academicJournals

Vol. 11(48), pp. 770-777, 25 December, 2017
DOI: 10.5897/JMPR2017.6513
Article Number: 6903A6867051
ISSN 1996-0875

http://www.academicjournals.org/JMPR

Journal of Medicinal Plants Research

Full Length Research Paper

Preference analysis between the use of drugs and plants in pain management in a quilombola community of the state of Ceará, Brazil

Ádamo Xenofonte Brasil[1,2], Maysa de Oliveira Barbosa[2], Izabel Cristina Santiago Lemos[1,2], Cícera Norma Fernandes Lima[1,2], Gyllyandeson de Araujo Delmondes[2], Giovana Mendes de Lacerda[2], Álefe Brito Monteiro[2], Diógenes de Queiroz Dias[1], Andressa de Alencar Silva[2], George Pimentel Fernandes[2], Roseli Barbosa[2], Irwin Rose Alencar de Menezes[2], Henrique Douglas Melo Coutinho[3], Cícero Francisco Bezerra Felipe[4], Marta Regina Kerntopf[2*]

[1]Programa de Pós-graduação em Etnobiologia e Conservação da Natureza (PPGEtno), Universidade Federal Rural de Pernambuco (UFRPE), Recife, PE, Brasil.
[2]Laboratório de Farmacologia de Produtos Naturais (LFPN), Departamento de Química Biológica, Universidade Regional do Cariri (URCA), Crato, CE, Brasil.
[3]Laboratório de Microbiologia e Biologia Molecular (LMBM), Universidade Regional do Cariri (URCA), Crato, CE, Brazil.
[4]Departamento de Biologia Molecular, Universidade Federal da Paraíba (UFPB), João Pessoa, PB Brasil.

Received 4 October, 2017; Accepted 30 October, 2017

The objective of this study was to analyze the context of the management of people from traditional quilombola community, in relation to the use of plant species and allopathic drugs used in treatment of pain. Questionnaires were used to determine the socio-demographic profile and the interview-semi-structured method with participants adopted. The analysis of data was done by statistics for the socio-demographic variables and the discourse of the collective subject to interpret the contents of the interview. There were 52 residents interviewed, predominantly (67%) by female. Most of the participants have low education level and the main occupational activity is agriculture. In the treatment of pain, herbal teas were considered the preferred method by the participants. Some used allopathic medicines, but attribute to plants the meaning of greater effectiveness in therapy. It has also been noted that informants did not use concomitant drugs and plants because of the fear of poisoning. It is concluded that there is a shortage of studies on the representations and meanings of the preference of inhabitants of traditional localities, considering plant species and industrialized drugs specific for pain, as well as for the treatment of diseases in general. Thus, it is expected that this work will arouse the interest of researchers in studying more about popular knowledge and health management.

Key words: Popular knowledge, pain, medicinal plants.

INTRODUCTION

The definition of pain is of a sensitive and/or emotional nature experience, linked to a tissue or potential injury, and may be capable of causing some impairment in quality of life (Haeffner et al., 2012). Related to a

pathological process or not, pain is among the main reasons that lead the population to seek health services (Holtz and Neto, 2008; Nascimento and Kreling, 2011). In this view, several methods have been sought in the treatment of pain with a view to relief or cure, mainly by those who coexist with chronic pain, arising from conditions such as rheumatic diseases. Among these alternatives, the use of medicinal plants is one of the most common and also the oldest therapies among civilizations (Bavaresco et al., 2016).

In this context, Brazil is one of the countries that has the largest and most important species biodiversity (around 20% of the world total), with an estimated number of 350,000 to 550,000, of which 55,000 are already cataloged. This scenario is due to the tropical characteristics of the country and the distribution of this diversity is wide, considering all regions of the territory (Ribeiro et al., 2014).

In the case of Northeast region, especially the state of Ceará, data estimate that there are approximately 46% of xerophilous species, endemic and little explored in the pharmacological area. However, these are well known among traditional populations and employed in healthcare (Cartaxo et al., 2010).

