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Literature review on the knowledge of the use of medicinal plants in the health care of brazilian quilombola women

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ABSTRACT

This review examines folk knowledge of medicinal plants related to women's health among Brazilian "quilombolas" (Afro-descendent communities). Secondary data were gathered from 24 articles published between 2000 and 2021 that directly addressed traditional knowledge in quilombola communities, and we analyzed the relative frequencies of citation (FRCi) as well as the richness and similarities of medicinal species among the different biomes in which the quilombola communities were established. "EthnobotanyR" software was employed to analyze the distributions of the use-frequencies of medicinal species used in women's health care among those communities. A databank was constructed with information concerning 117 medicinal species used for women's health in the 40 quilombola communitiesestablished in the Caatinga (49 spp.), Atlantic Forest (44 spp.), Cerrado (29 spp.) and Amazonian (26 spp.) biomes. The species with the greatest FRC_i values were *Ruta graveolens* L. (0.4) and *Dysphania ambrosioides* (L.) Mosyakin e Clemants (0.16), both exotic plantswidely cultivated and utilized in Brazil. The present study showed high indications of the traditional uses of medicinal plants for treating health problems in women, principally for vaginal and uterine infections and/or inflammations, but alsofor treating additional pregnancy or postpartum conditions. Additional studies will be necessary, however, to more closelyexamine the beneficial properties of those plants as well as any potential risks they may offer to women's health.

Key-words: Bibliographic review. Ethnobotanical study. Women's health. Ethnomedicine. Afro-descendentcommunities.

Revisão de literatura sobre o conhecimento do uso de plantas medicinais na atenção à saúde de mulheres quilombolas brasileiras

RESUMO

Esta revisão examina o conhecimento popular sobre plantas medicinais relacionadas à saúde da mulher entre os "quilombolas" brasileiros (comunidades afrodescendentes). Foram coletados dados secundários de 24 artigos publicados entre 2000 e 2021 que abordavam diretamente o conhecimento tradicional em comunidades quilombolas. Foram analisadas as frequências relativas de citação (FRCi), a riqueza e semelhanças de espécies medicinais entre os diferentes biomas das comunidades. O software "EthnobotanyR" foi utilizado para analisar as distribuições das frequências de uso de espécies medicinais utilizadas na assistência à saúde da mulher entre essas comunidades. Foi construído um banco de dados com informações referentes a 117 espécies medicinais para a saúde da mulher nas 40 comunidades quilombolas estabelcidas nos biomas da Caatinga (49 spp.), Mata Atlântica (44 spp.), Cerrado (29 spp.) e Amazônia (26 spp.). As espécies com maiores valores de FRCi foram *Ruta graveolens* L. (0,4) e *Dysphania ambrosioides* (L.) Mosyakin e Clemants (0,16), ambas plantas exóticas amplamente cultivadas e utilizadas no Brasil. O presente estudo mostrou grandes indicações dos usos tradicionais de plantas medicinais para o tratamento de problemas de saúde em mulheres, principalmente para infecções e/ou inflamações vaginais e uterinas e para condições adicionais de gravidez ou pós-parto. No entanto, serão necessários estudos adicionais para examinar mais de perto as propriedades benéficas dessas plantas, bemcomo quaisquer riscos potenciais que possam oferecer à saúde das mulheres.

Palavras-chave: Revisão bibliográfica. Estudo etnobotânico. Saúde da mulher. Etnomedicina. Comunidades afrodescendentes.

Introduction

Gender inequality is one of the principal factors contributing to the vulnerability of health care for Brazilian women. Women are the principal users of the public health system in Brazil, as they tend to live longer but have more health problems. The vulnerability of women to certain illnesses and causes of death are more closely linked to discrimination-related problems and the continuous demands of domestic labor than to biological factors. Additionally, women are frequent victims of domestic violence, which contributes to their susceptibility to health problems (Brasil, 2004)**.**

Domestic violence is a global problem affecting women in every country. A study undertaken by the World Health Organization, based on data from 80 countries, demonstrated that almost one third (30%) of all women throughout the world have suffered physical and or sexual violence by partners in their relationships. Therefore, physical violence is a serious health problem – and one of the principal indicators of gender discrimination against women – with devastating consequences to their quality of life (OMS, 2023).

According to the Brazilian Ministry of Health, few studies have addressed the quality of life of women or their health practices, principally in rural areas (Brasil, 2004). The high rates of health problems among women, associated with precarious health services in developing countries, have revealed the importance of the use of varied repertoires of medicinal plants to help promote their well-being (Yazbek et al., 2016). Medicinal plants are extremely relevant to women's primary health care and can provide them with important therapeutic options (Oliveira, 2016). Women living in traditional rural communities have accumulated a considerable knowledge of medicinal plants and have widely taken upon themselves responsibility for the healthcare of their families and wider community (Marques et al., 2015).

Medicinal plants have been used since remote times by the indigenous peoples of Brazil, as well as by other traditional communities, such as quilombolas (Afro-descendent communities). The Fundação Cultural Palmares (2023) has identified 3,524 quilombola communities in Brazil – and many are considered to be the remnants of original settlements of enslaved Africans who escaped to remote areas (*quilombos*). Those communities have unique cultural identities and exhibit strong cultural links with their ancestors in Africa (Sales et al., 2009).

The use of medicinal plants by quilombola communities is an example of the preservation and maintenance of cultural links with ancestral traditions. Many African plants were brought to the Americas during the trafficking of enslaved peoples, contributing to the biological diversity of tropical regions (Voeks, 2017). The enslaved people's adaptation to the New World and their acquisition of experience with both local and exotic plants resulted in the establishment of ethno-pharmaceutical knowledge that has been orally transmitted from generation to generation in Brazil. That knowledge has been used to identify medicinal and food plants, as well as species having wide varieties of cultural and craft uses. Medicinal plants have contributed over the centuries to the health and well-being of previously enslaved peoples, and Afro-descendent communities have developed extensive hybrid pharmacopeias of plants used to treat a wide spectrum of ailments (Hanazaki et al., 2000; Begossi et al., 2002).

Studies of the plants used by quilombola members are extremely important, as they allow the understanding of their relationships with the native flora (Amorozo, 2002). Likewise, studies of traditional knowledge of medicinal plants used to promote women's health can strengthen practices that aid women in different social contexts and during different reproductive periods (Santa Rosa et al., 2014). Depending on the circumstances, medicinal plants can be native or introduced, and there can be heterogeneity or homogeneity among the species used and shared among different communities (Johnson and Wichern, 2007).

This review and analysis of secondary data is designed to: examine the therapeutic uses of medicinal plants in terms of women's health in Brazilian quilombola communities; investigate the origins of those plants; quantify the floristic medicinal richest of different biomes; and determine the degrees of similarity of the species used among the different communities examined.

Material and methods

Data collection from scientific studies

We considered studies published between 2000 and 2021 that directly examined the traditional knowledge of plants used in women's healthcare (fertility, pregnancy, birth, postpartum, menopause, and treatments of the female genital organs) in quilombola communities in Brazil. The scientific databases consulted were: (1) Literatura Latino-Americana e do Caribe em Ciências da Saúde (LILACS); (2) Portal Periódicos CAPES; (3) Sistema Online de Busca e Análise deLiteratura Médica; (4) Google Scholar; (5) ScienceDirect; (6) SciELO; and (7) Scopus, using the key- words: women's health ("saúde da mulher"); medicinal plants ("plantas medicinais*"*); "quilombolas"; and Afro-Brazilians ("afro- brasileiros"), in English and ("Portuguese").

