Usage of Medicinal Plants and Phytotherapy Medicines by Elderly People who live with chronic noncommunicable Diseases

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Abstract— This study had as goal to assess the use of medicinal plants and phytotherapy medicines by elderly people with chronic noncommunicable diseases. It is a descriptive study of quantitative approach, a section of the main extension project called "Education and interdisciplinary health practices for elderly people with chronic noncommunicable diseases approved by the Research Ethics Committee (CEP) with opinion nº 2,960,922.The study comprised 40 elderly women with chronic noncommunicable diseases, enrolled in the elderly interaction group in a Higher Education Institution in the interior of Bahia. For data collection, there were used as instruments the sociodemographic and economic questionnaires and the questionnaire of medicinal plants and phytotherapy. Data analysis was carried out by using the program Statistical Package for Social Science - SPSS). It was noticed that 97.3% of the study's participants said that they used medicinal plants and 81.11% phytotherapy medicines. In terms of the purpose of use, 49.2% said they use it as a lifelong habit acquired and 37.8% stated they used it for therapeutic purposes. It was evidenced that 56.8% of participants reported that they knew that by using these substances they could have some drug interaction and 59.5% said they knew that the use can lead to side effects. For 51.36% family influence was the primary motivation for the use. It was verified that the majority of elderly people stated they use medicinal plants and phytotherapy medicines because it represent the lifelong habit acquired, especially by the family environment what is required is the implementation of professional training actions, health education and the appreciation of traditional knowledge for a better understanding on the correct use of medicinal plants.

Keywords— Elderly People, Chronic Diseases, Medicinal Plants, Phytotherapy.

I. INTRODUCTION

The demographic transition happening in Brazil is motivated mainly by the reduction of birth and mortality rates indicated by the last census and observed in the age pyramid inversion. With this shift, the population aging is the most noticed characteristic [1].

Aging is a gradual process, it is an outcome of internal and external alterations like biochemical, morphological, functional, behavioral, cognitive and social modifications [2]. Therefore, among these modifications, a challenge for public health in Brazil has been the high predominance of Chronic Noncommunicable Diseases (CNCDs) that particularly affect elderly people. This shift in the epidemiological profile happened from the replacement of parasitic infectious diseases to a gradual increase of diseases with a chronic and degenerative character [3], [4].

CNCDs may result in disabilities by interfering with the autonomy and mobility of the elderly person, which reflects on their lifestyle habits and welfare [5]. The number of fatalities from chronic diseases has grown globally, with 41 million people each year representing 72% of all deaths around the world. These are long-term diseases and there are little resources for their control and

treatment (WHO, 2018), and the subjects with CNCDs are the ones that most use the health service because of routine appointments, complications or health issues [6].

In this scenario, the Brazilian Public Health System (SUS) thinking about the integrity of individual assistance, inserted the National Policy on Integrative and Complementary Practices(PNPIC) with therapeutic resources that stimulates natural mechanisms of prevention and health issues, conducting a supportive listening and therapeutic bond [7]. The PNPIC endorsement considered other guidelines and establishment of alternative treatments, such as traditional Chinese medicine / acupuncture, homeopathy, social thermalism / crenotherapy, anthroposophic medicine, medicinal plants and phytotherapy in SUS [8], [9].

Among the Integrative and Supplemental Practices, medicinal plants and phytotherapy are widely used by the Brazilian population as a therapeutic resource [10]. Taken as a millenary practice, the use of medicinal plants happens due to the knowledge exchange through oral language and daily life habits that are passed on from one generation to another. Nevertheless, it has been used by a major part of elderly people, in an indiscriminate and random manner, without any previous knowledge regarding its pharmacological properties and the toxicity potential [11].

To address this situation, this study had as goal to assess the use of medicinal plants and phytotherapy medicines by elderly people with chronic noncommunicable diseases.

II. METHODOLOGY

It is a descriptive study of quantitative approach, a section of the main extension project called "Education and interdisciplinary health practices for elderly people with chronic noncommunicable diseases." The study was carried out from October 2018 to June 2019 with an interaction group of elderly people in a Higher Education Institution, situated in the urban area of Vitória da Conquista - BA.

