



Ethnorigid study of Medicinal plants used by the population assisted by the “Programa de Saúde da Família” (Family Health Program) in Marechal Deodoro - AL, Brazil

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Abstract

This study aimed to assess diagnosis of Unique Health System (SUS) users profile with regard to herbal medicine. This is a cross-sectional study with observational data collection conducted in the city of Marechal Deodoro, through a semi-structured questionnaire with questions related to socioeconomic data, use, and knowledge of medicinal plants and herbal medicines and satisfaction with the use of medicinal herbs (MH) and interactions of phytotherapeutic drugs (PD). Among the topics, 86.89% of users used herbal medicines often, especially lemon balm (*Melissa officinalis* L.). It was also observed that the plants are generally used as a sedative (21.74%) and as tea (87.84%). 82.32% of respondents claim to have acquired the knowledge of herbal medicine through a family member and 85.36% make use of medicinal plants without having received any information on the use of MH and PD. 61% of the plants described that coincided with the form of use and therapeutic properties found in the literature. With regard to satisfaction by treatment with MH and PD, it was found that 56.67% are satisfied. Therefore, it is necessary to pay attention to this aspect of usage, in order to avoid possible drug interactions or adverse reactions resulting from the incorrect use.

Keywords: medicinal plants, community, phytotherapeutics, family health program.

Estudo etnorigido de Plantas medicinais utilizadas pela população atendida no “Programa de Saúde da Família”, Marechal Deodoro, AL, Brasil

Resumo

Este trabalho teve como objetivo conhecer perfil diagnóstico de usuários do SUS com relação à fitoterapia. Trata-se de um estudo observacional transversal, com coleta de dados realizada no Município de Marechal Deodoro, por meio de um questionário semi-estruturado com perguntas relativas a dados socioeconômicos, utilização e conhecimentos sobre plantas medicinais e fitoterápicos e satisfação com o uso de plantas medicinais (PM) e medicamentos fitoterápicos (MF). Entre os usuários abordados, 87,08% utilizam plantas medicinais frequentemente, principalmente a erva cidreira (*Melissa officinalis* L.). Também foi observado que as plantas são geralmente usadas como calmante (16,05%) e na forma de chá (68,35%). 82,51% dos entrevistados afirmam ter adquirido o conhecimento sobre fitoterapia através de algum familiar e 85,56% fazem uso das PM e MF sem ter recebido algum tipo de informativo sobre o seu uso. 61% das plantas descritas pelos usuários teve seu uso e terapêutica coincidente com o citado em literatura específica. Com relação a satisfação através do tratamento com PM e MF observou-se que 56,80% estão satisfeitos. O uso de plantas medicinais por parte dos usuários é bastante frequente, principalmente pelo conhecimento acumulado ao longo de gerações. Portanto, se faz necessária maior atenção a esse aspecto de utilização, visando evitar possíveis reações adversas advindas do uso incorreto.

Palavras-chave: plantas medicinais, comunidade, fitoterapia, programa de saúde da família.

1. Introduction

Medicinal plants have been the main curative agents used since ancient medicine. According to the World Health Organization, about 80% of people still rely on traditional medicine, and today's demand is rising

because of poverty and lack of access to modern medicine (Nolla et al., 2005).

Integrative and complementary practices (PICs) comprise a set of systems, practices and clinical use

products, not considered as conventional medical practice. After the publication the national policy for Integrative Practices and Complementary (PNPIC), homeopathy, the medicinal plants and herbal remedies, medicine Chinese traditional/acupuncture, anthroposophical medicine and social thermalism-crenotherapy institutionalized in the system were only of health (SUS). In this sense, the Organization World Health Organization (who) defines Medicine

Traditional (MT) and alternative medicine and Complement (MAC) as practices that include medication therapies, which use herbs, animal parts or minerals, and therapies without medication, for example, acupuncture and therapy spiritual (Bragança, 1996; Eldin and Dunford, 2001).

This perception about the curative power of medicinal plants and the relationship between practices related to habitual use is often observed within traditional communities (Jacoby et al., 2002). According to estimates, people and traditional communities (indigenous and rural) occupy almost 25% of the Brazilian territory (Coan and Matias, 2013).

Although Brazil presents one of the world's largest vegetable biodiversity, (Zeni et al., 2017) at the same time it faces challenges and difficulties in public health. Several studies have been conducted to discover information about local folk medicine, as well as the search for plants that have effective therapeutic activity that may be complementary to modern medicine (Bruning et al., 2012).

There is a growth in the use of herbal remedies for the Brazilian population. Two factors could explain this increase. The first would be the advances occurring in the scientific area, which enabled the development of herbal remedies known to be safe and effective. The second is the increasing tendency to search for the population, by less aggressive therapies for primary health care (Yunes et al., 2001).

Thereby, the managers have stimulated the inclusion of medicinal plants, plant derivatives and herbal products in the public health system because it is considered a cheap and easy viable resource available to the Brazilian population (Brasil, 2006). However, more important than stimulating use, preserving this therapeutic knowledge is essential for ethnobotanical and ethno-pharmacological information to be passed on to future generations (Brasileiro et al., 2008).