The following information was collected from each article accessed: the common name and scientific name of each plant, its botanical family, the plant organ used, the preparation method, and the conditions or illnesses treated.

Data extraction from ethnobotanical surveys of medicinal plants were based on the selection of species indicated for use in women's health. As such, the therapeutic indications had to be related to some category of the female genitals, including breasts, as proposed by the International Classification of Primary Care (CIAP, 2009); those criteria were complemented by consulting the categories proposed by Yazbek et al. (2016) in the publication "*Plants used during maternity, menstrual cycle and other women's health conditions among Brazilian cultures*".

Data analysis

The botanical names obtained from the research papers were updated by consulting the Flora e Funga do Brasil and Tropicos sites; those same websites, as well as Lorenzi and Matos (2008), were used to determine the origins and habits of the species. The biomes in which the quilombola communities were situated were determined based on information available on the IBGE- Biomas (2023) site.

The similarity dendrogram was generated using multivariate analyses (Ward method) using Past software; a Mahalanobis distance matrix was elaborated to verify the formation of clusters with similar characteristics in terms of their floristic compositions (Johnson and Wichern, 2007), considering the presence or absence of medicinal species in each biome (Hair et al., 2009).

Relative Frequency of Citation (FRC_i) statistics were used to evaluate consensus concerning medicinal species among the different studies. To obtain those estimates, the FC_i value (corresponding to the number of literatures sources that mentioned the species) was divided by the total number of sources consulted (Zhang et al., 2014).

We elaborated a chord diagram using the "EthnobotanyR" package of R software (R Core Team 2016), which allow visualization of the frequency distributions of the different uses and the medicinal species employed in women's health among the quilombola communities investigated. An example of the application of chord diagram in ethnobotanical studies can be encountered in a study of agro-biodiversity in Uganda (Whitney et al., 2018).

Results and discussion

Results of the bibliographic search

A total of 1500 publications were identified, of which 130 were evaluated; only 24 of those met the selection criteria for review and data extraction (Table.1). Most of those articles considered the medicinal floras used by Afro-descendent communities in nine Brazilian states: Bahia (7 publications); Pará and Mato Grosso (4 each); Amapá, Goiás and Maranhão (2 each); Minas Gerais, Paraíba and São Paulo (1 each). Only one publication specifically considered the use of medicinal plants by quilombola women during gestation and lactation; that study was conducted in 18 communities within the municipality of Vitória da Conquista in Bahia State (Campos et al., 2020). The other studies considered wider views of the uses of medicinal plants, such as within ritualistic contexts, plants that occur in agro-forest gardens, etc. The data collection methods most commonly used were interviews, guided tours, and participatory observations; the snowball sampling technique predominated.

Table 1. Compiled information from comparative reviews of ethno-gynecological studies of Brazilian quilombola women's healthcare. **ID** = identification

ID	Authors	Objective/Methodology	Municipality	State	Quilombola community	Nº of therapeutic indications	Nº of plants
1	Campos et al. (2020) [29]	Discusses plants used for medicinal purposes by gestating and lactating women. Interviews with mothers that use medicinal plants	Vitória da Conquista	Bahia	Various – 18 communities	2	27
2	Gomes and Bandeira (2012) [30]	Inventory of medicinal plants/snowball technique, free listing, reverse ranking and the cultural salience index	Jeremoabo	Bahia	Casinhas	5	10
3	Guimarães et al. (2019) [31]	Survey of medicinal plants commonly used by women in quilombola associations/ snowball technique and interviews	Piracanjuba	Goiás	Ana Laura	7	12
4	Lisboa et al. (2017) [32]	Revitalize and document traditional knowledge concerning the use of medicinal plants/snowball technique and guided tours	Maragogipe	Bahia	Salamina/ Putumujú	3	5
5	Monteles and Pinheiro (2007) [33]	Document traditional knowledge of local plant resource uses related to therapeutic practices/interviews, participatory observation, and free listing	Presidente Juscelino	Maranhão	Sangrador	1	4
6	Mota and Dias (2012) [34]	Ethnobotanical surveys in forested gardens/snowball technique and participatory observations	Nova Viçosa	Bahia	Helvécia	3	3
7	Nascimento and Conceição (2011) [35]	Identify medicinal plants/guided tours and meetings with community leaders	Caxias	Maranhão	Olho D'Água do Raposo	1	5
8	Nascimento et al. (2020) [36]	Ethnobotanical surveys / snowball technique	Moju	Pará	Conceição de Mirindeua	1	1
9	Oliveira et al. (2020) [37]	Examine medical care among quilombola populations and how a cultural dichotomy established while treating a sick person/interviews with quilombola women	Nossa Senhora do Livramento	Mato Grosso	Mutuca	2	6
10	Pasa et al. (2015) [38]	Understand the importance of local environmental, cultural and social phenomena through information concerning local ethnobotanical practices / interviews with questionnaires	Nossa Senhora do Livramento	Mato Grosso	Mata Cavalo	3	4

ID	Authors	Objective/Methodology	Municipality	State	Quilombola community	Nº of therapeutic indications	Nº of plants
11	Pereira and Coelho-Ferreira (2017) [39]	Record knowledge associated with medicinal plants / interviews and snowball technique neve	Abaetetuba	Pará	Tauerá -Açu	5	13
12	Pereira et al. (2007) [40]	Identify medicinal plants of the Piperaceae and Solanaceae families / participatory observations and informal interviews	Macapá	Amapá	Curiaú	2	3
13	Rodrigues and Carlini (2003) [41]	Ethno-pharmacological survey, plant use in ritual contexts / Interviews, participatory observations and ethnography	Nossa Senhora do Livramento	Mato Grosso	Sesmaria MataCavalos	1	1
14	Sales et al. (2009) [7]	Ethnobotanical survey of the species with medicinal uses / interviews with questionnaire	Areia	Paraíba	Senhor do Bonfim	1	1
15	Santana et al. (2016) [42]	Survey of the medicinal plants used by a relatively isolated quilombola community / Interviews and guided walks in the forest	Maragogipe	Bahia	Salamina/ Putumujú	7	21
16	Santos and Barros (2017) [43]	Survey of the plant resources most important to life in a quilombola / Informal interviews and free listing	Porto Estrela	Mato Grosso	Bocaina	2	3
17	Scoles (2006) [44]	Ethnobotanical survey of the species with medicinal uses / snowball technique	Acará	Pará	Itacoã	5	6
18	Silva (2019) [45]	Investigate the role of ethnobotanical knowledge in community sustainability / Interviews and questionnaires with a local population and with specialists	Mineiros	Goiás	Cedro	5	7
19	Silva et al. (2012) [46]	Ethnobotanical survey of the species with medicinal uses / Interviews with an inhabitant of each residence	Morro do Chapéu	Bahia	Barra II	10	38
20	Silva et al. (2012) [47]	Ethnobotanical survey of the species with medicinal uses / snowball technique, guided tours	Rio de Contas	Bahia	Barra e Bananal	5	13
21	Silva et al. (2013) [48]	Identify the agro-ecological and socioeconomic profiles of local inhabitants and their knowledge of useful plants / interviews with random informants	Macapá	Amapá	Curiaú	7	8

ID	Authors	Objective/Methodology	Municipality	State	Quilombola community	Nº of therapeutic indications	Nº of plants
22	Silva et al. (2019) [49]	Identify, describe, and understand local knowledge of useful plants / Questionnaires	Ananindeua	Pará	Abacatal	2	5
23	Valeriano et al. (2020) [50]	Ethnobotanical survey of the species with medicinal uses / Interviews in residences	Pitangui	Minas Gerais	Veloso	1	1
24	Yazbek et al. (2019) [51]	Ethnobotanical survey of the species used by quilombola residents / Participatory method, local residents together with university students recorded and analyzed local knowledge	Ubatuba	São Paulo	Fazenda	5	5

Medicinal species used for maintaining women's health

Ethnobotanical information related to women's health were gathered concerning 117 medicinal species, representing 102 genera distributed among 41 botanical families (Table 2). Fabaceae (19 spp.), Lamiaceae (15 spp.) and Asteraceae (10 spp.) were the most well-represented families, with the latter two also being the most important in ethnobotanical studies undertaken in Afro-descendent communities in Brazil, Portugal and Portuguese-speaking African countries (Pasa et al., 2019).