Hence, the study of popular knowledge has been of great interest by the scientific area, since traditional medicine is able to provide subsidies for sciences, especially when considering the discovery of new medicines for the treatment of various diseases (Badke et al., 2012). Conversely, it should be noted that, with the advancement of public policies and programs, the access to industrialized drugs for the treatment of pain and other diseases has been possible in many communities. It is also believed that, people know how to recognize the most efficient plant species because studies show that the plants with the best biological activity seem to be used by a greater number of people (Medeiros et al., 2013; Portela et al., 2010).

Thus, the objective of this study was to analyze the preference for the use of plants or drugs as therapy for pain – considering the concept of preference as the conscious act of the informant, in choosing a resource at the expense of others who are also available – by a traditional quilombola community with access to both resources.

MATERIALS AND METHODS

Description of the study area

The Sítio Arruda community (Figure 1) is located in the municipality of Araripe-CE, approximately 17 km from the urban area, belonging to the Cariri region. Considered as a remaining quilombola area, its territory was recognized by the Palmares Cultural Foundation (FCP) in May, 2009. However, land regularization by the state of Ceará was only possible in 2015 (FCP, 2009; INCRA, 2015).

With a total area of 334 hectares and 39 resident families, Sítio Arruda is situated approximately 528 km from the capital city of Fortaleza which has the following geographic coordinates: Latitude 7°11'51.75"S and Longitude 40°15'32.96". It has a typical soil and vegetation variations of semiarid, flat relief, smoothly undulated with pluvial plain and annual precipitation estimated between 500 and 700 mm. The main economic activity of the locality is subsistence agriculture (Sousa and Fernandes, 2016).

Procedure for data collection and data analysis

The completion of this work obeyed the ethical precepts of research with human beings, highlighted in Resolution 466/2012 of the National Health Council (Brazil Ministério da Saúde, 2012). The approval by the Ethics Committee had an opinion number 1367311. The data collection period was between August, 2016 and January, 2017. An initial visit was made to the locality and, mediated by a community leader, a prior knowledge about the chosen region was provided. The main purpose of this contact was to gain trust, which is indispensable in obtaining information known as the "rapport" technique (Albuquerque et al., 2010). At this time, the proposal of the study was presented to the leader, emphasizing the objectives and the relevance. With authorization given by the community representative, the next step was the composition of the sample. In this way, men and women residing at the site were selected, 21 years and above.

Firstly, a questionnaire for characterizing the socio-demographic profile was applied to all those involved, with an interview performed. The speeches were obtained through the use of a tape recorder. The elaborated script obeyed the semi-structured interview technique, containing 5 questions: 1. Do you prefer the use of plants or "medicine" from the pharmacy for the treatment of pain? 2. What is your opinion about the use of homemade preparations with plants for the treatment of pain? 3. What is your opinion about the use of "pharmacy drugs" (medicines) for the treatment of pain? 4. Have you taken "medicine from the pharmacy" and weed medicine together at the same time (in association) for the treatment of pain? What do you think about using the two together? 5. Have you replaced the medicine the doctor prescribed for the use of plants? If so, tell me how it was. If not, why?

The socio-demographic analysis was developed using the simple frequency statistical method. The contents of the interviews were examined through the Collective Subject Discourse (CSD) (Lefevre and Lefevre, 2005), with the help of qualiquantisoft.

RESULTS AND DISCUSSION

Did you replace doctor prescription with plants?

Of the 52 interviewees there were 35 women (67%) and 17 men (33%) who were between 21 and 90 years old, most of them between 30 and 45 years old and married (61.5%). Considering the education level, 33 reported not having completed elementary education, which is

*Corresponding author. E-mail: martareginakerntopfm@outlook.com.

Figure 1. Geographical location of Sítio Arruda, Araripe – CE. Source: Google Maps, 2017.

equivalent to 62.5%. The number of non-school children was also highlighted, secondly represented by 13 of the interviewees (26%). Farmer was the predominant profession (57.5%), followed by housewives (25%) and the time of residence in the community ranged from 10 to 40 years. Other details of the socio-demographic profile of the population can be observed in Table 1.

When questioned about the main method of choice for pain treatment, 55.77% of the informants reported a preference for plants, 11.54% stated the use of allopathic drugs, 25% reported that the option depend on the isease and 7.69% said they had no preference. These results on plant choice are similar to those found by other researchers. In a community in the State of Pará, 18 residents were interviewed. Of these informants, 16 (73%) referred and preferred what they call home remedies and 2 (9%) opt for drugs are available at health centers, as evaluated (Flor and Barbosa, 2015). When asked what they think about homemade plant preparations for pain management (Question 2 of the interview), the CSD pointed out five central ideas, which can be seen in Table 2.

