in children	Leaf, Seed	Syrup; Poultice; Tea (decoction); Tea (infusion); Macerate	7, 6
Lythraceae						
Punica granatum L.*	romã	C	Sore throat	Fruit (peel)	Oral antiseptic; Gargling	5
Malpighiaceae						
Malpighia emarginata DC.	acerola	C	Iron-deficiency anemia in children	Fruit	Sap	6
Malvaceae						
Gossypium hirsutum L.	algodão	NA	Pneumonia; Flu; Productive cough; Fever	Seed, Leaf	Tea (infusion); Juice	5
Meliaceae						
Cedrela fissilis Vell.	cedro	N	Teeth cleaning and dental caries	Stem (charcoal)	Poultice	7
Moraceae						
Dorstenia cayapia Vell.	contra-erva	N	Fever; Bronchitis; Sore throat; Respiratory tract infections in general	Leaf, Seed	Tea (infusion, boiled)	5
Musaceae						
Musa paradisiaca L.	bananeira	C	Cough; Sore throat	Leaf, Latex	Traditional medicinal syrup (lambedor); Juice	5

Family/Species	Common name	Origin	Therapeutic indication	Plant part used	Preparation method	Study code
			inflammation; Bronchitis; Flu			
Myrtaceae						
Eucalyptus globulus Labill.*	eucalipto	C	Flu; Nasal congestion; Sinusitis; Fever; Cough	Leaf	Tea (infusion); Inhalation	5
Piperaceae						
Piper callosum Ruiz & Pav.	elixir paregórico	N	Heartburn and colic	Leaf	Tea	7
Plantaginaceae						
Scoparia dulcis L.	vassourinha	N	FFever; Cough; Bronchitis; Sore throat	Root	Tea (decoction)	5
Poaceae						
Cymbopogon citratus (DC.) Stapf*	capim-santo	NA	Diarrhea; Fever	Leaf	Tea	7, 5
Saccharum officinarum L.	cana	C	Measles	Straw	Tea	7
Zea mays L.*	milho	C	Measles	Straw	Tea	7
Portulacaceae						
Portulaca pilosa L.	amor-crescido	N	Wounds	Seed	Poultice	7
Rhamnaceae						
Sarcomphalus joazeiro (Mart.) Hauenschild	juazeiro	N	Flu; Cough; Fever; Bronchitis	Leaf, Stem bark	Tea (infusion); Tea (decoction); Maceration	5
Rubiaceae						
Coutarea hexandra (J.) K.Schum.	quina-quina	N	Fever; Flu; Cough; Sinusitis; Iron-deficiency anemia in children	Bark	Tea (decoction); Traditional medicinal syrup (lambedor); Tea (decoction)	5, 6
Rutaceae						
Citrus ×limon (L.) Osbeck	limão	C	Fever; Flu; Cough; Sore throat	Leaf, Fruit; Fruit peel	Juice; Tea (infusion); Traditional medicinal syrup (lambedor)	5
Citrus aurantiifolia (Christm.) Swingle	limão	C	Fever; Flu	Bark	Poultice; Tea	4, 5
Citrus aurantium L.*	laranja	C	Iron-deficiency anemia in children	Fruit, Leaf, Bark	In natura; Tea (decoction); Tea (infusion)	6
Ruta graveolens L.	arruda	C	Fever; Respiratory tract infections in general; Bathing children	Leaf	Tea (infusion); Tea (decoction); Sap (external use); Maceration (internal use); Bath	5, 7, 3
Siparunaceae						
Siparuna guianensis Aubl.	capitiu, negramina	N	Nausea in children; Fever; Flu; Teething; "Malina" (traditional term; meaning unclear)	Leaf	Leaf decoction, used warm or cold as a bath	3, 1
Solanaceae						