In terms of the origins of the medicinal species, 58 were native to Brazil and 59 were exotic, most of the latter were native to Europe and Asia (Table 2). Of the 59 exotic species, only eight are also distributed in Africa (Figure 1): *Aeollanthus suaveolens*, *Plectranthus neochilus* and *Tamarindus indica* (exclusive to Africa); *Ricinus communis* and *Leonotis nepetifolia* (Africa and India); *Ocimum basilicum* (Africa and Asia); *Artemisia absinthium* and *Cymbopogon citratus* (Africa, Asia and Europe). As humans migrate to other countries they often bring useful plants with them, as well as adapt their plant pharmacopeias by including species from those new environments, especially if previously known plants are not available (Vandebroek and Balick, 2012). The origins of the phyto-pharmacopeias identified in the publications considered here corroborate the combined histories of indigenous populations as well as Africans and Europeans who later arrived in Brazil, establishing botanical trajectories of floras from distant regions (Voeks, 2017). That exchange of exotic plant species, with the diffusion of medicinal, food, and magical-religious plants from Africa contributed to a botanicalhomogeneity and the adaptation and transculturalization of African descendants in the New World (Voeks and Rashford, 2013).

Leaves were found to be the plant organ most used (n=58) to treat the different maladies associated with women's health in quilombolas, followed by bark (n=26) and roots (n=16). Leaves and bark are both widely available throughout the year, which contributes to their significant representation in local pharmacopeias. Additionally, leaves are the principal photosynthetic organs of the plants, and have many bioactive phytochemicals concentrated within them (Edris, 2007).

Medicinal plants can be used *in natura* (n=7), without previous preparation, or treated in various manners before use. This research identified nine preparation categories, including: teas (n=81), baths (n=28), steeped in drinking alcohol ("garrafada" or "cachaçada") (n=19), maceration (n=7), juice (n=6), cataplasm (n=2), syrup (n= 2), powdered and tincture (n=1 each). Those findings are in agreement with other studies of traditional communities (Brito; Evangelista; 2020; Santos et al., 2020).

Figure 1. Species occurring in Africa used in women's health by quilombola communities in Brazil. A) *Artemisia absinthium*; B) *Cymbopogon citratus*; C) *Leonotis nepetifolia*; D) *Ocimum basilicum*; E) *Plectranthus neochilus*; F) *Ricinus communis*. Source: Tropicos.

Table 2. List of the medicinal plant species used in women's health treatments in quilombola communities in Brazil. Legend: ID = identification; Origin: native= N; exotic= E (India = I; Europe = Eu; Oceania = O; Africa = Af; Asia = As; America = Am; Tropical America = AmT; Central America = AmC; Mediterranean = Med); Uses (Bi=birth; Pp=postpartum; Re=regulator; Co=menstrual colic; If=feminine inflammation; Ifc=feminine infections; Ab=abortive; My=myomas; Ds=Sexually-Transmitted Diseases; Ap= aphrodisiac; Op= ovary pain; Pr= pregnancy; Vd= vaginal discharge); FR = relative citation frequency; Biomes (AM= Amazonian; CA= Caatinga; CE= Cerrado; MA = Atlantic Forest); Authors = as in Table 1.

ID	Species	Family	Popular name	Origin	Uses	Used part	Preparation	FR	Biomes	Authors
sp1	*Abarema cochliacarpos* (Gomes) Barneby e J.W.Grimes	Fabaceae	barbatimão	N	Pp	bark	tea; bath; cachaçada	0,04	CA	19
sp2	*Acanthospermum hispidum* DC	Asteraceae	mané-velho	N	Pp	-	-	0,04	MA	15
sp3	*Aeollanthus suaveolens* Mart. ex Spreng.	Lamiaceae	catinga de mulata; cheiro de mulata	E/A	Re; Ab	leaf; flower	tea	0,08	AM	17; 21
sp4	*Ageratum conyzoide*s L.	Asteraceae	mentrasto; erva-de-são-joão	N	Co	leaf	tea; bath	0,16	CE	15; 18; 23; 24
sp5	*Allium ascalonicum* L.	Amaryllidaceae	cebola branca	E/As	Bi; Pp	bulb	tea; bath	0,04	CA	19
sp6	*Allium cepa* L.	Amaryllidaceae	cebola	E	Re	bulb	tea	0,04	CA	19
sp7	*Allium sativum* L.	Amaryllidaceae	alho	E/Eu	Bi; Pp	bulb	tea; in natura	0,08	CA; MA	15; 20
sp8	*Aloysia gratissima* (Gillies e Hook.) Tronc.	Verbenaceae	alfazema	N	If; Ifc	entire	bath; tea	0,04	CA	19
sp9	*Alternanthera brasiliana* (L.) Kuntze	Amaranthaceae	benzetacil	N	Pp	-	-	0,04	MA	15
sp10	*Amburana cearensis* (Allemão) A.C.Sm.	Fabaceae	amburana; umburana; imburana; amburana de cheiro; emburana	N	If; Ifc; Co; Pr	leaf; seed; bark	tea	0,08	CA; MA	19; 20
sp11	*Anacardium occidentale* L.	Anacardiaceae	cajueiro; cajueiro-branco	N	If; Ifc; Ap; Pp	bark	tea; bath; maceration	0,12	CA; MA	2; 4; 15
sp12	*Arachis hypogaea* L.	Fabaceae	amendoim	E	Ap	-	-	0,04	MA	15
sp 13	*Artemisia absinthium* L.	Asteraceae	Losna	E/Eu; As; A	Ab; Co	tea; tincture	leaf	0,08	CA; CE	2; 18