It is noted that, thinking about the sense of effectiveness was the most prevalent. This point of view was also defended by quilombola residents, from a community located in Paraíba. Of the 24 interviewees, 60.9% stated that plants have better action than laboratory drugs, and access to them is easier and cheaper (Sales et al., 2009). Giraldi and Hanazaki (2010) emphasize that preference for such resources strengthens the traditional culture of health care and broadens contact with local biodiversity. Also, the use of these resources as a source of treatment is a safer method for many people, since they believe in the healing potential that plants offer besides have fewer adverse effects than industrialized drugs (Oliveira and Santos, 2016; Pedrollo et al., 2016). The data in Table 3 represent the central ideas and CSD on the opinion of population regarding drugs of, allopathic origin.

There is a varied perception of the interviewees when it comes to industrialized drugs. Although the use of drugs present, the justification that the “teas” are better has stood out. However, another point draws attention: the choice between drug and plant depends on the pain. Conversely, the literature shows a shortage of papers that portray the determinants which lead people to choose between medicines and plants and at what point this decision happens. However, some scholars point out possible explanations about the representations of populations, especially the older ones, in view of the allopathic drugs. Many of them believe that the industrialization process makes these compounds more capable of causing adverse reactions, or other damages. This bias reinforces the conception that plants are better, since they are obtained from nature without any intervention that may make it lose its naturalness to promote healing (Lima et al., 2012).

Considering this aspect, in a relevant study Nascimento

Table 1. Distribution of respondents according to age group and socio-demographic variables.

Variables	Age											
	21 to 29		30 to 45		46 to 59		60 to 75		76 to 90		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
Gender												
Female	10	19	13	25	7	13.5	4	7.5	1	2	35	67
Male	3	5.7	11	21	2	4	1	2	-	-	17	33
Marital status												
Married	9	17	17	32	3	5.7	3	5.7	-	-	32	61.5
Single	4	7.5	4	7.5	2	4	1	2	-	-	11	21
Divorced	-	-	1	2	1	2	-	-	-	-	2	4
Widow	-	-	2	4	3	5.5	1	2	1	2	7	13.5
Education level												
Non- schoolchildren	-	-	5	10	5	10	3	6	-	-	13	26
incomplete Elementary school	9	17	17	32	4	7,5	2	4	1	2	33	62.5
complete Elementary school	-	-	2	4	-	-	-	-	-	-	2	4
Incomplete High School	4	7.5	-	-	-	-	-	-	-	-	4	7.5
Complete high school	-	-	-	-	-	-	-	-	-	-	-	-
Profession												
Farmer	4	7,5	19	36.5	4	7.5	3	6	-	-	30	57.5
Retired	-	-	-	-	1	2	2	4	1	2	4	8
Housewife	5	10	4	7.5	4	7.5	-	-	-	-	13	25
Student	4	7,5	-	-	-	-	-	-	-	-	4	7.5
Daycare Center Assistant	-	-	1	2	-	-	-	-	-	-	1	2
Residence time in the community												
>= 10 < 20 years	3	6	3	6	1	2	2	4	-	-	9	18
>= 20 < 30 years	10	19	3	6	-	-	1	2	-	-	14	27
>= 30 < 40 years	-	-	18	34.6	8	15.4	2	4	1	1	29	55

Source: research data, 2017.

et al. (2016) when comparing the use of plants with the use of animals and applying free lists to the rural community in the semiarid region of northeastern Brazil, the plants were preferred, especially because of the easy access in comparison with the species of the fauna. Regarding the talk about the use of the plant and drug association, according to question 4 of the interview, participants' answers allowed the identification of the central ideas and respective CSD that are presented in Table 4.

According to the above, the joint use of plants and medicines for 46 informants is something that corresponds to the danger, clearly defended by the thought of poisoning. The same logic was

Table 2. Relationship between central ideas of question 2, the proportion of responses according to the participants of the research and CSD for question 2.