Family/Species	Common name	Origin	Therapeutic indication	Plant part used	Preparation method	Study code
Solanum lycopersicum L.	tomate	C	Iron-deficiency anemia in children	Fruit	In natura; Sap	6
Solanum tuberosum L.	batata	C	Child strengthening; Hemostatic agent	Root	Herbal preparation in a bottle (garrafada)	7
Turneraceae						
Turnera subulata Sm.	chanana	N	Cough	Root, Leaf	Tea (decoction); Tea (infusion); Traditional medicinal syrup (lambedor)	5
Verbenaceae						
Lantana camara L.	camará	NA	Cough; Flu	Leaf	Tea (infusion); Tea (decoction); Traditional medicinal syrup (lambedor)	5
Lippia alba (Mill.) N.E.Br. ex Britton & P.Wilson*	erva-cidreira	N	Soothing agent; Flu; Fever; Productive cough	Leaf, Root	Tea	7, 5
Zingiberaceae						
Alpinia zerumbet (Pers.) B.L.Burtt & R.M.Sm.*	vim-di-caá	C	Bathing children	Leaf, Flower	Tea; Bath; Maceration (external use)	3
Zingiber officinale Roscoe***	gengibre	C	Sore throat; Cough; Fever; Flu	Root	Macerated juice	5

N = Native species; NA = Naturalized species; C = Cultivated species. (*) Species included in the Brazilian Pharmacopoeia Herbal Formulary (FFFB); (**) Species included in the Brazilian Pharmacopoeia Herbal Medicine Compendium (MFFB); (***) Species included in both the FFFB and the MFFB.
Source: research data.

Regarding the taxonomic composition of the medicinal plants, 75 species distributed across 38 botanical families were recorded. The most representative families were Lamiaceae, with seven species (9.3%); Asteraceae, with six species (8%); and Fabaceae, with five species (6.7%), as presented in Table 2. Regarding origin, 33 native species (44%) and 42 exotic species (56%) were identified, the latter comprising cultivated or naturalized species. These findings indicate a slight predominance of exotic species in the studies analyzed, even among traditional communities. The increasing prevalence of exotic species in local communities may be interpreted as a behavioral adaptation to ecological and cultural changes in traditional knowledge, associated with reduced isolation and increased communication among communities, which ultimately drive these changes (Medeiros, 2013; Medeiros *et al*., 2017).

Tribess *et al*. (2015), in an ethnobotanical survey conducted in rural communities in the municipality of Apiúna, Santa Catarina, recorded 61 botanical families of plant species used for therapeutic purposes in children, with Asteraceae and Lamiaceae being the most prominent. The authors also found that 54.94% of the species were considered exotic in Brazil, a result similar to that observed in the present study. In a study conducted in the urban areas of Petrópolis and Nova Friburgo, Rio de Janeiro, Leitão, Fonseca-Kruel, Silva, and Reinert (2009) likewise identified

Asteraceae and Lamiaceae as the most representative families. The authors attributed their prominence to their high species richness, cosmopolitan distribution, and worldwide recognition as medicinal plant families. Additionally, Hanazaki *et al*. (2000) reported that species frequently cited for medicinal use in Brazil are often exotic, as they are also used safely in other regions of the world.

Among the pediatric population, 39 distinct therapeutic indications were identified. The most frequently reported were fever, with 27 records, followed by flu (22), cough (20), and sore throat (15) (Table 2). Santos *et al*. (2025) confirmed that respiratory diseases remain the leading cause of hospitalization among children under five years of age in Brazil's Unified Health System (SUS), accounting for 34.7% of hospital admissions. A study conducted by Soares *et al*. (2025) in the Tembé Indigenous community of Alto Rio Guamá, Pará, found that the most common illnesses affecting children in the village were flu, with 22 mentions, and diarrhea, with 16 records.