ID	Species	Family	Popular name	Origin	Uses	Usedpart	Preparation	FR	Biomes	Authors
sp14	*Artemisia vulgaris* L.	Asteraceae	artemijo	As	Pp	leaf	bath; juice	0,04	CA	19
sp15	*Astronium urundeuva* (M.Allemão) Engl.	Anacardiaceae	aroeira	N	If; Ifc	bark; leaf	tea; bath	0,04	CA	19
sp16	*Bauhinia variegata* var. *candida* Voigt	Fabaceae	pata-vaca	E	Ds	bark	tea	0,04	AM	21
sp17	*Bidens pilosa* L.	Asteraceae	carrapicho; picão; desinchadeira; carrapicho	E/At	Pp; Re; Pr	entire; seed; leaf	bath; cachaçada; tea	0,12	CA; CE; MA	1; 7; 19
sp18	*Bixa orellana* L.	Bixaceae	urucum	N	Co; Op	seed; leaf	tea	0,04	CA	19
sp19	*Boerhavia diffusa* L.	Nyctaginaceae	pega pinto	E/At	Pp	entire	cachaçada	0,04	CA	19
sp20	*Brosimum gaudichaudii* Trécul	Moraceae	mama-cadela	N	Ds	-	garrafada	0,04	CE	9
sp21	*Brunfelsia unifla* (Pohl) D.Don	Solanaceae	manacá	N	Ds	bark	bath; maceration	0,04	CA	2
sp22	*Calliandra dysantha* Benth.	Fabaceae	ciganinha	N	Re	root.; flower	tea	0,04	CE	3
sp23	*Capsicum frutescens* L.	Solanaceae	pimenta malagueta	E	Co; Ap; Pr	leaf	in natura; tea	0,12	AM; MA	5; 12; 15
sp24	*Chamaecrista blanchetii* (Benth.) Conc., L.P. Queiroz e G.P. Lewis	Fabaceae	rompe gibão	N	If; Ifc	leaf	tea; bath	0,04	CA	19
sp25	*Chiococca alba* (L.) Hitchc.	Rubiaceae	quina-quina; trussisco	N	Re; Pp	bark; leaf; root	tea; bath	0,08	CA; MA	2; 6
sp26	*Chrysanthemum parthenium* (L.) Bernh.	Asteraceae	macela/ macela galega	E	Co; Pp	flower; leaf	tea; bath; cachaçada	0,04	CA	19
sp27	*Cinnamomum verum* J.Presl	Lauraceae	canela	E/I	Pp	bark	food; cachaçada	0,04	CA	19

ID	Species	Family	Popular name	Origin	Uses	Usedpart	Preparation	FR	Biomes	Authors
sp28	*Citrus aurantium* var. *amara* L.	Rutaceae	laranja da terra	E/As	Pr	fruit; leaf	in natura	0,04	AM	17
sp29	*Clematicissus simsiana* (Schult. e Schult.f.) Lombardi	Vitaceae	parreira	N	Pp	root	tea; maceration	0,04	CA	2
sp30	*Cochlospermum regium* (Mart. ex Schrank) Pilg.	Bixaceae	algodãozinho-doce	N	If; Ifc	root	tea	0,04	CE	3
sp31	*Coix lacryma-jobi* L.	Poaceae	capiá	E/Eu	Bi	leaf	decocção	0,04	MA	24
sp32	*Coleus neochilus* (Schltr.) Codd	Lamiaceae	boldo	E	Ab	-	-	0,04	MA	15
sp33	*Coutarea hexandra* (Jacq.) K.Schum.	Rubiaceae	quina	N	Ab	bark	tea; cachaçada	0,04	CA	19
sp34	*Coutoubea spicata* Aubl.	Gentianaceae	papai-nicolau	N	Ab	-	-	0,04	MA	15
sp35	*Croton cajucara* Benth.	Euphorbiaceae	sacaca	N	Re	bark	cataplasm; tea	0,04	AM	17
sp36	*Croton urucurana* Baill.	Euphorbiaceae	sangra-d'água	N	If; Iflc	bark	garrafada	0,04	CE	3
sp37	*Cuminum cyminum* L.	Apiaceae	cominho	E	Pp	leaf; seed	tea; syrup	0,04	CA	20
sp38	*Curcuma longa* L.	Zingiberaceae	açafrão	I	My	root	maceration	0,04	MA	24
sp39	*Cymbopogon citratus* (DC.) Stapf	Poaceae	capim marinho; capim limão; capim-da-lapa	E/Eu; As; A	Re; Pr	leaf	tea	0,08	AM;MA	1; 22
sp40	*Dalbergia miscolobium* Benth.	Fabaceae	jacarandá	N	Re	leaf; bark	tea	0,04	CE	7

ID	Species	Family	Popular name	Origin	Uses	Used part	Preparation	FR	Biomes	Authors
sp41	*Dalbergia monetaria* L.f.	Fabaceae	verônica	N	If; Ifl; Vd	bark	tea	0,08	AM	8; 21
sp42	*Dioscorea villosa* L.	Dioscoreaceae	inhame	E	Ap	root	tea; syrup	0,04	CA	19
sp43	*Dipteryx alata* Vogel	Fabaceae	baruzeiro	N	Rm	bark	garrafada	0,04	CE	3
sp44	*Dysphania ambrosioides* (L.) Mosyakin e Clemants	Amaranthaceae	erva de santa maria; mastruz	E/Ac	Pp; Ds; If; Ifc	leaf; root; seed	tea	0,16	CA; CE; MA	9; 15; 19; 20
sp45	*Endopleura uchi* (Huber) Cuatrec.	Humiriaceae	uxizeiro	N	If; Ifc	bark	bath	0,04	AM	22
sp46	*Erythroxylum vacciniifolium* Mart.	Erythroxylaceae	catuaba	N	Ap	bark	cachaçada	0,04	CA	19
sp47	*Foeniculum vulgare* Mill.	Apiaceae	erva-doce	E/Eu	Pr	-	tea	0,04	MA	1
sp48	*Fridericia chica* (Bonpl.) L.G.Lohmann	Bignoniaceae	pariri	N	If; Ifc	leaf	tea	0,04	AM	22
sp49	*Gossypium herbaceum* L.	Malvaceae	algodão; algodão roxo; algodão verde; mentrasto	E/As; Am	If; Ifc; Co; Ds	leaf; fruit	tea; juice; bath	0,12	CA; CE; MA	9; 16; 19
sp50	*Guapira laxa* (Netto) Furlan	Nyctaginaceae	bandola	N	Pp; Re	bark	maceration; tea	0,04	CA	2
sp51	*Handroanthus impetiginosus* (Mart. ex DC.) Mattos	Bignoniaceae	pau d'arco roxo; pau-d'arco; ipê roxo	N	If; Ifc	bark	tea; maceration	0,12	CA; CE	2;18; 19
sp52	Heteropterys *tomentosa* A. Juss.	Malpighiaceae	nó-de-cachorro	N	Ap	-	-	0,04	CE	10
sp53	*Himatanthus drasticus* (Mart.) Plumel	Apocynaceae	tiborna	N	Fe	latex	garrafada	0,04	CE	3