The study comprised 40 elderly women with CNCDs, after following the inclusion criteria: subjects that were 60 years old and older, of both sexes, with a diagnosis of CNCDs, enrolled in the elderly interaction group. The exclusion criteria were: cognitive deficit with the impossibility of answering the study's questions (it was assessed by the Mini Mental State Examination - MMSE).

For data collection, there were used as instruments the sociodemographic and economic questionnaires, comprised by information concerning some social, demographic and economic aspects like age, gender, color, marital status, schooling degree, profession,

monthly individual and family income, religion, who they live with and how many children they have. Also he questionnaire of medicinal plants and phytotherapy with objective and subjective questions regarding the use of medicinal plants and phytotherapy medicines, the frequency, intention, species used and form of use, influence of other people and knowledge about the substances used.

The collection instruments were employed by the researchers in a reserved room, through the computational tool *Kobotoolbox*, a *software* with a set of tools for data collection which runs with and without internet support [12].

The analysis of quantitative data happened using the program *Statistical Package for Social Science* - SPSS (version 22.0, Chicago, IL, USA). The variables were displayed through frequencies and percentages and as mean and standard deviation (M±SD). The significance level of (0.05) and confidence intervals (CI) of (95%) was assumed.

All ethical and legal features of Resolutions 466/12 and 510/16 [8], [13] were thoroughly followed and after the approval by the Research Ethics Committee (CEP) of the Northeast Independent College / FAINOR with opinion nº 2,960,922. It was explained to all elderly participants the study's goals. The ones that accepted to participate signed the two copies of an Free and Informed Consent Form (ICF), one copy was given to the research participant and the other was kept by the researcher responsible for the study.

III. RESULTS

Table 1 displays the participant's sociodemographic profile. According to the sociodemographic outcomes it was possible to determine that 40 (100%) were women, 13 (32.5%) were between 71 and 75 years old, 16 (40%) were white, 22 (55%) were widows, 16 (40%) finished elementary school I, 31 (77.5%) Catholic, 21 (52.5%) have individual income between one and two minimum wages, and the family income predominates21 (52.5%) between 1 and 2 minimum wages, 17 (42.5%) lived alone, and 38 (95%) have children, 10 (25%) stated they had 3 children.

Table 1. Sociodemographic Profile. Vitória da Conquista, Bahia, Brazil, 2019.

Variables	N	%
Sex		
Male	0	0
Female	37	100
Agegroup		
60 to 65 years	8	21,62
66 to 70 years	7	18,92
71 to 75 years	12	32,43
76 to 80 years	8	21,62
Over 80 years	2	5,40
Color		
White	15	40,54
"Parda" (Brownish)	12	32,43
Black	10	27,02
Marital Status		
Married	8	21,62
Single	5	13,51
Widow(er)	21	56,77
Separated	3	8,11
Schoolingdegree		
Elementary School I (1º to 5thgrades)	15	40,54
Elementary School II (6º to 9º grades)	5	13,51
High School	12	32,43
HigherEducation	3	8,11
Withoutschooling	2	5,40
Religion		
Catholic	29	78,38
Evangelical	7	18,92
None	1	2,70
Individual monthly income		
Lessthan 1 minimumwage	10	27,02
Between 1 e 2 minimumwages	20	54,05
Between 3 e 5 minimumwages	6	16,22
More than 5 minimumwages	1	2,70
Family monthly income		
Lessthan 1 minimumwage	4	10,81
Between 1 and 2 minimumwages	20	54,05
Between 3 e 5 minimumwages	11	29,73
Morethan 5 minimumwages	2	5,40
Who they live with		
Withchildren	8	21,62
Withotherrelatives	6	16,22
Withthespouse	6	16,22
With the spouse, children e grandchildren	1	2,70
Alone	16	43,24
Children		
No	2	5,40
Yes	35	94,59
Numberofchildren		
1	4	10,81
2	6	16,22
3	9	24,32
4	8	21,62
5	4	10,81
More than 5	6	16,22
Total	37	100,00

Source: Research data

Table 2 displays data linked to the use of phytotherapy medicines and medicinal plants described by the elderly subjects of the study. It was noticed that 97.3% of the participants said that they used medicinal plants and 81.11% phytotherapy medicines, with a monthly and weekly frequency of 27%. In terms of the purpose of use, 49.2% saidthey use it as a lifelong habit acquired and 37.8% stated they used to treat a disease. As for the forms they use, 62,16% used it as teas.

