Prevalence and associated factors with integrative and complementary practices use in Brazil

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A B S T R A C T

The aim of the current study was to investigate the prevalence of the use the integrative and complementary practices (ICP) and its associated factors in Brazil. Data was obtained from the cross-sectional National Health Survey 2013 (NHS), which had 145,580 adults aged 18 or over were interviewed. The outcome was the use of any ICP over the last 12 months and independent variables were macro-region, sex, age, educational attainment, skin color/race, and chronic disease. The results show that the prevalence of ICPs use in Brazil was 4.1%, while the most used types were medicinal plants and phytotherapy (2.5%), acupuncture (0.9%) and homeopathy (0.6%). The prevalence of ICPs use was higher in the North Region, among older people, women, participants with higher educational attainment, and with a higher number of chronic diseases. The findings from the current study provide valuable evidence that can inform future evidence-based public policies in Brazil.

1. Introduction

Since the beginning of the 2000s, the use of integrative and complementary practices (ICPs) has increased and more countries have stablished national programs and offices for complementary medicine [1]. The World Health Organization (WHO) estimates that more than 100 million Europeans and an even higher number of people in Africa, Asia, Australia, and the United States are current users of ICPs [2]. Peltzer and Pengpid [3] analyzed data from 32 countries and identified that approximately one out of four individuals used some type of ICP over the last 12 months and the prevalence of use was as high as 50% in countries such as China and South Korea.

Several studies have shown that the use of ICP is more common among women [3–8], individuals with a higher level of educational attainment [3,6,8], higher income, private health insurance and diagnosed with a chronic disease [9]. In Brazil, the national health system (i.e. the Unified Health System (SUS)) is public and has universal access, providing health coverage to 70% of the population [10]. The ICPs are officially among the health services provided and its offer is regulated by the National Policy on Integrative and Complementary Practices (PNPIC). The PNPIC provide guidelines for the implementation of services and practice of acupuncture, meditation, homeopathy, phytotherapy, medical herbalism, thermalism, among others, by health practitioners [11–13].

Previous studies that investigated the prevalence of the use of ICPs in Brazil reported values ranging from 34.6% to 87.6% [14–19]. However, the only studies available are regional studies [20], which evaluated the use of ICPs in specific populations, such as HIV-positive patients, mothers of children receiving medical treatment and teachers [14,15,18], or analysed the use of a single type of ICP, such as phytotherapy [21,22]. Moreover, ICPs use was measured with different recall periods [14,15,18]. When analysing the use of medicinal plants by the Brazilian population, the majority of research focused on the ethnobotanical field or descried the offer of the treatment in the public health services. In general, these studies had other aims than investigating the prevalence and associated factors. Additionally, as many were conducted in small regions, there are limitations to the extrapolation of the findings. Nonetheless, some ethnobotanical [23–25] and primary care studies [21,26–28] had representative samples of cities or regions in Brazil and provided estimates of prevalence of the use of medicinal plants. In almost all studies, the prevalence of use of medicinal plants was consistently high, ranging from 60% to 90%.

Table 1

Prevalence of use of integrative and complementary practices (ICPs) according to sociodemographic characteristics and health status. Brazil, 2013.