ID	Species	Family	Popular name	Origin	Uses	Used part	Preparation	FR	Biomes	Authors
sp54	*Himatanthus obovatus* (Müll. Arg.) Woodson	Apocynaceae	pau-de-leite	N	Re	stem	in natura	0,04	CE	7
sp55	*Hyptis crenata* Pohl ex Benth.	Lamiaceae	salva de marajó	N	Co; Ab	leaf	tea	0,04	AM	7
sp56	*Kalanchoe pinnata* (Lam.) Pers.	Crassulaceae	pirarucu	E	If; Ifc	leaf	juice	0,04	AM	22
sp57	*Leonotis nepetifolia* (L.) R.Br.	Lamiaceae	cordão-de-são-Francisco; cordão-de-frade	E/A, I	Pr; If; Ifc	leaf; branch; root	bath; tea	0,08	CE	3; 16
sp58	*Libidibia ferrea* (Mart.ex Tul.) L.P.Queiroz	Fabaceae	jucá	N	If; Ifc	fruit	tea	0,04	AM	11
sp59	*Lippia alba* (Mill.) N.E.Br. ex. Britton e P.Wilson	Verbenaceae	erva-cidreira	N	Pr	-	tea	0,04	MA	1
sp60	*Mangifera indica* L.	Anacardiaceae	manga espada; mangueira	E	If; Ifc; Me; Bi	leaf	tea; bath	0,12	CA; CE;MA	6; 18; 19
sp61	*Matricaria chamomilla* L.	Asteraceae	camomila	E/Eu	Ga	-	tea	0,04	MA	1
sp62	*Mentha piperita* L.	Lamiaceae	hortelãzinho	E/Eu	Ga	-	tea	0,04	MA	1
sp63	*Mentha pulegium* L.	Lamiaceae	poejo; peijo	E	If; Ifc; Pp; Re	leaf	tea; cachaçada	0,08	CA	19; 20
sp64	*Mentha spicata* L.	Lamiaceae	hortelã miúdo	E/As	Re	leaf	tea; juice	0,04	CA	19
sp65	*Mentha suaveolens* Ehrh.	Lamiaceae	hortelã; hortelã miúdo	E/Eu	Pp	leaf	tea; juice	0,04	CA	20
sp66	*Mentha* x *piperita* L.	Lamiaceae	hortelã pimenta; hortelã dascozinhas	E/Eu	Co; Ap	leaf	tea	0,04	AM	21

ID	Species	Family	Popular name	Origin	Uses	Used part	Preparation	FR	Biomes	Authors
sp67	*Mesosphaerum suaveolens* (L.) Kuntze	Lamiaceae	tapera velha; betônica	N	Pp; If; Ifc	-	-	0,08	CE; MA	10; 15
sp68	*Momordica charantia* L.	Cucurbitaceae	são caetano	E	If; Ifc	leaf	bath	0,04	CA	19
sp69	*Myrcia splendens* (Sw.) DC.	Myrtaceae	murta-de-parida	N	Ga	leaf	in natura	0,04	AM	5
sp70	*Myristica fragrans* Houtt.	Myristicaceae	noz moscada; manuscada	E	Co	seed	tea; cachaçada	0,04	CA	19
sp71	*Ocimum basilicum* L.	Lamiaceae	manjericão	E/A; As	Ga	-	tea	0,04	MA	1
sp72	*Ouratea hexasperma* (A.St.-Hil.) Baill.	Ochnaceae	barbatimão	N	Vd; If; Ifc	bark	bath	0,04	AM	21
sp73	*Peperomia pellucida* (L.) Kunth	Piperaceae	alfavaquinha- de-cobra	N	Pp	-	-	0,04	MA	15
sp74	*Persea americana* Mill.	Lauraceae	abacate	E/At	Fe; Ga	seed; leaf	garrafada; tea	0,08	AM; MA	1; 11
sp75	*Petiveria alliacea* L.	Phytolaccaceae	mucuracaá; tipi	E	Re; If; Ifc	root; leaf	tea; bath	0,08	AM; CE	7; 21
sp76	*Petroselinum crispum* (Mill.) Fuss	Apiaceae	salva; salsinha	E/Eu; Me	Co; Pr	leaf	tea	0,08	CE; MA	1; 3
sp77	*Peumus boldus* Molina	Monimiaceae	boldo	E/I	Pr	-	tea	0,04	MA	1
sp78	*Phyllanthus flaviflu*s (K. Schum. e Lauterb.) Airy Shaw	Phyllanthaceae	quebra-pedra	E	If; Ifc	entire	tea	0,04	CA	19
sp79	*Pimpinella anisum* L.	Apiaceae	erva doce	E/As	Pp	leaf; seed	tea	0,04	CA	20
sp80	*Piper marginatum* Jacq.	Piperaceae	malvarisco, pimenta-do-mato	N	Ds	leaf	tea	0,04	AM	12
sp81	*Piper nigrum* L.	Piperaceae	pimenta do reino	E	Co	leaf; fruit	tea	0,08	CE; AM	12; 18

ID	Species	Family	Popular name	Origin	Uses	Used part	Preparation	FR	Biomes	Authors
sp82	*Piptadenia retusa* P.G.Ribeiro, Seigler e Ebinger	Fabaceae	unha-de-gato	N	If; Ifc	bark; root	bath	0,04	CA	2
sp83	*Plantago major* L.	Plantaginaceae	trançagem	E/Eu	If; Ifc; Pp	entire; leaf	bath; tea; cachaçada	0,08	CA	19; 20
sp84	*Plectranthus amboinicus* (Lour.) Spreng.	Lamiaceae	hortelã grosso; hortelã graúdo	E/O	Re; If; Ifc; Vd	leaf	tea	0,04	CA	19
sp85	*Plectranthus barbatus* Andr.	Lamiaceae	tapete-de-oxalá; boldo; sete dores; anador	E/I	Ab; Co	leaf	tea	0,12	MA; CA; AM	11; 15; 19
sp86	*Plectranthus neochilus* Schltr.	Lamiaceae	sete-dores	E/A	Co	leaf	tea	0,04	AM	11
sp87	*Pluchea sagittalis* (Lam.) Cabrera	Asteraceae	quitoco	N	Pp	root; leaf	tea; bath	0,04	CA	19
sp88	*Pombalia calceolaria* (L.) Paula-Souza	Violaceae	purga-do-campo	N	If; Ifc; Pp	leaf; entire	tea; bath	0,08	MA	4; 15
sp89	*Psidium guajava* L.	Myrtaceae	goiabeira	E/As	Pp; Pr	bark; leaf	tea; bath	0,08	CA; MA	1; 19
sp90	*Pterodon emarginatus* Vogel	Fabaceae	sucupira	N	If; Ifc	bark; seed; leaf	tea; garrafada	0,04	CE	3
sp91	*Punica granatum* L.	Lythraceae	romã	E/As	Pr		tea	0,04	MA	1
sp92	*Quassia amara* L.	Simaroubaceae	quina	N	Ab; Co	leaf	juice; tea	0,04	AM	11
sp93	*Ricinus communis* L.	Euphorbiaceae	mamona	E/I; A	Bi	-	-	0,04	CA	19

ID	Species	Family	Popular name	Origin	Uses	Usedpart	Preparation	FR	Biomes	Authors
sp94	*Rosmarinus officinalis* L.	Lamiaceae	alecrim	E/Me	Pp; Pr	leaf; stem; flower	tea	0,08	CE; MA	1;18
sp95	*Ruta graveolens* L.	Rutaceae	arruda	E/Eu; Me	Pp; Re;If; Ifc; Cv; Ab;Co; Ct	leaf; flower	tea; cataplasm; bath	0,4	CA; CE; AM; MA	3; 9; 13; 14; 15; 17; 18; 19; 20; 21
sp96	*Schinus terebinthifolia* Raddi	Anacardiaceae	aroeira	N	If; Ifc; Pp	bark; leaf	tea; bath; maceration; powdered	0,12	CA; MA	2; 4; 15
sp97	*Scoparia dulcis* L.	Plantaginaceae	vassourinha	N	Ds	-	tea	0,04	CE	9
sp98	*Senna multijuga* (Rich.) H.S.Irwin e Barneby	Fabaceae	angico	N	If; Ifc	bark	tea; bath	0,04	MA	6
sp99	*Senna occidentalis* (L.) Link	Fabaceae	fedegoso	N	Pp	leaf; flower; root	tea	0,04	CA	19
sp100	*Sida cordifolia* L.	Malvaceae	malva-branca	N	Vd; Pr;		tea	0,08	MA	1; 15
sp101	*Solanum viarum* Dunal	Solanaceae	melancia da praia	N	Vd	entire	tea	0,04	CA	19
sp102	*Sphagneticola trilobata* (L.) Pruski	Asteraceae	calêndula	N	If; Ifc	leaf; floweres	tea; bath	0,04	CA	19
sp103	*Spondias purpurea* L.	Anacardiaceae	seriguela	E	Ga	-	tea	0,04	MA	1
sp104	*Stachytarpheta cayennensis* (Rich.) Vahl	Verbenaceae	gervão	N	Pp	-	-	0,04	CE	10