Marechal Deodoro is one of the poles of planting and marketing of medicinal plants in Alagoas. However, according to the local prefecture and the municipal Council of Health, health professionals have not yet received training for the practices of herbal medicine, and there are no published data on the actual situation of accessibility with this therapy for public health services users.

Therefore, this research aimed to conduct an ethnorigid study of medicinal plants used by the users of the family health program in Alagoas, Brazil.

2. Materials and Methods

The present research was approved by the Research Ethics Committee of the CESMAC University Center under No. 449,467, in accordance with the guidelines of resolution CNS/MS 466/12. This is a descriptive, observational, cross-sectional study. The collection site was the municipality of Marechal Deodoro, which has public health units with the Family Health Program (PSF) in several communities: Poeira, Barro Vermelho, José Dias, Taperaguá, Estiva, Pedras, Massagueira, Barra Nova, Santa Rita, French, Vila Altina, Rua Nova, Terra da Esperança and Malhadas; that do not yet have complementary herbal medicine practices inserted in the health services available to the local population.

For the sample calculation, the criteria of 5% confidence limit and 99% confidence interval were used. The hypothetical frequency of the result factor in the population (p) was 50% since there are no published data on the use of medicinal plants in the municipality surveyed. Based on a population of 13,419, users enrolled in the PSF. The sample was calculated in 633 individuals, with a 20% increase so that any losses did not compromise the representativeness of the sample, a total number of 854 individuals were surveyed. Sampling stratification procedures were performed so that the participating users represented their community of origin.

The research subject was recruited by face-to-face verbal invitation at the PSF units during their care hours, as well as during home visits by researchers and community health agents (ACS).

We compiled secondary data, originally obtained through the application of ethnobotanical techniques such as semi-structured and open interviews (Minayo 1994; Dorigoni et al., 2001). The semi-structured and open interviews applied was blocked in four groups: the 1st containing socioeconomic information (sex, age, profession, income, family constitution, place of birth, level of schooling, type of housing); 2st containing information on use of medicinal plants and herbal medicines); and 3st containing information on desire to participate in workshops on herbal medicine.

The data was tabulated in a spreadsheet and analyzed by descriptive statistics for the calculation of frequencies (Soares et al., 2009).

3. Results

The interviews were conducted with 852 residents. It was observed that 90% of the interviewed patients were female, 9%. Male and 5% chose not to respond. The variable age ranged in the following proportion: 6, 80% had between 29, 46% over 51 years, 25, 82% from 31 to 40 years, 18 – 20, 18, 07% from 41 to 50 years, 16, 07% from 21 to 30 years, and 3, 78% not informed. Regarding the level of schooling, the vast majority of users, 51%, attended elementary school, 25% had high school, 16% did not, only 4% had the upper level and 4% were not informed. For 45, 07% of the interviewees the

monthly family income reaches from one to two minimum wages, 40, 37% has income lower than one minimum wage, 7, 51% has income higher than two minimum wages and 7, 51% not to the item. The majority of respondents, 65, 72%, did not report the type of housing that resided, 33, 21% reported living in a masonry house and 1, 05% in Taipa House. In relation to the interviewees' professions, the majority are housewife with 42, 72%, followed by a maid with 9, 5%, retired with 7%, autonomous with 4%, Seafood 2, 81%, Student 2, 69%, Craftswoman 2, 46 and others/did not inform 0-2% each (Table 1).

In case of disease 62% resort to physician, 9% did not respond, 8.80% to medicinal plants, 5.86% resorted to physician and medicinal plants, 4.57% to ACS, 3.40% to pharmacy and 0.1 to 3% responded that they resort to a healer and medicinal plants, medical and pharmacy, Health post, neighbor, nurse or others. In the medical care we highlight the SUS with 94.48% of search for users, private care with 3.75% and health plans with 1.76%. Over the healing power, 89.2% of the users believe that the plants heal, 9.15% not and 1.65 did not opinate. In the healing power of Phytotherapies 69.13% believe, 28.4 not and 2.47 did not inform.

Table 1. Socioeconomic profile of users served at the public health units of Marechal Deodoro / AL / Brazil in 2015.

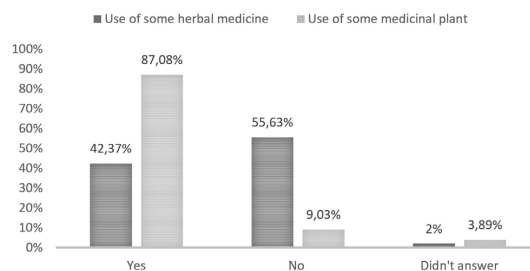
Gender	Sample	Attendance
Women	765	89.58
Male women % % TOTAL %	77	9.02
Did not answer	12	1.41
Age	Sample	Attendance
18 to 20	58	6.79
21 to 30	137	16.04
31 to 40	220	25.76
41 to 50	154	18.03
51	221	25.88
Did not answer	34	3.98
Occupation	Sample	Attendance
Housewife	364	42.62
Mussel fisherwoman	24	2.81
Self-employed	14	1.64
Student	23	2.69
Retired	56	6.56
Domestic worker	81	9.48
Handicraft	21	2.46
Other: driver, teacher, hairdresser, salesman, fireman, administrative officer, baker, civil servant, businessman, servant, packer, kitchen aid, bartender, director, lacemaker, motorcycle courier, typist, social worker, maid, washerwoman, agriultor, seamstress, restaurant owner, unemployed, waiter, cook, general services, fisherman, refrigeration technician, community officer, nursing technician, plumber, teacher assistant, clerk, notary, gardener, stonemason, store clerk, radio, manicure, watchman, cashier, cocadeira and production assistant	147	17.21
Did not answer	124	14.52
Level of education	Sample	Attendance
Non-literate student	136	15.93
Primary school	438	51.29
High school	214	25.06
College degree	36	4.22
Did not answer	30	3.51
Family Income	Sample	Attendance
Minimum wage	344	40.28
1 to 2 salaries	384	44.96
Twice the minimum wage	64	7.49
Did not answer	62	7.26
Residence structure	Sample	Attendance
Masonry	283	33.14
Taipa	9	1.05
Did not answer	562	65.81