	n (%)	Prevalence of use of medicinal plants and phytotherapy (95% CI)	Prevalence of use of acupuncture (95% CI)	Prevalence of use of homeopathy (95% CI)	Prevalence of use of ICPs (95% CI)
Macroregion					
South	16,930 (11.6)	3.4 (2.7–4.3)	0.9 (0.7–1.2)	0.9 (0.7–1.2)	5.5 (4.7–6.4)
North	32,516 (22.4)	5.6 (4.5–7.0)	0.1 (0.0–0.2)	0.5 (0.4–0.6)	6.4 (5.2–7.7)
Northeast	44,831 (30.8)	3.2 (2.7–3.9)	0.2 (0.2–0.3)	0.2 (0.1–0.3)	3.8 (3.2–4.4)
Central-West	33,839 (23.2)	1.2 (0.8–1.6)	1.4 (1.2–1.6)	0.7 (0.5–0.8)	3.4 (3.0–4.0)
Southeast	17,464 (12.0)	2.6 (2.1–3.2)	0.6 (0.5–0.8)	0.8 (0.6–1.1)	4.3 (3.7–5.0)
Sex					
Male	68,820 (47.3)	2.1 (1.9–2.4)	0.5 (0.4–0.6)	0.4 (0.3–0.6)	3.2 (2.9–3.5)
Female	76,760 (52.7)	2.8 (2.5–3.1)	1.2 (1.0–1.3)	0.7 (0.6–0.8)	4.9 (4.6–5.3)
Age					
18–29	40,864 (28.1)	1.8 (1.5–2.1)	0.4 (0.3–0.5)	0.4 (0.3–0.5)	2.6 (2.3–3.0)
30–39	32,381 (22.2)	2.1 (1.8–2.5)	0.6 (0.5–0.8)	0.6 (0.4–0.8)	3.6 (3.2–4.0)
40–49	27,181 (18.7)	2.4 (2.1–2.8)	1.1 (0.9–1.4)	0.6 (0.4–0.7)	4.4 (3.9–4.8)
50–59	21,339 (14.7)	3.1 (2.6–3.6)	1.4 (1.2–1.8)	0.9 (0.6–1.1)	5.7 (5.1–6.3)
60 or more	23,815 (16.3)	3.4 (2.9–3.9)	1.2 (1.0–1.4)	0.6 (0.5–0.8)	5.4 (4.9–6.0)
Education					
Up to 4 years	22,014 (15.1)	3.7 (3.2–4.4)	0.2 (0.1–0.4)	0.2 (0.2–0.4)	4.3 (3.7–5.0)
5–8	48,063 (33.0)	2.9 (2.5–3.4)	0.4 (0.3–0.5)	0.3 (0.2–0.4)	3.8 (3.3–4.2)
9–11	49,075 (33.7)	1.7 (1.5–2.0)	0.8 (0.6–1.0)	0.4 (0.3–0.5)	3.1 (2.8–3.4)
12 or more	26,428 (18.2)	2.0 (1.7–2.3)	2.5 (2.1–2.9)	1.6 (1.4–2.0)	6.6 (6.0–7.2)
Skin color/Race					
Black	13,429 (9.4)	3.0 (2.3–3.9)	0.4 (0.3–0.7)	0.3 (0.1–0.5)	3.8 (3.1–4.7)
Brown	72,651 (50.7)	2.9 (2.5–3.4)	0.4 (0.3–0.5)	0.1 (0.0–0.3)	3.8 (3.4–4.3)
White	57,328 (39.9)	2.0 (1.8–2.2)	1.3 (1.2–1.5)	0.8 (0.7–1.0)	4.4 (4.1–4.8)
Chronic disease					
0	26,507 (53.8)	2.0 (1.6–2.2)	0.8 (0.6–1.0)	0.5 (0.4–0.7)	3.4 (3.1–3.8)
1	11,942 (24.2)	2.9 (2.4–3.5)	1.3 (1.0–1.8)	0.8 (0.6–1.0)	5.4 (4.7–6.2)
2 or more	10,853 (22.0)	3.9 (3.4–4.5)	2.1 (1.7–2.6)	1.1 (0.8–1.4)	7.5 (6.8–8.4)
Total	**145,580 (100.0)**	**2.5 (2.2–2.8)**	**0.9 (0.7–1.0)**	**0.6 (0.5–0.7)**	**4.1 (3.8–4.4)**

Note. Prevalence of use medicinal plants and phytotherapy, acupuncture, homeopathy or at least one type of ICP in the 12 months prior to the survey.

Evidence about the prevalence of ICPs use and its associated factors is necessary to inform the rational allocation of resources, the implementation of services, the continuing education of professionals and regulation of practices within the national health system [29]. However, to the best of our knowledge, there are no previous studies that evaluated the prevalence of ICPs use in Brazil in a nationally representative sample. Secondly, the fact that Brazil has a population of 200 million and it has a targeted national policy to regulate ICPs makes it unique among previously studied countries [3]. Therefore, understanding the prevalence of ICPs use in Brazil can provide insight into how national regulatory policies impact the use of ICPs by the general population. The aim of the current study was to investigate the prevalence of ICPs use in Brazil and its associated factors.