ID	Species	Family	Popular name	Origin	Uses	Usedpart	Preparation	FR	Biomes	Authors
sp105	*Stryphnodendron adstringens* (Mart.) Coville	Fabaceae	barbatimão	N	If; Ifc	-	-	0,04	CE	3
sp106	*Swartzia oblata* R.S.Cowan	Fabaceae	barbatimão	N	If; Ifc	bark; leaf	tea	0,04	MA	24
sp107	*Syzygium aromaticum* (L.) Merr. e L.M.Perry	Myrtaceae	cravo	E/I	Ab	-	-	0,04	MA	15
sp108	*Syzygium cumini* (L.) Skeels	Myrtaceae	janelão; jamelão	E/As	If; Ifc	leaf; fruit	in natura; cachaçada	0,04	CA	19
sp110	*Tanacetum parthenium* (L.) Sch.Bip.	Asteraceae	artemigio	E/Eu	Pp; Re	leaf	garrafada	0,04	CE	3
sp111	*Uncaria guianensis* (Aubl.) J.F.Gmel.	Rubiaceae	unha-de-gato	N	If; Ifc	leaf	tea	0,04	AM	22
sp112	*Varronia curassavica* Jacq	Boraginaceae	maria-preta	N	If; Ifc; My	leaf; root; stem	tea	0,08	MA	4; 24
sp113	*Veronica officinalis* L.	Plantaginaceae	verônica	E	If; Ifc	leaf	tea; bath	0,04	AM	22
sp114	*Vitis aestivalis* Michx.	Vitaceae	uva	E/An	Re	leaf	tea	0,04	CA	19
sp115	*Vouacapoua americana* Aubl.	Fabaceae	açacú	N	Re	bark	garrafada	0,04	AM	11
sp116	*Zingiber officinale* Roscoe	Zingiberaceae	gengibre	E/As	Pr	-	in natura	0,04	MA	1
sp117	*Zornia latifolia* Sm. var. *latifolia*	Fabaceae	arroizinho	N	If; Ifc	leaf; root	tea	0,04	MA	4

Therapeutic indications and frequently used plants

The 117 plant species identified as being used for medicinal purposes in Brazilian quilombolas were employed for treating 16 feminine health conditions (Figure 2). Fourteen of those species were also mentioned by Ososki et al. (2007) in their study of medicinal plants and cultural variations among people living in rural and urban areas in the Dominican Republic and immigrants to the United States. Those authors, however, focused on treatments of illnesses such as endometriosis, menopause hot flashes, menorrhagia, and benign uterine tumor.

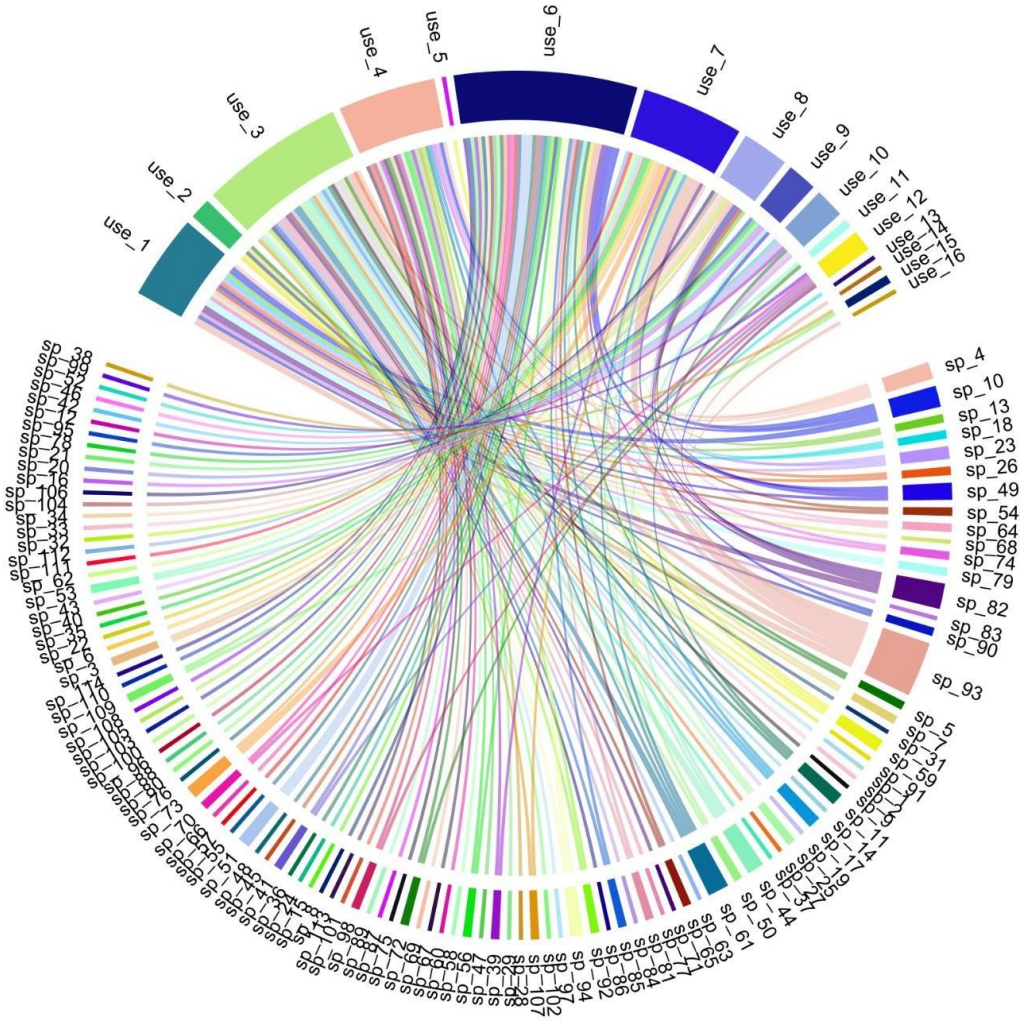

Figure 2. Chord diagram for 117 plant species cited for treating 16 illnesses related to women's health in 40 quilombola communities in Brazil. Legend: Use 1 – Menstrual colic; Use 2 - Birth; Use 3 - Postpartum; Use 4 - Pregnancy; Use 5 - Menopause; Use 6 - Feminine inflammations and/or infections; Use 7 - Menstrual Regulation; Use 8 - Abortive; Use 9 - Sexually-transmitted diseases (STD); Use 10 - Aphrodisiac; Use 11 - Fertility; Use 12 - Vaginal discharge; Use 13 - Ovary pain; Use 14 - Vaginal Itching; Use 15 - Myomas; Use 16 – Contraceptive

The postpartum phase, also known as puerperium (Use 3, Figure 2), was the most significant use-category among the quilombola communities studied, with the indication of medicinal species to control puerperium hemorrhaging and to prevent infections and

inflammations. The studies examined here indicated that the plants used postpartum were intended to "clean" the uterus, heal it, and aid in regulating normal blood flow (Kaingu et al., 2011; Kamatenesi-Mugisha and Oryem-Origa, 2007).