Table 1. Continued...

Lives in residence	Sample	Attendance
Rent	124	14.52
Own	667	78.10
Others	35	4.10
Did not answer	28	3.28
Family constitution	Sample	Attendance
Adults	293	-34: 31
Elderly	12	1.41
Adults/elderly	40	4.68
Adults / children	453	53.04
Seniors/children	7	0.82
Adults / children / elderly	36	4.22
Did not answer	13	1.52
State	Sample	Attendance
Alagoas	719	84.19
Pernambuco	16	1.87
Sergipe	2	0.23
São paulo	4	0.47
Rio de janeiro	2	0.23
Paraíba	1	0.12
Paraná	1	0.12
Bahia	1	0.12
Did not answer	108	12.65
Municipality	Sample	Attendance
Rua Marechal Deodoro	424	49-65.
Maceió	126	14.75
São Miguel Dos Campos	20	2.34
Other: Junqueiro, Atalaia, Pilar, Anadia, Barra de Santo Antônio, Barra de São Miguel, Arapiraca, Porto Real do Colégio, Santana do Ipanema, Matriz de Camaragibe, Satuba e Viçosa, Murici, Pão de Açúcar, Taquarana, Chapel, Rio Largo, Coqueiro Seco, Messias, Jacuípe, União dos Palmares, Mar Vermelho, Porto Calvo, Santa Rita, São Luiz do Quitunde, Instância, Boca da Mata, Chã Preta, Cajueiro, Joaquim Gomes, Branquinha, Roteiro, Coruripe, Penedo, Campo Alegre, Passo de Camaragibe, São José da Lage, Palmeiras dos Índios, Santa Luzia do Norte, Piacabuçu, São Paulo, Recife, Aracajú, Rio de Janeiro, São José da Lagoa Tapada, Salvador, Mocambo, Correntes, Garanhuns, São João, Águas Belas	145	16.98
Did not answer	139	16.28

As observed in graph 1, 87.01% of the interviewees used medicinal plants frequently, and the most cited plants were: the lemongrass (*Melissa officinalis*) (16%), Mint (*Mentha x piperita*) (16%), Capim Santo (*Cymbopogon citratus*) (11%), Boldo (*Peumus boldus Molina*) (10%), Aroeira (*Schinus Terebinthifolius*) (5%), chamomile (*Matricaria chamomilla*) (3%), sweet herb (*Pimpinella anisum*) (3%), Barbatimão (*Stryphnodendron adstringens*) (3%), Mastruz com (*Chenopodium ambrosioides*) (3%) and Eucalyptus (*Eucalyptus globulus*) (3%).

It has been found that SUS users mainly use medicinal plants as: calming (16.05%), digestive (10.74%), flu (10.06%), Antiinflammatory (7.85%) and analgesic (5.80%). The parts of the plants most commonly used by the user are sheet (71.24%), root (3.46%) and shell (3.35%) (Tables 2 and 3).



Graph 1. Use of medicinal plants and phytotherapies by users of health units, Marechal Deodoro-AL, Brazil, 2015.

Users get the plants at home (41.49%), marketing (16.42%), with neighbors (12.63%), in the street (9.82%), fair (2.76%) and with the family (1.75%). 15.13% of users interviewed have not responded to this question.

Table 2. Relationship of plant medicines used by users of the health units of Marechal Deodoro/AL/Brazil in 2015 with therapeutic use coincides with the scientific literature.