2. Materials and methods

Data were obtained from the National Health Survey 2013 (NHS), conducted by the Brazilian Institute of Geography and Statistics (IBGE) in a partnership with the Ministry of Health (MS). The NHS is conducted at regular intervals of five years and aims to characterize the health status and lifestyle of the Brazilian population [10,30].

The NHS 2013 interviewed residents of private households which were selected based on a three-stage stratified clustered sampling design. The three sampling stages were census tracts, households and residents aged over 18 years old [10]. In the first stage, stratification was performed according to the census tracts and simple random selection was conducted within strata with probabilities proportional to size. Simple random sampling was also repeated in the following two stages to ensure that participants aged over 18 years old living in a private household had an equal probability of being chosen [10,30].

A total of 69,954 households were selected, reporting data from 145,580 Brazilians. The response rate was 86.1%. Data was collected by trained interviewers with a Personal Digital Assistant (PDAs) [10]. The questionnaires were divided into three parts: the first two parts covered the sociodemographic and health characteristics of the participants. The third part focused on lifestyle information, morbidity, and biological measures such as weight, height, blood pressure, waist circumference, among others. Informed consent was obtained from all individual participants included in the study.

The primary analysis of the present study was the prevalence of use of at least one ICP in the 12 months prior to the survey. The information was obtained with the following question: "Over the past 12 months, did you use an integrative and complementary practice such as acupuncture, homeopathy, medicinal plants, and phytotherapy, among others, as a treatment?". In case of a positive answer, the next question asked was "What type of treatment did you use?". The possible answers were: "acupuncture", "homeopathy", "medicinal plants", and "other". As "other" the interviewee could report any integrative and complementary practice. Finally, the interviewee was asked whether the treatment was covered by private health insurance (yes/no) or by the Unified Health System (SUS) (yes/no).

The secondary analysis was to test the factors associated with the prevalence of ICPs use. The associated factors (i.e. predictors) included in our analysis were macroregion of residence (North, Northeast, Central-West, South and no), sex (female and male), age (18–29, 30–39, 40–49, 50–59 and 60 years of age or more), self-reported skin color/

race (white, black and brown), educational attainment (up to 4 years of schooling, 5–8 years, 9–11 years and 12 years or more) and presence of a chronic disease (absence, 1, 2 or more). The effects of the associated factors on the prevalence of ICPs use were analysed by logistic regressions. All analyses were conducted taking into account the sampling strategy (stratification and clustering) by using sampling weights, and crude and adjusted estimates were reported. The statistical significance of the model and model parameters was assessed with the Wald test. All statistical analyses were performed with Stata 14.0 software (Stata Corp., College Station, United States). The NHS was approved by the National Commission for Research Ethics (CONEP) (Protocol: 328.159/2013).

3. Results

A total of 145,580 adults were interviewed. Table 1 displays the baseline characteristics of the participants. Among the participants, the majority were women, had between 18 and 39 years old, had 5–11 years of study, reported brown skin color and had no chronic disease.

The prevalence of ICPs use in the Brazilian population was 4.1% (95% CI 3.8–4.4). The ICP with a higher prevalence of use was medicinal plants and phytotherapy (2.5%), followed by acupuncture (0.9%) and homeopathy (0.6%). In addition, the prevalence of ICPs use was higher in the Northern Region, among women, participants aged over 50, with 12 or more years of education and with 2 or more chronic diseases (Table 1). Among the participants who used ICPs over the last 12 months, 5.6% were covered by the SUS, 13.6% had their treatment paid by a private health insurer and 37.0% paid an amount from their own personal finances.

Table 2 displays the factors associated with the prevalence of ICPs

Table 2
Associated factors with integrative and complementary practices (ICPs) use. Brazil, 2013.