Question 1: "What is your opinion about using homemade plant preparations for the treatment of pain?"			
Central ideas		**Community Informants**	
		n	**%**
A	It is good because it's effective.	32	61.54
B	It's good, but it depends on the type of pain	11	21.15
C	I do not use it because it is not effective	2	3.84
D	It's good, but I do not currently use it	7	13.46
E	I do not know because I've never used it.	1	1.92
Total of informants: 52*			
Collective Subject Discourse			
CSD - Central Idea A: I like it very much, I drink the tea first, I prefer it, it's good because it passes the pain, it relieves a lot, it's gone, it's not better, it always worked, I mean, most of the time it happens. The tea solves the pain everything, some pain passes alone; some pain only the tea solves it. I lived my whole life with medicine from the plant, since I was a child, my mother always did it for me, we did not have the ease of today, me and my brothers, everything, when I got sick, was a medicine from the woods, I did not have this hospital business, it was prayer, faith, and tea, and I also treated my son with medicine from the plant! My daughter was saved by faith and mother's medicine. The boy here is all grown up with tea. Everyone uses medicine from the plant and I help a lot of people with medicine from the plant, we did not live without plants because it is better the medicine that we do at home.			
CSD - Central Idea B: The plant is good, but it depends on the type of pain. I always take the tea first, if it does not calm, I take the drug. My pain is very strong, I do not like to take pills, but I take it when I cannot hold it anymore. There are also the boys who have to take them to the hospital, if they do not [tea] it is a more serious disease, then they have to go to the hospital. If it's more urgent, it's a better hospital. When I feel like going to the doctor, I'll go there. God helps me, and I know, I say: you know, this here is not for me to make medicine here! Both the treatment with the plants and the medicines are good because many things I prefer the hospital, but others I prefer the weeds, it depends on the disease.			
CSD – Central Idea C: Same as water, my daughters do for me, but it does not help. The one who trusts me is my mother, but I do not take.			
CSD – Central Idea D: It's very good, it works, but I do not use it anymore. Here, we took more as a child, then we grew and became harder for the pain and nowadays it is better to take the same pill and have the hospital. Here at home, we do not have, because the woman has pain in the knee and it is bad to get pregnant, and there is still this drought, you can not only carry water for a few drinks, it's hard to do it: you have to plant, and then I prefer the medicine.			
CSD – Central Idea E: They say it's good, but I never took it.			
* A subject's speech may have more of a central idea.			

Source: Research data (2017).

found in other surveys. Residents of a city in Ceará were also approached about the concomitant use of chemical drugs and plants. Of the 151 informants, 87.1% do not use associated, because they believe that there may be some damage to the organism (Oliveira and Lucena, 2015).

A similar attitude was also found in the center-west region of Rio de Janeiro. Of 998 inhabitants interviewed, 44.1% said, they did not use drugs and plant together. However, this data was not the most relevant. For 47.5% of the participants, the associated use of drugs and plants is performed when the indication of a certain plant is known.

However, they do not explain how this knowledge is determined or if there is any kind of orientation by health professionals (Veiga-Junior, 2008). The next data correspond to the aspects found, when informants were questioned about the plant's replacement of some medicine prescribed by the doctor. Not substituting medicine for the use of plants was the main affirmation given by the participants. The justifications for such conduct were diverse. However, it can be seen that majority could not explain the reasons why they do not stop following the prescription, which becomes a gap that can be worked out in future studies.

However, another study has shown that, the substitution of prescribed drugs by plants is a common act among people especially, those residing in rural areas ranging from 50 to 69 years old. The preponderant factor is in the traditional culture of health care, learned during life (Junior, 2008). The second most prevalent idea is related to the fact that, several participants have never

Table 3. Relationship between central ideas of question 3, the proportion of responses according to the participants of the research and CSD for question 3.