The terms women's illnesses, white flowers ("flores brancas"), and feminine inflammations were found to be generically used to describe female urogenital infections and/or inflammations (Use 6, Figure 2) – those being the second most cited use-category. The uses of medicinal plants to treat similar health problems were reported in research interviewing both women and health specialists in the Dominican Republic, as well as with healers (*curandeiros*) from that country living in New York (Vardeman and Vandebroek, 2022). Among women living in traditional riverside communities in Caravelas na Bahia, Brazil, sitz baths are prepared using mixtures of medicinal herbs to prevent and treat those types of female urogenital health problems (Paiva et al., 2017).

The medicinal plants indicated to be used during pregnancy (Use 4, Figure 2) help alleviate symptoms such as heartburn, colic, constipation, insomnia, pelvic and back pain, nausea, incontinence and flatulence. *Lippia alba* (Bushy Lippia, Bushy Matgrass) was considered the most versatile medicinal species and was recommended locally for all the above cited symptoms. The National Health Agency (ANVISA) of Brazil, however, notes that there are as yet insufficient studies to guarantee the secure use of that plant during pregnancy or while nursing (Brasil, 2018). According to Ahmed et al. (2018), the natural treatments used by pregnant women in Africa are also designed to alleviate nausea and vomiting, as well as stimulate and facilitate natural birth, and those authors likewise pointed out that many of the medicinal species used have not been well-studied, and possible teratogenic effects cannot be discarded.

The four species with the highest relative citation frequencies (FRC_i) were: *Ruta graveolens* (0.4) and *Dysphania ambrosioides* (0.16) – exotic species widely cultivated and utilized in Brazil, and *Anacardium occidentale* (0.16) and *Ageratum conyzoides* (0.16) - native species distributed throughout all Brazilian biomes. Species with high FRC_i values are commonly cultivated, while species with low FRC_i values tend to have restricted distributions and only local occurrences (Ahmed et al., 2018).

Ruta graveolens (*sp95*) was the therapeutic species most commonly indicated for women's health among the quilombola communities investigated (Figure 2). It is used in the postpartum phase as a menstrual regulator, as an abortive, to treat inflammations and/or infections, vaginal itching, and menstrual colic, and as a contraceptive. Its religious uses are widely known, and *R. graveolens* has been associated with Africanrituals of spiritual protection at least since the colonial period (Toriani and Oliveira, 2006). It is commonly encountered in *Candomblé* and *Umbanda* religious ceremonies where it is associated with the *orixá* (minor god or spirit) "Exu", whose nature is feminine (Duniau, 2003). The plant's origin is the Mediterranean region (southern Europe, northern Africa, and extreme western Asia or Asia Minor), but it has adapted to many climates and is now found in many regions throughout the world (Kannan and Babu, 2012). *R.graveolens* is used in traditional medicine to treat illnesses associated with the genitals, as well as respiratory, digestive and urinary systems (Brasil, 2021). In terms of women's health, it is consideredan emmenagogue herb, and is used to stimulate blood flow to the pelvic region and uterus; it is also used as an antiseptic and abortive (Brasil, 2021).

Distributions of quilombola communities and medicinal species by biome

The 40 Brazilian quilombola communities considered in this review are distributed among four of the six principal biomes of that country (Figure 3): Atlantic Forest, Cerrado, Caatinga and Amazonian.

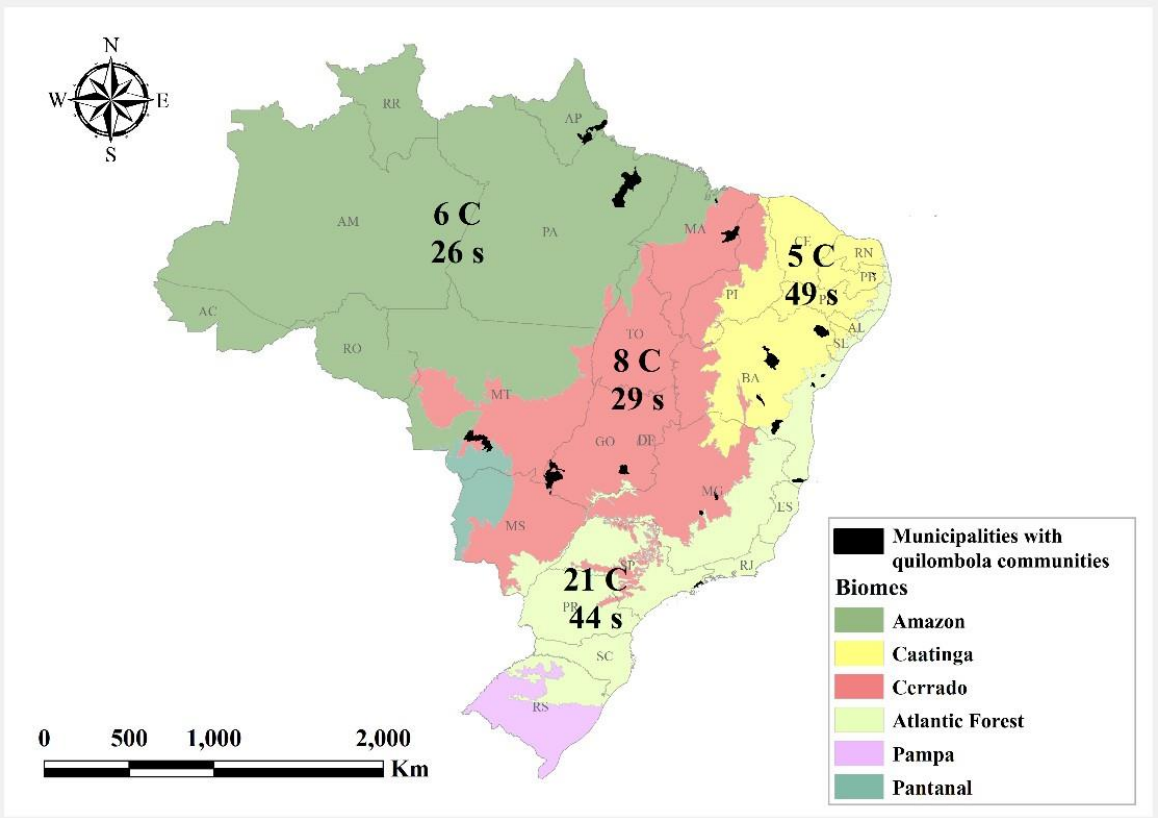

Figure 3. Number of quilombola communities investigated (C) and the numbers of medicinal species used for women's health (s) per Brazilian biome.

The tropical Atlantic Forest stretches along the eastern, northeastern, southeastern and southern coasts of Brazil (IBGE 2023). The greatest number of investigated quilombola communities (21) were found in that biome, and 44 medicinal species linked to women's health are found in that phytophysiognomy. Four medicinal species were identified in the Fazenda quilombola community (São Paulo State – SP): *Ageratum conyzoides* ("erva-de-são-joão"), *Coix lacryma-jobi* ("capiá"), *Curcuma longa* ("açafrão") and *Swartzia oblat*a ("barbatimão") (Yazbek et al., 2019); three medicinal species were identified in the Helvécia community (Bahia State): *Chiococca alba* ("trussisco"), *Mangifera indica* ("manga") and *Senna multijuga* ("angico") (Mota and Dias, 2012); 23 species were identified in the Salamina/Putumujú community (also in Bahia State) with *Pombalia calceolaria* ("purga-do-campo"), *Schinus terebinthifolia* ("aroeira"), *Varronia curassavica* ("maria-preta") and *Zornia latifolia* ("arroizinho") being used to treat inflammations and feminine infections (Lisboa, 2017); in the 18 quilombola communities situated near Território Vitória da Conquista, Bahia State, 19 medicinal species were cited as being used during gestation (Campos et al., 2020).