Table 2. Use of phytotherapy medication and medicinal plants by elderly people. Vitória da Conquista, Bahia, Brazil, 2019.

Variables	N	%
Medicinal plant use		
No	1	2,70
Yes	36	97,30
Phytotherapy use		
No	7	18,92
Yes	30	81,09
Frequency of use		
Anually	9	24,32
Monthly	10	27,03
Weekly	10	27,03
Daily	6	16,22
Didnotanswer	2	5,40
Use purpose		
Habit	16	43,24
Totreat a disease	14	37,84
Habit/Disease	5	13,51
Didnotanswer	2	5,40
Formsof use		

Teas	23	62,16
Bottled	3	8,11
Infusion	4	10,81
Juices	3	8,11
Maceration	1	2,70
Anotherform	1	2,70
Didnotanswer	2	5,40
Total	**37**	**100,00**

Source: Research data

The outcomes linked to the knowledge and influences received concerning the use of phytotherapy medicines and medicinal plants by elderly subjects of the study were displayed in Table 3. It was evidenced that 56.8% of participants reported that they knew that by using these substances they could have some drug interaction, 59.5% said they knew that the use can lead to side effects, 51.36% were influenced by family members to use these substances.

Table 3. Knowledge and influences received regarding the use of phytotherapy medicines and medicinal plants by elderly people. Vitória da Conquista, Bahia, Brazil, 2019.

Variables	N	%
Knowledgeondruginteraction		
Yes	21	56,76
No	13	35,14
I don'tknow	2	5,40
Didnotanswer	1	2,70
ReactionsKnowledge		
Yes	22	59,46
No	13	35,14
I don'tknow	1	2,70
Didnotanwer	1	2,70
Influence to use it		
Relatives	19	51,35
Friends	3	8,11
Doctor	3	8,11
Others	8	21,62
Media	1	2,70
Didnotanswer	3	8,11
Total	**37**	**100,00**

Source: Research data

Table 4 exhibits the main species of medicinal plants used by elderly people in the research. Among the elderly participants, 9.61% stated that they use lemon grass, lemon balm and fennel, 6.76% used umburana, but 15.6% other types of species.

Table 4. Main species used by elderly people. Vitória da Conquista, Bahia, Brazil, 2019.

Variables	N	%
Espécies que costuma usar		
Rosemary	10	3,56
Boldo	13	4,62
Chamomile	22	7,83
Cinnamon	18	6,41
Lemon Grass	27	9,61
Lemon Balm	27	9,61
Fennel	27	9,61
Spearmint	17	6,01
Peppermint	14	4,98
Mastruz	10	3,58
Nutmeg	21	7,47
Pomegranate	1	4,27
Umburana	19	6,76
Others	12	15.66
Total	**281**	**100,00**

Source: Research data

IV.   DISCUSSION

In Brazil there is a wide biodiversity of medicinal plants and their use has been seen in the entire humanity since ancient times. This knowledge has turned into a tradition and has been transmitted among generations [14]. With the elderly population being the one that use it the most [11], especially in a prophylactic and healing way, in the treatment of CNCDs or low-risk clinical diseases [15], [16]. In the scientific literature, various studies have demonstrated successful outcomes concerning the use of medicinal plants in the treatment of some illnesses, and for that it was a practice included in SUS for health promotion [7], [9], [11].

In this study, it was observed that the majority of respondents make regular use of medicinal plants. In accordance with Oliveira et al (2018) [17], the use of these plants ought to be in a rational and safe way, with the precautions starting with planting, storage and correct use. Because of the easy access, the precautions are frequently not noticed and the use is made without any scientific knowledge regarding cultivation, preparation, indication, side effects, toxicity and interaction with other plants and drugs used by the subjects. This way, self-medication and unfamiliarity on indications and toxic effects may lead to a practice that is harmful for the health.

A study carried by Viana and Ramos (2019) [19] has demonstrated that the majority of the elderly used some natural medicine before searching fora doctor, teas were the most used, mainly because of their specific medicinal value. Similar outcomes were achieved by

Dantas et al (2018) [20], who noticed that the most used form (55%) was the teas with the plants leaves, with them being accounted for storing a greater active principle concentration of the plants, increasing the risk of side effects if not used in an ideal quantity. The majority of the elderly people said they had knowledge about drug interaction when using medicinal plants. However, this understanding happens through common sense and not by scientific knowledge. This does not mean that traditional/popular knowledge regarding the health-disease process and the use of medicinal plants should not be appreciated, but it requires orientation or supervision, mainly from healthcare professionals for the proper use. That is to say, there should be an interaction "between user groups, the traditional knowledge, scientists, technicians, healthcare workers and representatives of the medicinal and phytotherapy plant production chain" as stated by the PNPIC [21].