Question 3: What is your opinion about the use of “pharmacy drugs” (medicines) for the treatment of pain?			
Central ideas		**Community informants**	
		n	**%**
A	I do not like it because I think it's dangerous	3	5.77
B	I have no opinion about this because I have never used it for pain treatment	6	11.54
C	It is effective, but tea is better	20	38.46
D	I usually do not use it because access is difficult	4	7.69
E	I've used it, but it depends on the type of pain	15	28.85
F	I prefer the use of the medicine	6	11.54
G	I do not consider it effective	7	13.47
Total of informants 52*			
Collective Subject Discourse			
CSD - Central Idea A: It can poison, I do not use it because I'm afraid. Have you thought? Take medicine forever because of pain? That is bad!			
CSD - Central Idea B: I never took it for pain, it should be good, but I never took it. There are a lot of people who take and give, I do not know because I do not take that kind of medicine for pain, I do not like going to the doctor or hospital.”			
CSD - Central Idea C: I've had it, it's good, but I do not change my tea, I drink tea first. I see the people going to the health centers, to the hospital, I'm not going. I think it is a waste of time because I have everything here, I do not spend with pharmacy medicine, but people get good medicine from the pharmacy as well. And it's good too because the pain passes. Only that in the fight of every day it is my plant, we go to the medicine of pharmacy only when it needs, because we prefer the plant. I only take medicine from the pharmacy because I have many diseases and when there is no way, but the plants are my favorite.			
CSD - Central Idea D: I never take these medicines because it is difficult, there is a drug that is expensive, we do not always have one, and the pharmacy is in Araripe. Also, you cannot go without asking, we pay R$ 70,00 to go to the city, so we do not use it too much.			
CSD - Central Idea E: Both the plant and the pharmacy is good. I also take a drug from a pharmacy, but it depends on the type of pain, because there is a disease that only the plant medicine does not work, for my pain in the knee, what happens is the medicine. Taking medicine for woman's pain [menstrual cramps] is lost, are we taking it every month? Also in children, when the plant medicine has no effect [for pain] we take it to the hospital, it solves it.			
CSD - Central Idea F: I prefer it, since I'm not very sick, just leave some medicine stored for when the pain increases, I just need to take one when it hurts my head and my body. Also, the tablet is faster, you took it, it passed, I think better so it gives more effect. I can no longer live without a pharmacy.			
CSD - Central Idea G: Before I took it and resolved, today I take, there is a day that passes, there is a day that does not pass. Also, I do not know, after my wife has been taking these remedies her wounds are few. And there are few that it renders, it has a remedy that is like water.			
*A subject's speech may have more of a central idea.			

Source: Research data, 2017.

used drugs.

Although the rise of allopathic medicines has been constant in the present times since access is not always possible, especially when considering the financial factor for acquisition. However, not using allopathic is also a decision of many people. The explanation is given by cultural interfaces, beliefs, and highly valued empirical knowledge (Sales et al., 2009).

Conclusion

The practice of using plants for the treatment of pain among the population of Sítio Arruda is seen as a important aspect in the context of their day to day lives, due to the traditional nature of the knowledge spread among them. This knowledge deserves to be respected, especially when analyzing the historical context that built the community. Even though traditional empirical knowledge is common among the participants, a variety of how this knowledge is assimilated and used in the management of the pain relief and/or treatment conducts is evident.

There was also shortage of studies on the representations and meanings of the preference of inhabitants for traditional localities, considering medicinal

Table 4. Relationship between central ideas of question 4, the proportion of responses according to the participants of the research and CSD for question 4.

Question 4: Have you taken “medicine from the pharmacy” and plant medicine together at the same time (in association), for the treatment of pain? What do you think about using the two together?

Central ideas		Community Informants	
		n	%
A	No, because it can cause poisoning	46	88.46
B	No, but they say it can cause poisoning	4	7.69
C	No, because I take a lot of medicine from a pharmacy	1	1.92
D	No, but I do not think it poisons	1	1.92
E	No, because I never use either	1	1.92

Total of informants 52*

Collective Subject Discourse

CSD - Central Idea A: No!” “God!” You cannot take both because you can poison. Everyone here knows that you cannot take the two together: the plant and the drug; it is to risk too much! I've never seen anyone poison, but you'd better not risk it. My mother, my mother-in-law, the elders, everyone says they poison. You cannot take it together, the medicine in the forest is strong, very green, and the pharmacy is strong, there you must go to the hospital. We keep the plant medicine when we're taking it from the pharmacy. When I was using the medicine that the doctor gave me, I did not have tea. For example, the day I take ibuprofen, I do not drink the tea. Because here it is, you have tea today, and if it does not solve, the other day you take the pharmacy. One has to take one or the other. Take the two together, do this and you get worse!

CSD - Central Idea B: No, I never took it together, they say it poisons, I do not know, the people who say, I've heard many of the old people saying that it poisons if you take both.