Popular Name - Scientific Name (s)	Data collected in the community			Data from the scientific literature		
	Analyzed	Usage:	Popular use	Part and mode of use	Indications in literature	REFERENCE
Avocado - <i>Persea folium</i>	Leaf	Tea	Abdominal pain, inflammation, kidney.	Infusion - 4g of fresh leaves in 1/2 Cup of water	Diuretic antidiarrheal	(Cabral et al., 2014; Lima, 2008)
Watercress - <i>Nasturtium officinale</i>	Leaf	Tea, Syrup	Flu	Infusion - 2g of dried herb to every cup of water	Antiseptic, antimicrobial, antiscorbutic, bile duct, lung condition (cough, bronchitis) expectorant.	(Lima, 2008; Cavalcante, 2013)
Aniseed and fennel. <i>Pimpinella anisum</i>	Leaf and Flower	Tea	Stomach Ache	Infusion - 1.5g dried fruit in 150 mL water or 3g of dried seed (1 Dessert spoon for each cup of water) in decoction.	Antidyspeptic and antispasmodic.	(Lima, 2008; Brasil, 2010; Cavalcante, 2013)
Aroeira - <i>Schinus terebinthifolius</i>	Leaf and Flower	Tea	Inflammation and cicatrizization	Tincture - 10 to 20 mL of tincture diluted in water. Decoction - 2g leaves, one tablespoon of dried peel, for internal, external use and compresses.	Anti- inflammatory, skin conditions, diuretic.	(Lima, 2008; Brasil, 2010; Cavalcante, 2013)
Barbatimão - <i>Stryphnodendron barbadetiman</i>	Bark, leaf, root.	Tea	Inflammation	Tincture - 10 to 20 ml of tincture diluted in water. Decoction - 4g of dried peels (1 tablespoon for each cup of water). Dust from the shells can be used topically on wounds. Baths - 5 mL of tincture in 1 l of warm water.	Leucorrhea, urethral and vaginal discharge, hemoptysis and uterine bleeding, healing, astringent, antidiarrheal, and scurvy affections	(Lima, 2008; Brasil, 2010; Cavalcante, 2013)
Babosa - <i>Aloe vera, Aloe barbadensis, Aloe perfoliata.</i>	Leaf	Tea	Hair, wound healing	Juice - the leaf is cleaned with alcohol where some of the green parts are removed in order to get to the gel to brush the burn/wound.	Healing, antimicrobial, laxative.	(Brasil, 2010; Matos and Lorenzi, 2002)
Boldo from Chile - <i>Peumus boldus</i>	leaf	Tea	Gases, poor digestion, stomach	Infusion - 1-2g dried leaf in 150 mL water	Anti-dyspeptic, cholagogue and, anti-inflammatory.	(Brasil, 2010)

Table 2. Continued...

Popular Name - Scientific Name (s)	Data collected in the community			Data from the scientific literature		
	Analyzed	Usage:	Popular use	Part and mode of use	Indications in literature	REFERENCE
Chamomile - <i>Chamomilla recutita</i> , <i>Matricaria chamomilla</i>	Flower and leaf	Tea	Anxiolytic	Internal Use Infusion - 3g dried inflorescences in 150 mL water For external use Infusion - 6-9g dry inflorescences 100ml Mouthwashes and/or gargling	Internal use: antispasmodic, anxiolytic and mild sedative External use: anti-inflammatory in disorders of the oral cavity.	(Brasil, 2010)
Laportea- <i>Urtica dioica</i>	Leaf	Tea	Pain	Infusion - 2g of dried leaves (1 tablespoon for each cup of water)	Analgesic	(Lima, 2008)
Holy grass, lemongrass, cimic grass, lemongrass and lemon balm - <i>Cymbopogon citratu</i>	Leaf	Tea	Pain, sedative, flu, upset stomach, headache.	Infusion - 1-3g dried leaf in 150 ml water	Antispasmodic, anxiolytic, hypotensive, anticonvulsant, analgesic, antihelmintic, mild anti- rheumatic sedative.	(Lima, 2008; Brasil, 2010; Cavalcante, 2013)
Lemongrass - <i>Melissa officinalis</i>	Leaf	Tea	Sedative, tummy ache, pain, cough and fever.	Infusion-1-4g dried flowering masters in 150 ml water. Decoction-2g of leaves and branches fresh or 1g of dried leaves and branches (1 Dessert spoon for each cup of water).	Antispasmodic, anxiolytic and mild sedative, digestive, hyperthyroidism, topical agent for cold sores.	(Brasil, 2010)
Cologne - <i>Alpinia zerumbet</i>	Leaf	Tea	Calming, heart, high blood pressure.	-Dye 20g dried leaves in 100 ml alcohol 70% p/p q.s.p. Infusion-2g (1 Dessert spoon for each cup of water) of rhizomes in decoction.	Analgesic, anti- inflammatory, diuretic, antispasmodic, uterine stimulant, antidepressant and antihypertensive and cardioprotective in cases of mild hypertension.	(Correa et al., 2010)
Eucalyptus - <i>Eucalyptus globules</i>	Leaf	Tea	Fever, flu and pain.	Infusion-1g of dried herb or 2 g fresh herb (1 Dessert spoon for each cup of water)	Influenza, bronchitis, asthma, expectorant, rheumatic diseases, insect repellent and antiseptic.	(Lima, 2008)

Table 2. Continued...