The quilombola communities investigated that are situated in the Cerrado biome (8) are principally located in Mato Grosso State (Bocaina, Mata- Cavalo, Mutuca and Sesmaria Mata-Cavalos), followed by Goiás State (Cedro and Piracanjuba), Maranhão State (Olho-D'Àgua do Raposo), and Minas Gerais State (Veloso) (Figure 3). That biome is considered Brazilian neotropical savanna and is the second largest biome in Brazil as well as South America (IBGE 2023). The species *Brosimum gaudichaudii* (mamacadela), *Dysphania ambrosioides* (Mexican tea), *Gossypium herbaceum* (cotton), and *Scoparia dulcis* (licorice weed) were indicated for treating candidiasis, which, according to the perceptions of the quilombola residents of those regions, is considered a Sexually Transmitted Disease –STD (Oliveira et al., 2020).

The dryland Caatinga domain is an exclusively Brazilian phytophysiognomy and covers approximately 11% of that country (IBGE,

2023). Five studies of quilombola communities (Barra, Barra II, Bananal, Casinhas, and Senhor do Bonfim) were identified for that region, with a significant richness of medicinal species used for women's health treatments (49 spp.) (Figure 3). The greatest numbers of plants were cited by the Barra II community in Bahia State, with 36 species in the female genital-urinary category, representing 73.46% of the total (Silva et al., 2012). The species *Astronium urundeuva* (87.5%) and *Abarema cochliacarpos* (53.8%) had the highest satisfactory values of Concordance of Principal Use (CPU) in anti-inflammatory treatments. Additionally, most of the residents of that quilombola community identified medicinal plants as their first therapeutic option, reflecting limitations of professional medical treatment in the region (Silva et al., 2012).

The Amazon Forest is one of the principal ecosystems in the world. It occupies parts of nine countries in South America, with approximately 60% included within Brazil (IBGE, 2023). Although the inhabitants and traditional Amazonian communities are known to have a vast knowledge concerning the use and management of medicinal plants, research undertaken in the region has only identified 26 medicinal species within the women's health category for inclusion in the present study (Figure 3). The African species used exclusively in the Brazilian Amazon were *Aeollanthus suaveolens* (for regulating menstruation and as an abortive) and *Plectranthus neochilus* (indicated for treating menstrual colic). The therapeutic indications of the African and Brazilian plants are generally based on similar principles (Albuquerque, 2001). An example of this is the species *Aeollanthus suaveolens*, known locally as *catinga de mulata* and *cheiro de mulata*, which is cultivated in Brazil for its aromatic and medicinal properties and for use in religious rituals practiced by Afro-descendants. The essential oils of that plant are valued as perfumes in Africa (Resources of Tropical Africa, 2022). Their medicinal importance is associated with the presence of therapeutic chemical compounds with anti-convulsive, analgesic and antimicrobial activities (Ferreira et al., 2017; Simionatto et al., 2007).

The lack of precise scientific identifications of some ethnospecies (such as tajá-de-pena, aroeira-do-pará, casca-doce, barbatimão, jatobá, mururé, pau-surí and erva-doce) in the articles reviewed here contributed to the low representivity of the Amazonian biome (Pereira and Coelho-Ferreira, 2017). The authors of those studies also noted that members of the quilombola communities expressed their preference for commercial pharmaceutical products for the immediate treatment of illnesses (Monteles and Pinheiro, 2007). It must be remembered, however, that among the six studies reviewed for this biome, none were focused on the health needs of quilombola women.

Ecosystem plants and their relationships with medicinal species

The relationships between the medicinal species used and the plants of each biome showed a cophenetic coefficient of correlation of 0.94 (Figure 4) – which is considered quite high (as cophenetic coefficient values vary between 0 and 1) (Figure 4). The medicinal species used by the quilombola communities and present in the Cerrado and Amazonian biomes demonstrated the highest similarities, reflecting the fact that they are neighboring ecosystems, sharing large and irregular contact areas. The Atlantic Forest was the next most similar to those biomes. The cultivation of both native and exotic species in the gardens and yards of quilombola communities corroborates to similar cultural or domesticated landscapes (Ávila et al., 2015; Voeks (2017).

The species of plants found in the Caatinga biome demonstrated the least similarity among the other communities studied. Biogeographic aspects, such as endemic species, may have influenced those results (Löwenberg-Neto, 2010).

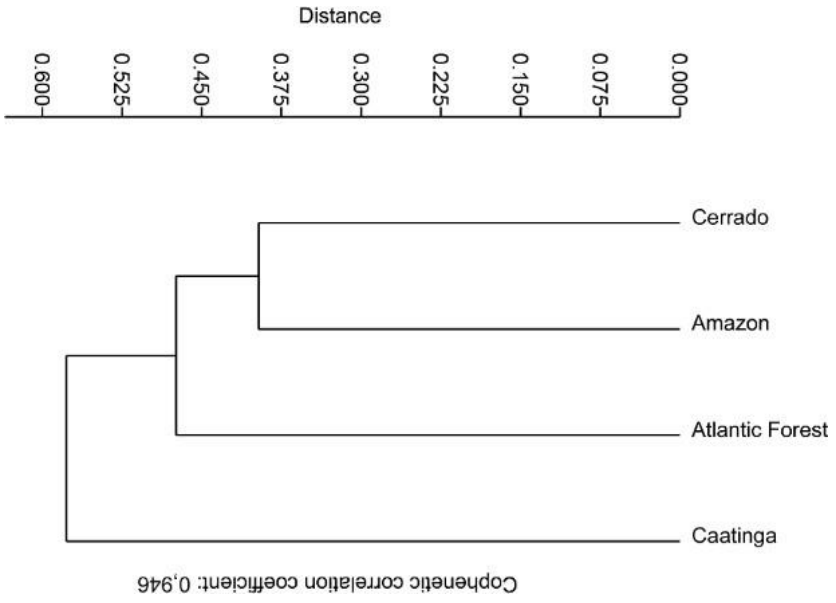

Figure 4. Similarity clusters of the medicinal species among the biomes in which the focal quilombola communities are located

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Conclusion

Studies of the medicinal plants used by Brazilian women have been scarce, and especially in terms of quilombola communities, even though the country has large numbers of those communities.

The present study has helped reveal the wide variety of traditional treatments available for women's health, principally in terms of infections and/or inflammations of the vagina and uterus and treatments to alleviate pregnancy and postpartum discomfort. Additional studies will be needed, however, to consolidate knowledge of their beneficial properties and identify any potential health risks.

The origins of the medicinal species used by quilombola communities indicated a high level of equity and demonstrated that the ethnobotanical knowledge of quilombola inhabitants included combinations of African, Amerindian, and European experiences with medicinal plants.

The similarities between the quilombola communities in terms of the presence or absence of plants used in women's health treatments were found to be tenuous, apparently reflecting the different sets of medicinal plants found in the different biomes and the cultural and historic peculiarities of each locality.

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