CSD - Central Idea C: I have the fear of drinking tea because I already take so much pharmacy medicine!

CSD - Central Idea D: I never took it, but I do not believe in this business that poisons.

CSD - Central Idea E: “I took none, who will say the two together.”

*A subject's speech may have more of a central idea.

Source: Research data, 2017.

Table 5. Relationship between central ideas of question 5, the proportion of responses according to the participants of the research and CSD for question 5.

Question 5: Have you replaced the medicine that the doctor prescribed for the use of plants? If so, tell me how it was. If not, why?

Central ideas		Community informants	
		n	%
A	No, because I never took a drug from a pharmacy.	9	17.30
B	No, because if it is not effective, I return to the doctor	1	1.92
C	No, because it's the last resource I'm looking for	6	11.54
D	No, but I cannot explain the reason well.	27	51.92
E	No, because I trust the doctor.	2	3.84
F	No, because my treatment is serious.	1	1.92
G	Yes, because it was not being effective.	5	9.62
H	Yes, because I did not find it safe.	1	1.92
I	Yes, because he did not have the prescribed medicine available	1	1.92

Total of informants 52*

Collective subject discourse

CSD - Central Idea A: No, I never took medicine from the doctor, I never went to the doctor, so I never had to change, because I do not take medicine from the pharmacy, those that the doctor gives. I do not even know what pharmacy medicine is, how would I change it?

CSD - Central Idea B: No, if the medicine did not work, I'll find a way back to the hospital.

CSD - Central Idea C: I never did this, or I took tea or took medicine, but I never changed it, because I only use it if tea does not solve it, when the pain does not go with tea, when it is very strong, then I look for the medicine in the pharmacy. Sometimes I go to the doctor, if I go, I will not change.

Table 5. Cont'd.

CSD - Central Idea D: No, but I'm not sure, I never take medicine from the pharmacy so I cannot change.
CSD - Central Idea E: I do not live without the medicine of the pharmacy, I am sick, from when I was born.
CSD - Central Idea F: Because the medicine from the pharmacy did not work, with faith in God I became good with medicine from the plants. I already had a paracetamol once and it did not work on the day, I took the tea and solved it. I changed it from my son too, the doctor said he had the flu and passed a medicine to him, I did not give it, because the flu you only give a tea of garlic that solves and my girl when she was sick, it was the same way taking the medicine of the pharmacy, I went and did it at home, and she was good. I changed it and she got better.
CSD - Central Idea G: No, because if the doctor passed it, it is better to hear, right? I take what the doctor does very well.
CSD - Central Idea H: Yes, just a remedy for my girl, because it was very strong.
CSD - Central Idea I: I took paracetamol and it was over, I had taken the last one the other day, I made the same tea.
*A subject's speech may have more of a central idea.

Source: Research data, 2017.

plants and industrialized drugs specific for pain, as well as for the treatment of diseases in general. Finally, the understanding of singular and collective knowledge enables an important tool for directing care to these people, considering the role of health professionals. It is also shown as a way of preserving and respecting each one's thinking and acting. Thus, it is expected that this work will arouse the interest of researchers in studying more about popular knowledge and health management.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

REFERENCES

Albuquerque UP, Lucena RFP, Cunha LVFC (2010). Métodos e Técnicas na pesquisa Etnobiológica e Etnoecológica. Recife: NUPEEA. 559p.

Badke MR, BMLD, Alvim NAT, Zanetti GD, Heisler EV (2012). Saberes e práticas populares de cuidado em saúde com o uso de plantas medicinais. Text. Context. Enferm. 21(2):363-370.

Bavaresco OSA, Pereira ICP, Melo CD, Lobato F, Falcai A, Bomfim MRQ (2016). Utilização popular da Pterodon spp no tratamento de doenças reumáticas. Rev. Investig. Bioméd. 8:81-91.

Brazil Ministério da Saúde (BMS) (2012). Conselho Nacional de Saúde. Resolução 466/12. 12 de dezembro de. Estabelece critérios sobre pesquisa envolvendo seres humanos.

Cartaxo SL, Souza MMA, Albuquerque UP (2010). Medicinal plants with bioprospecting potential used in semi-arid northeastern Brazil. J. Ethnopharmacol. 131:326-342.