Of the 75 plant species mentioned in the studies, 17 are included in the Brazilian Pharmacopoeia Herbal Formulary (FFFB), and two are listed in the Brazilian Pharmacopoeia Herbal Medicine Compendium (MFFB), as highlighted in Table 2, with uses intended for adults. However, only *Zingiber officinale* is included in both official documents, where it is indicated for children aged six years and older as an adjunct for the symptomatic relief of motion sickness (BRASIL, 2016; BRASIL, 2026). The study by Lemos *et al*. (2016) reported the use of the rhizome of *Z. officinale* in macerated form to treat sore throat, cough, fever, and flu in children.

Although official documents primarily address the use of medicinal plants in adults and, in some cases, adolescents aged 12 years and older, the selected studies identified eight species used by traditional Brazilian communities to manage childhood health conditions, with therapeutic indications similar to those described in the FFFB and the MFFB: *Allium sativum* (alho), *Anacardium occidentale* (cajueiro), *Achyrocline satureioides* (carrapicho-de-agulha), *Glycyrrhiza glabra* (alcaçuz), *Punica granatum* (romã), *Eucalyptus globulus* (eucalyptus), *Cymbopogon citratus* (capim-santo), and *Lippia alba* (erva-cidreira).

The convergence between ethnobotanical records and the uses recognized in these official documents, together with the availability of official quality and safety parameters for adults, highlights these species as priority candidates for research targeting the pediatric population. However, recognition of their use in adults does not justify direct extrapolation to children. Specific studies are therefore needed to assess the preparation methods, dosage, efficacy, and safety of these plants across different pediatric age groups.

Regarding the plant parts used, leaves were the most frequently reported plant parts, cited in 52 preparations, followed by roots (18) and bark (17), among others. It is noteworthy that some species were reported to have more than one plant part used, which explains why the sum of the categories exceeds the number of species for which this information was available.

Among the 15 preparation methods reported in the studies, tea was the most prominent, being cited in 84 therapeutic indications in the form of infusions, decoctions, or simply as tea. Syrups and lambedor (a traditional medicinal preparation) were reported for 20 and 10 therapeutic indications, respectively. Other less frequently reported methods included use in natura, ingestion, gargling, broths, inhalation, and other forms of use. As observed for the plant parts used, some species were associated with more than one preparation method.

Carbolim *et al*. (2025), in a study conducted in rural communities in northern Mato Grosso, also identified leaves as one of the most frequently used plant parts in medicinal preparations. The authors argued that leaf harvesting, even in large quantities, does not damage the plant to the same extent as bark or root harvesting, which may compromise the survival of the harvested individuals. The same study found that infusion was the most common preparation method, usually in the form of tea, corroborating the findings of the present study.

Among the eight selected articles, *Mangifera indica* (mango) and *Ruta graveolens* (rue) were the most frequently reported species, each appearing in three studies. Ten species were reported in two studies, while the remaining species appeared in only one study (Table 2). This pattern indicates limited overlap among the ethnobotanical surveys analyzed, suggesting that the use of medicinal plants in child care within traditional Brazilian communities is highly locally specific. This specificity may be associated with the environmental availability of plant species, culturally established health-care practices, and the community-based transmission of traditional knowledge.

The lack of information on treatment duration and children's age groups, as well as the omission of quantities used in the preparation of traditional remedies, represented recurring gaps in the studies analyzed, preventing the safe reproducibility of the documented practices. These limitations not only hinder comparisons among studies but also restrict the potential use of these records as Real-World Evidence (RWE) and as technical and scientific support for assessing the safety, effectiveness, and traditional use of traditional herbal medicinal products.

Under RDC No. 1,004/2025, the RWE may be used to support the assessment of traditional herbal medicinal products, provided that it is sufficiently documented and contains relevant information to demonstrate their safety, effectiveness, and traditional use (Anvisa, 2025). In this context, the findings underscore the importance of detailed documentation and systematic organization of the knowledge and therapeutic practices of traditional peoples and communities, in order to preserve their sociocultural context and enhance their potential contribution as technical and scientific evidence.