An important factor indicated is that many people replace their medicines for medicinal plants, that being either due to not attending to medical appointments, absence of prescription, low financial income or easy access to the plants, once they are generally cultivated in gardens of the patient's own home [22], [23]. This situation displays a risk to the patient's health, because several medicinal plants do not have scientific studies that evidence their effectiveness [23]. Some health issues, like hepatotoxicity, injury to the central nervous system, allergic dermatitis, abortion, nausea and vomits, risk of developing tumors, may be noted with the incorrect use of medicinal plants [23].

Other participants stated that they did not know the indications and side effects of the plants that they use being guided by the belief that natural products are incapable of causing health issues, side effects or interaction with other drugs. Reports like this were discovered in other papers, where the elderly people did not know the potential side effects of the medicinal plantsusage [24], [25].

Data reached by Santana and Neto (2017) [26] suggested that knowledge about the use of medicinal plants is the outcome of intercultural relations. Similar data were reached by Avila et al. (2019) [27], whose study pointed out that the majority of participants gave a positive reply to the habit of using medicinal plants by assigning this practice to intergenerational relation, as established in this study.

Among the species commonly used by the respondents, other studies highlighted as well the lemon balm (Melissa officinalis), lemongrass (Cymbopogon citratus), chamomile (Matricaria chamomilla) being the most used [28, [29]. Fennel (Pempinelaanissum) is a vasodilator primarily used for the digestive system discomfort, hypertension, eye hypertension and inflammation. There are no known contraindications, drug interactions or even side effects. Lemongrass (Cymbopogon citratus) is normally used in for intestinal cramps and insomnia and it is not known any contraindications and side effects and it should not be used with sedative because of drug interaction [30]. A study performed by Lima et al. (2018) [31] exposed that 46% of the sample used medicinal plants and 28% of them reported simultaneous use for the treatment of CNCDs, including hypertension, diabetes mellitus and heart diseases.

It is noteworthy that medicinal plants may be broadly used by patients and suggested by health services and professionals. Nevertheless, it is required the training of the professionals to better orient the users. It was determined that even with the Ministry of Health stimulating the use of medicinal plants and phytotherapy medicines, the colleges' curriculum do not offer disciplines to an specific training for it [32]. Furthermore, because of the lack of knowledge or prejudice there is a significant distrust of some health professionals, administrators and users concerning the efficacy and safety of their use [33].

The Ministry of Health, based on integrative and supplementary practices [8] suggests that it is mandatory the establishment of continued education for health professionals in the form of training programs on the use of phytotherapy medicines and medicinal plants. For that, institutional support of states and municipalities are required with the formulation and establishments of policies, programs and projects in SUS, promoting actions, investing in research projects and other measures [8].

So just with the improvement of scientific studies, and with the integration of this topic in the training of health professionals tied to traditional knowledge, the true potential of this type of treatment and how to use it in a risk-free way and without any prejudice will be achieved.

V.   FINAL CONSIDERATIONS

This study enabled us to assess the use of medicinal plants and phytotherapy medicines by elderly people that have chronic noncommunicable diseases. It was verified that the majority of elderly people stated they use medicinal plants and phytotherapy medicines because it represent the lifelong habit acquired, being especially influenced by the family and by the knowledge about the risks of drug interaction and possible side effects as a result of the use.

In view of this, there is a necessity for health professionals to know about the use of medicinal plants

and phytotherapy medicines by elderly people who have CNCDs, primarily because of the need to orient these subjects regarding a reliable and balanced use of these plants preventing the side effects or even death by improper use.

Even with the establishment of National Policy on Integrative and Complementary Practices in SUS, it is required the assistance of states and cities in the implementation of professional training actions, health education and the appreciation of traditional knowledge for a better understanding on the correct use of medicinal plants, since it is an accessible and low cost form that may help. Used together with other treatment measures to enhance the patients' health.

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