Popular Name - Scientific Name (s)	Data collected in the community			Data from the scientific literature		
	Analyzed	Usage:	Popular use	Part and mode of use	Indications in literature	REFERENCE
Bristly Starbur- <i>Acanthospermum hispidum</i>	Leaf, root	Tea	Flu and fever	Decoction-2g of roots and leaves in (1 tablespoon for each cup of water) Infusion - 4g of roots and Roots leaves in (1 tablespoon for each cup of water) Root - Syrup	Leaf: Anti- dysmenorrheal, anti-gonorrhea, anti dysenteric, combats hematuria, antifebrile Roots: Dysentery	(Lima, 2008)
Ginger - <i>Zingiber officinale</i>	Roots	Tea	Flu and sore throat	Infusion - 0.5 - 1g dried rhizomes in 150mL water	Anthelmintic, antacid, expectorant and in cases of motion sickness.	(Brasil, 2010)
Common Guava - <i>Psidium guayava</i>	Leaf	Tea	Stomach Ache	Infusion - 2 g of dried leaves or 4 g of fresh leaves in (1 tablespoon for each cup of water)	Diarrhea, bactericidal, fungicidal, amebicida, analgesic.	(Lima, 2008)
Mint- <i>Mentha x piperita</i>	Leaf	Tea	Colic, stomach ache, flu and pain	Infusion - 1.5g dried leaves and flowering solids in 150mL Water	Antispasmodic, analgesic, irritable bowel syndrome and antifatulent	(Brasil, 2010)
Orange - <i>Citrus sinensis</i>	Leaf	Tea	Flu and pain	Infusion - 2 teaspoons of leaves for 1 cup of tea	Anthelmintic, anti-hemorrhagic, anesthetic, aperient, sedative, digestive, depurative, diuretic, emmenagogue, laxative, intestinal regulator.	(Brasil, 2010)
Lemon - <i>Citrus x lemon</i>	Fruit	Juice	Flu	Infusion from fruit or juice.	Flu	(Keffuri, 2011)
Bayleaf - <i>Laurus nobilis</i>	Leaf	Tea	Fever and intestinal problems	Infusion - 4g of fresh leaves or 2g of dried leaves (1 tablespoon for each cup of water)	Antiseptic Digestive	(Lima, 2008)
Passion fruit - <i>Passiflora alata</i>	Leaf	Tea	High Blood Pressure	Infusion - 2g of dried leaves (1 tablespoon for each cup of water)	Antihypertensive, anxiolytic.	(Lima, 2008)
Wormseed - <i>Dysphania ambrosioides</i>	Leaf	Tea	Pain, flu and intestinal worms	Tincture - 15mL diluted in water. Infusion - 4g of fresh plants (1 tablespoon for each cup of water)	Muscle pain, rheumatism, bronchitis, bruising, respiratory infection, digestive, rheumatic pains and Helminthiasis.	(Lima, 2008)

Table 2. Continued...

Popular Name - Scientific Name (s)	Data collected in the community			Data from the scientific literature		
	Analyzed	Usage:	Popular use	Part and mode of use	Indications in literature	REFERENCE
Pitanga (Brazilian Cherry) - <i>Eugenia uniflora</i>	Leaf	Tea	Stomach ache	Infusion - 4g of fresh leaves or 2g of dried leaves (1 tablespoon for each cup of water)	Fevers, stomach disorders, hypertension, rheumatism, bronchitis, sedative, anti-inflammatory.	(Lima, 2008)
Stonebreaker - <i>Phyllanthus niruri</i>	Leaf	Tea	Kidneys	Infusion - 3g of aerial parts in 150mL water.	Litolytic in cases of urinary lithiasis.	(Brasil, 2010)
Pomegranate - <i>Punica granatum</i>	Bark	Tea	Throat	Infusion - 5g dried bark or 10g fresh leaves (1 tablespoon for each cup of water)	Pharynx and throat disorders, heart disease, diarrhea and aging.	(Lima, 2008)
Coral Plant - <i>Jatropha multifida L</i>	Sap	Juice	Bleeding	There isn't any	Cicatrizant aid, anti-hemorrhagic, laxative, antirheumatic and antihypertensive.	(Buch et al., 2008)

Table 3. List of medicinal plants utilized by health facilities users from Marechal Deodoro / AL / Brazil in 2015 with therapeutic use not coinciding with that of scientific literature.

Popular Name - Scientific Name (s)	Data collected in the community			Scientific literature data		
	Part	Usage	Popular usage	Part and usage	Indications in Literature	Bibliographic reference
Artichoke - <i>Cynara cardunculus L.</i>	Leaf	Tea	Abdominal pain, cramps	Infusion - 2g fresh leaves or 1g dry leaves (1 dessert spoon for each cup of water).	Hepatobiliary disorders, diabetes, kidney disorders, antihypertensive	(Brasil, 2010)
Rosemary - <i>Rosmarinus Officinalis</i>	Leaf	Tea	Poor digestion, flu	Infusion - 2 - 3g dry leaves in 150mL water	Anti-inflammatory and antiseptic of the oral cavity.	(Brasil, 2010)
African basil - <i>Ocimum gratissimum L.</i>	Leaf	Tea, syrup	Pain, fever, high blood pressure and flu	*	Antiseptic, antifungal	(Brasil, 2010)
Blackberry - <i>Morus nigra, Morus alba</i>	Leaf	Tea	Hormonal replacement	Tincture- 10 - 20mL of the tincture diluted in water Infusion - 2g of dried leaves (1 tablespoon for each cup of water)	Disorders of the mouth, throat and lung, teeth, skin conditions, menopausal hot flashes	(Lima, 2008)
Ampicillin	Leaf	Tea	Inflammation	*	*	*

* Data not found in Literature.

Table 3. Continued...