Over the past four decades, predominantly descriptive ethnobotanical studies have been criticized for often lacking sufficient theoretical grounding and methodological rigor, although the information they generate may be relevant (Albuquerque *et al*., 2019). However, for ethnobotanical

records, reports of traditional use, and other documentary sources to serve as technical and scientific support, they must provide minimum information to ensure traceability, reproducibility, and therapeutic consistency. This information includes complete botanical identification; the plant part used; the condition of the herbal drug, whether fresh or dried; the claimed use; the target population; the preparation method; the route of administration; the dose; the frequency and duration of treatment; and, where applicable, the extraction technique, solvent used, and drug-to-plant material ratio (Rossato; Dal Bó; Citadini-Zanette, 2024; Anvisa, 2025).

Rossato, Dal Bó, and Citadini-Zanette (2024) termed these data essential items, whose documentation makes it possible to qualify and systematize records of traditional knowledge, rendering them potentially eligible for inclusion in evidence reports intended to validate the traditional use of medicinal plant species. The low frequency of these data in the studies analyzed therefore limits the incorporation of ethnobotanical records into technical and scientific reports addressing the safety, effectiveness, and traditional use of traditional herbal medicinal products. This limitation is particularly relevant in pediatric care, given the need to adequately characterize age groups, dosage, frequency and duration of use, contraindications, and potential associated risks.

Only two of the studies analyzed reported the collection of plant specimens and their deposition in a herbarium. However, the collection and accurate taxonomic identification of plant material, followed by the deposition of a voucher specimen in a herbarium, are essential for enabling comparisons with other specimens of the same plant species, as previously demonstrated and recognized by Soejarto, Addo, and Kinghorn (2026).

In addition to serving as an indicator of the methodological quality of ethnobotanical studies, accurate botanical identification represents the starting point for assessing the identity and quality of plant raw materials intended for medicinal use (Rossato; Dal Bó; Citadini-Zanette, 2024). When these methodological details are overlooked, research becomes irreproducible, as the basic process of specimen identification cannot be repeated. However, if specimens have been collected, the study remains open to review by taxonomic specialists (Manzano; Julier, 2021).

4 Conclusion

The integrative review revealed a substantial diversity of medicinal plants used in child care by traditional Brazilian communities, comprising 75 species distributed across 38 botanical families and associated with 39 reported uses. The presence of both native and exotic species, primarily used in home preparations to address common childhood health conditions, demonstrates the breadth and persistence of this knowledge within traditional care practices. Furthermore, the convergence between some of the documented uses and those recognized in official Brazilian Pharmacopoeia documents makes it possible to identify species of interest for future research targeting the pediatric population.

Despite this diversity, the studies presented incomplete information, including insufficient descriptions of botanical identification procedures, infrequent deposition of voucher specimens in herbaria, and limited standardization in data systematization. Gaps were also identified regarding children's age groups, the quantities used in preparations, administration frequency, and duration of use. These limitations hinder comparisons among studies and restrict the potential use of ethnobotanical records as technical and scientific support for assessing the safety, effectiveness, and traditional use of traditional herbal medicinal products.

The findings of this review indicate that ethnobotanical surveys, particularly those involving native species, should provide detailed descriptions of the information collected to enable investigations into the clinical efficacy and safety of correctly identified medicinal plant species. Such investigations may provide scientific support for the assessment of traditional herbal medicinal products and their potential incorporation into the pharmaceutical care policies of Brazil's Unified Health System (SUS).

As a further step, expanding the literature search is recommended to include additional databases, institutional repositories, theses, dissertations, and grey literature, as a substantial proportion of studies involving traditional communities may not be published in indexed journals. Continuing this research may contribute to the recognition and appreciation of traditional knowledge and foster dialogue among traditional knowledge, science, and public health policies. At the same time, such efforts must respect ethical protocols, community autonomy, and the protection of traditional knowledge.

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