Fundação Cultural Dos Palmares (FCP) (2009). Mais 36 comunidades quilombolas são certificadas no país. Disponível em. Available at: http://www.palmares.gov.br/archives/3500

Flor ASSO, Barbosa WLR (2015). Sabedoria popular no uso de plantas medicinais pelos moradores do bairro do sossego no distrito de Marudá – PA. Rev. Bras. Plantas Med. 17(4):757-768.

Giraldi M, Hanazaki N (2010). Uso e conhecimento tradicional de plantas medicinais no Sertão do Ribeirão, Florianópolis, SC, Brasil. Acta Bot. Bras. 24(2):395-406.

Haeffner R, Heck RM, Ceolin T, Jardim VMR, Barbieri RL (2012). Plantas medicinais utilizadas para o alívio da dor pelos agricultores ecológicos do Sul do Brasil. Rev. Eletrôn. Enferm. 14(3):596-602.

Holtz VV, Neto JS (2008). Epidemiologia da dor em pacientes de Curitiba e região metropolitana. Rev. Dor. 9(2):1217-1224.

Instituto Nacional de Colonização e Reforma Agrária (INCRA) (2015). Comunidade quilombola recebe posse de terras no Ceará. Disponível em. Available at: http://www.incra.gov.br/noticias/comunidade-quilombola-recebe-posse-de-terras-no-ceara

Lefevre F, Lefevre AMC (2005). O discurso do sujeito coletivo: um novo enfoque em pesquisa qualitativa (desdobramentos). Caxias do Sul: EDUSC. 256p.

Lima SCS, Arruda GO, Renovato RD, Alvarenga MRM (2012). Representações e usos de plantas medicinais por homens idosos. Rev. Latinoam. Enferm. (Online). 20(4):8.

Medeiros PM, Ladio AH, Santos AM, Albuquerque UP (2013). Does the selection of medicinal plants by Brazilian local populations suffer taxonomic influence? J. Ethnopharmacol. 146(3):842-852.

Nascimento AL, Lozano A, Melo JG, Alves RR, Albuquerque UP (2016). Functional aspects of the use of plants and animals in local medical systems and their implications for resilience. J. Ethnopharmacol. 194:348-357.

Nascimento LA, Kreling MCGD (2011). Avaliação da dor como quinto sinal vital: opinião de profissionais de enfermagem. Acta Paul. Enferm. 24(1):50-54.

Oliveira DMS, Lucena EMP (2015). O uso de plantas medicinais por moradores de Quixadá–Ceará. Rev. Bras. Plantas Med. 17(3):407-412.

Oliveira LPBA, Santos SMA (2016). Conciliando diversas formas de tratamento à saúde: um estudo com idosos na atenção primária. Text. Contexto Enferm. 25(3):1-9.

Pedrollo CT, Kinupp VF, Shepard G, Heinrich M (2016). Medicinal plants at Rio Jauaperi, Brazilian Amazon: Ethnobotanical survey and environmental conservation. J. Ethnopharmacol. 186:111-124.

Portela AS, Leal AAF, Werner RPB, Simões MOS, Medeiros ACD (2010). Políticas públicas de medicamentos: trajetória e desafios. Rev. Ciênc. Farm. Básica Appl. 31(1):9-14.

Ribeiro DA, Macêdo DG, Oliveira LGS, Saraiva ME, Oliveira SF, Souza MMA, Menezes IRA (2014). Potencial terapêutico e uso de plantas medicinais em uma área de Caatinga no estado do Ceará, nordeste do Brasil. Rev. Bras. Plantas Med. 16(4):912-930.

Sales GPS, Albuquerque HN, Cavalcanti MLF (2009). Estudo do uso de plantas medicinais pela comunidade quilombola Senhor do Bonfim – Areia-PB. Rev. Biol. Ciênc. Terra 1:31-36.

Sousa GM, Fernandes GP (2016). Caracterização geoambiental da comunidade quilombola Sítio Arruda em Araripe- CE. Cadegeo. 7(1):45-55.

Veiga-Junior VF (2008). Study of the consumption of medicinal plants in the Center-North Region of the State of Rio de Janeiro: acceptance by health professionals and use by the population. Rev. Bras. Farmacogn. 18(2):308-313.