Popular Name - Scientific Name (s)	Data collected in the community			Scientific literature data		
	Part	Usage	Popular usage	Part and usage	Indications in Literature	Bibliographic reference
Freshcut- <i>Justicia pectoralis</i>	Tea	Leaf	Headaches	Juice - the leaf is sanitized with alcohol where part of the green is removed so as to leave the gel to brush the burn / wound.	Cicatrization aid, antimicrobial, laxative.	(Lima, 2008; Brasil, 2010; Cavalcante, 2013)
Common rue- <i>Ruta graveolens</i>	Leaf	Tea	Inflammation	Not recommended due to its great therapeutic potential	Not recommended due to its great therapeutic potential	(Lima, 2008)
Indian Shot Canna Indica	Leaf	Tea	Kidneys	*	*	*
Cinnamon - <i>Cinnamomum verum</i>	Roots	Tea	Anxiolytic	Infusion: 1g of dried peels in 150mL water	Appetite stimulant, anti- dyspeptic, antiflatulent and spasmolytic.	(Brasil, 2010)
Black tea - <i>Camellia Sinensis</i>	Leaf	Tea	Stomach ache and poor digestion	Infusion: 1g of herb to 100mL of water	Reduction of cholesterol levels, immunostimulatory, antimicrobial and antioxidant, prevention of chronic-degenerative diseases.	(Nishiyama et al., 2010)
Espinheira- santa - <i>Maytenus ilicifolia</i>	Leaf	Tea	Liver	Infusion - 3g dried leaves in 150mL water	Antidyspeptic, antacid and gastric mucosa protector.	(Brasil, 2010)
Garrida	Roots	Tea	Infection	*	*	*
Jurubeba- <i>Solanum asperolanatum</i>	Fruit	Juice		Decoction - Unspecified	Stomach aches, antiparasitic.	(Di Stasi et al., 2002)
Indian mulberry <i>Morinda citrifolia</i>	Fruit	Juice	Every part	*	Anti-bacterial fruits, analgesic, anti-congestitive, antioxidant, expectorant, anti-inflammatory, astringent, emollient, emmenagogue, laxative, hypotensive, blood purifier, immunostimulant and tonic. Anti-cancer action is also attributed to the fruit	(Brasil, 2010)

* Data not found in Literature.

Table 3. Continued...

Popular Name - Scientific Name (s)	Data collected in the community			Scientific literature data		
	Part	Usage	Popular usage	Part and usage	Indications in Literature	Bibliographic reference
Elderberry - <i>Sambucus nigra</i>	Flower	Tea	Stomach aches, flu	Infusion - 3g of dried flowers in 150 ml of water	Diaphoretic	(Brasil, 2010)
Comb Hyptis - <i>Hyptis pectinata</i>	Leaf	Tea	Flu	*	Antiedematogenic and contraceptive.	(Melo et al., 2001)
Foot of thorn	Leaf	Tea	Flu	*	*	*
For everything	Leaf	Tea	Flu	*	*	*

* Data not found in Literature.

The transmission of knowledge about the use of these medicinal plants and herbal remedies did mainly within the family environment (82%). Also was quoted as important in the transmission of this knowledge about the use of medicinal plants the neighbors (5.63%) and the doctors, nurses, books, radio, television and ACS, with relative frequency less than 2%.

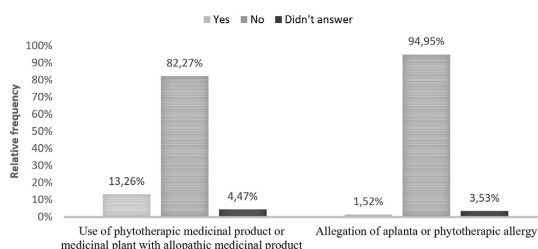
Of those surveyed, 79.69% do not usually store the plants before the preparation, 17.28% store. The others have not responded to this question. Of the total respondents who answered that store the plants before the preparation, only 44.89% specify the location where the usually store. The most cited were: the cooler (18%-for medicinal plants and 37% for herbal medicines) and the plastic bag (10% for medicinal plants).

It was found that only a small portion (13.26%) the community makes use of medicinal plant or medicine herbal medicines during treatment with allopathic drugs (Graph 2) such as paracetamol (11.50%), analgesics (4.42%) or anti-inflammatory drugs (3.53%). The majority of respondents (64%) no answer to that question and a range of 1 to 3% cited the use of antibiotics, birth control, dypirone, omeprazole, anador, sedative, multigrife, diclofenac, diazepam, anador, hidromed, company and dypirone.

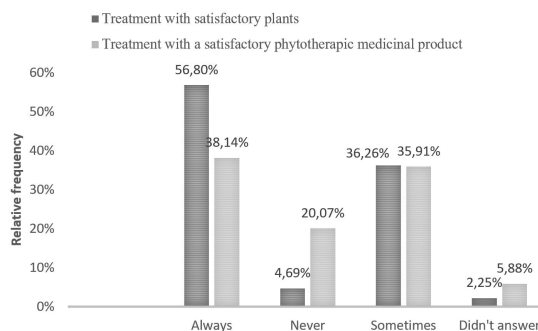
It is noteworthy that only 1.52% of respondents claimed to have presented some type of allergy to medicinal plants or herbal medicines. The plants cited in this case were: lemon grass (7.69%), nettle (7.69%), Aroeira (7.69%). 69.24% of respondents who claimed to have had this effect, did not inform the responsible medicinal plant. No phytotherapeutic medication was reported by these volunteers.

It was observed that 56.80% and 38.14% of the users are satisfied with the results obtained in the treatment with medicinal plants or herbal medicines, respectively (Graph 3).

It was also found that 85.56% of the interviewees never received any informative material, such as a folder, booklet or pamphlets, on phytotherapy. Only 12.32% claimed to have received this type of material and 2.12% did not answer that question. Lastly, it was questioned whether the interviewees would like to participate in workshops and/or lectures on plants with medicinal properties or



Graph 2. Use of phytotherapeutic medicine or medicinal plant with allopathic medication by users of health units, Marechal Deodoro-AL, Brazil, 2015.



Graph 3. Satisfaction index related to medicinal plants and medicinal plants by the users of health units, Marechal Deodoro-AL, Brazil, 2015.

herbal medicines, and 62.2% said they had an interest in participating. 35.56% said they would not want to participate and 2.24% did not.

4. Discussion

The use of medicinal plants is increasingly being the target of scientific research, which in most cases aims to detail this popular culture in a community, ranging from knowledge about the use of plants and herbal medicines used, to evidence of its therapeutic and prophylactic potential, and to the way this knowledge propagates through generations.

In Marechal Deodoro, little instruction to the users was given by healthcare professionals, causing the exclusion of said instruction as an offer to users of public healthcare services. This situation was confirmed by our research, although the majority (86.89%) of the users utilized medicinal plants to treat their diseases, they did so mainly through family encouragement (82.32%) and not through professional.

The results obtained in this research indicated that women continue to be the holders of this folk knowledge which corroborate with results from previous research, where the highest number interviewees are females. Another possible explanation for this is that men were absent from home or the healthcare units for work reasons (Melo et al. 2001; Arnous et al. 2005; Marinho et al., 2011). The interviewed women were mostly housewives, which explains their in-person availability to participate in the research. Similar results were observed in other municipalities in Brazil, such as Sobral, where 66.7% of interviewees were women and housewives (Nascimento et al., 2013).

It can be affirmed that the majority of users who benefited from therapeutic manipulations based on the use of medicinal plants had elementary education, a finding observed in other cities such as Governador Valadares (56.40%), and Mirassol D'Oeste (55%) (Brasileiro et al., 2008; Carniello et al., 2010). This population with a low level of knowledge ends up limited to the knowledge passed by family members, and therefore the transmission of correct knowledge to the future generations guarantees the appropriate use.

When a health problem was present, the majority (61.36%) of the users from Marechal Deodoro would first resort to the doctor, who mainly prescribed allopathic medicines. Only 17.33% of the users reported the medicinal plants as the first option and 5.85% made the associated use of allopathic drugs and complementary therapies without indication, representing a risk to the population. Differing data were observed in the town of Manejo, where the behavior adopted in the face of disease in a family member was not the search for traditional medicine, as in Marechal Deodoro, but medicinal plant preparations indicated by relatives, as the first option being this millennial therapeutical form (Oliveira and Menini Neto, 2012).

Overall, 86.89% of users reported the use of medicinal plants at some point for the treatment of their diseases. This high utilization rate found in the research corroborated with those obtained in other communities from Minas Gerais (90%) (Carvalho et al., 2013), Teutônia (92.9%) (Schwambach and Amador, 2007) and Juvenília (97%), where a large part of this population sought alternative measures due to the ease of acquisition of medicinal plants, the influence of the family tradition and the high cost of allopathic medicines. In Brazil, due to the diversity of its biome, it is frequent to observe several types of plants with medicinal properties (Costa and Mayworm, 2011).

Lemon grass (*Melissa officinalis* L.), mint (*Mentha x piperita*) and holy grass (*Cymbopogon citratus*) are among the most cited medicinal plants not only by the population of

Marechal Deodoro but also by other Brazilian communities living in Manejo - Lima Duarte (Oliveira and Menini Neto, 2012) and Governador Valadares (Brasileiro et al., 2008).

Lemon grass is a plant traditionally used to induce calmness, reduce stress and improve cognition for it is proven to be a mild sedative and anxiolytic. It works on abdominal cramps (antispasmodic) and symptoms of indigestion (anti-dyspeptic). The recommendations for mint are the same as lemon grass (anti-dyspeptic and antispasmodic). Guaco syrup was indicated in this research as the most used herbal medicine, it is composed of the hydroalcoholic extract of *Mikania glomerata*, aids in the treatment of respiratory tract disorders such as persistent coughs and coughs with expectoration. It has as its main component coumarin, to which the effect of bronchial dilation and elimination of respiratory secretions through coughing is attributed (Lucena et al., 2015; Lima et al., 2013; Zago et al., 2009; Nunes et al., 2015).

The purposes of using the medicinal plants indicated in this study were similar to those determined in the studies carried out in the community health center (PAM) of the municipal government of Passo Fundo (Silva and Hahn, 2011) and in Cascavel – Paraná (Tomazzoni et al., 2006), where the most frequently mentioned therapeutic properties were digestive (76%), sedative (43%) and anti-influenza (37%).

Of the commonly used parts, the leaves received the higher frequency of use citation due to the fact they are exposed in most plants, and can be used at any time of the year. Other structures may present seasonality as is the case of the flower (Botelho et al., 2014), in addition to the fact that the harvesting of leaves does not pose an immediate risk to the plant.

Of the 44 species cited, 61% had their popular use coinciding with that cited in the literature and two species cited by the popular name, were not found in the literature (pé de espinho and ampicilina). Indian mulberry (*Morinda citrifolia*) was cited as a "jack of all trades" plant, with no standardization of use and therefore was classified as misused. Coralbush (*Jatropha multifida*) still has its toxicity and pharmacological action as the target of studies (Buch et al., 2008). Some plants have their therapeutics correctly cited by users, but with divergence of scientific findings in the method of use. As is the case with the freshcut (*Justicia pectoralis*) (Cavalcante, 2013), jurubeba (*Solanum asperolanatum*) (Di Stasi et al., 2002). Common rue (*Ruta graveolens*) does not have its use recommended, due to the strong therapeutic action in the organism (Lima, 2008).

The correct use of medicinal plants was observed in the study carried out in Campina Grande - Paraíba, where the interviewees used medicinal plants and herbal medicines safely, because 21.42% obtained this knowledge from living with friends, 7.14% with relatives and 57.13% with their parents. In addition, 7.14% of those interviewed learned this folk culture by helping older people prepare and sell the herbs or learned by themselves with the daily practice of sales in the workplace (França et al., 2008).

It was possible to observe that the users still maintain the habit of cultivating the medicinal plants in their residences, which is certainly consistent with the familial transmission of the use of these vegetable species. Corroborating with this information are several researches showing that the use of medicinal plants is facilitated through their obtention, being cultivated by the users themselves in their backyards or gardens, facilitating immediate consumption where they are probably still used fresh (Botelho et al., 2014; Carvalho et al., 2013; Marinho et al., 2011).

In learning about the use of plants, research confirms the theory that therapeutic use is part of a knowledge and tradition passed on from generation to generation, since knowledge about home-made preparations with medicinal plants has been passed on by some family member, probably the oldest one in the family (Nascimento et al., 2013). Studies such as the one in the municipality of Teutônia in Rio Grande do Sul and in São José de Espinhares in Paraíba describes that learning about the use of medicinal plants was acquired through the parents (Brasil, 2004; Schwambach and Amador, 2007).

In relation to storage it is stated that fresh plants should not remain in the refrigerator for more than a week inside plastic bags and neither the dried ones kept for more than three months (Matos and Lorenzi, 2002). Due to the lack of technical and scientific guidelines on the storage of plants after their preparation and use, and to the variation of the types of preparations, it is recommended to use them right after the preparation and not to reutilize the plant in other manipulations. In this study, it was observed that even without having access to scientific information most users did not usually store the plants before their preparation, which brings benefits to the maintenance of their health. This behavior was also observed in relation to herbal remedies, which still have the advantage of greater stability, due to the chemical processing to which they were submitted.

Incorrect usage of plants or herbal medicines can cause adverse reaction or intoxication and being able to identify them properly is very important. There is an insufficient supply of technical information for most medicinal plants, so as to ensure quality, efficacy and safety of their use, and factors such as the use of fresh plants, temperature, sun exposure, drying, packaging can affect quality and consequently the therapeutic value of these plants (Arnous et al., 2005; Calixto, 2000; Siqueira et al., 2015).

We must be careful with the use of allopathic medicines and herbal remedies since the mixture of both can generate overdose, inhibitive effect or adverse reaction. The Ministry of Health uses pharmacovigilance of herbal medicine and spontaneous notification of reactions to medications, as well as monitoring patients who use conventional medicines and phytoterapeutics (Capasso et al., 2000; Veiga-Junior and Mello, 2008; Cordeiro et al., 2005; Amorim et al., 2007).

With the lack of scientific basis and knowledge about the correct use and manipulations of plants and herbal medicines we noticed a great difference between the levels of satisfaction among them. What is striking is that

by seeing to the need of the majority, medicinal plants and herbal remedies tend to remain active, perpetuating themselves from generation to generation.

Health at the primary level is focused on health promotion where this information is spread through lectures in waiting rooms and group activities, generating interest and curiosity in the population about the proposed theme. In the study it was noticed that 62.06% of those who attend the units are interested in the subject. However, there is a shortage of educational actions aimed at the use of medicinal plants and herbal remedies on behalf of the managers, portraying the profile of a population whose health care culture, inherited from a family history, is memorable and that they believe that their self-knowledge is sufficient to supply their infirmities by making empirical use of these medications (Nascimento et al., 2013).

Despite being satisfied with the use of medicinal plants, there is a lack of stimulation for the safe usage of herbal medicine being necessary to rescue and exploit this knowledge not only for the population, but for professionals who work directly with it, since there is a need for actions that involve this type of alternative practice, since it is inserted and well diffused in the sociocultural context of these subjects.

5. Conclusion

In the community searched is observed to tradition of its inhabitants to get by natural resources for curing diseases. The large number of plants cited in this work (44) reaffirms the importance of ethnobotany research in the rescue traditional knowledge; either by the cultural historical value is due to the need to confirm the indications of use. The main way of preparing medicines is through teas using leaves and/or part area of plants. This work is expected to contribute with a proposal for guidance on the use of medicinal plants in the system public health.

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