	Unadjusted* OR (95%CI)	Adjusted OR (95%CI)
Macroregion		
South	1.00	1.00
North	1.16 (0.90–1.51)	1.56 (1.19–2.05)
Northeast	0.68 (0.54–0.85)	0.69 (0.55–0.88)
Central-West	0.61 (0.49–0.76)	0.64 (0.51–0.79)
Southeast	0.77 (0.62–0.97)	0.79 (0.61–1.02)
Sex		
Male	1.00	1.00
Female	1.57 (1.46–1.69)	1.44 (1.25–1.65)
Age		
18–29	1.00	1.00
30–39	1.38 (1.20–1.59)	1.31 (1.01–1.69)
40–49	1.69 (1.46–1.94)	1.41 (1.08–1.83)
50–59	2.22 (1.93–2.56)	1.76 (1.33–2.32)
60 or more	2.11 (1.83–2.44)	1.61 (1.22–2.12)
Education		
Up to 4 years	1.00	1.00
5–8	0.87 (0.76–1.00)	1.03 (0.84–1.27)
9–11	0.72 (0.61–0.85)	1.15 (0.93–1.43)
12 or more	1.57 (1.31–1.89)	2.45(1.95–3.09)
Skin color/Race		
Black	1.00	1.00
Brown	1.00 (0.79–1.26)	1.13 (0.85–1.51)
White	1.17 (0.92–1.48)	1.22 (0.90–1.67)
Chronic disease		
0	1.00	1.00
1	1.60 (1.36–1.88)	1.46 (1.23–1.73)
2 or more	2.29 (1.95–2.68)	2.03 (1.69–2.44)

Note. * For all analysis, the Odds Ratios (OR) were calculated from logistic regression.

use. The adjusted analysis showed that residents of the North Region had 56.0% higher odds of using ICPs than residents of the South Region, that women had 44.0% higher odds than men and adults with 50–59 years had 76% higher odds than participants aged between 18 and 29 years. The use of ICPs was also superior among Brazilian with 12 or more years of education (OR = 2.45 95%CI 1.95–3.09) and among adults with two or more chronic diseases (OR = 2.03 95%CI 1.69–2.44) (Table 2).

4. Discussion

The present study aimed to evaluate the prevalence of ICPs use in Brazil and its associated factors. The results showed that the prevalence of use of at least one ICPs by Brazilian adults was 4.1%, while the most used were medicinal plants and phytotherapy (2.5%), acupuncture (0.9%) and homeopathy (0.6%). The prevalence of ICPs use was higher in the North Region, among older people, women, participants with higher educational attainment, and with a higher number of chronic diseases.

In comparison with findings from other national studies, the prevalence of the ICPs use in Brazil (4.1%) was low. In a systematic review conducted by Cooper et al. [29], the prevalence of ICPs use in 14 countries (United States, United Kingdom, Canada, Australia, Norway, Israel, Denmark, Malaysia, Saudi Arabia, South Korea, Sweden, Singapore, Germany, Japan) ranged from 9.8% to 76.0%. However, Cooper et al. [29] argued that some of these prevalence estimates were inflated by the inclusion of prayer as a complementary practice, an activity frequently reported in the USA and East Asia; and by the inclusion of therapies not commonly considered ICPs, such as dietary supplements and indigenous traditional medicine. These results reinforce the need for a more standardized approach to collect ICPs data, to allow direct comparison of prevalence between populations. Finally, the countries previously evaluated had a very different social, demographic and cultural profile from Brazil, and none of them were from Latin American [29].

The use of medicinal plants and phytotherapy in Brazil was higher than the global prevalence (0.9%), surpassing countries such as Canada (0.6%), United Kingdom (1.8%), United States of American (1.8%) and Japan (2.4%), being only lower than Australia (4.7%) [29]. Moreover, when the North Region is analyzed separately, the prevalence of medicinal plants and herbal medicine reaches 5.6%, indicating the strong cultural aspect of medicinal plants in this region, which has contact with indigenous communities and covers a large part of the Amazon rainforest. Nonetheless, the fact that the prevalence of medical plants' use found in the current study was substantially lower than subnational studies requires further investigation.

One possible explanation for the inconsistency is that participants might have interpreted the NHS question as whether over the past 12 months they had received for treatment with medicinal plants *only* directly from a health professional (doctors, acupuncturists) or a healer. This would have drastically reduced the prevalence since the most frequent use of medicinal plants is self-administered [31]. The ethnobotanical and primary care studies show that participants use medicinal plants as a form of self-care, and normally receive support from their family or other significant others (neighbours, friends, church community, etc).

With respect to acupuncture, the prevalence of use in Brazil (0.9%) was below global levels (1.4%). Several countries, such as Israel (2.9%), Singapore (5.2%), Denmark (1.5%), Japan (6.7%) and England (1.6%), showed a higher prevalence of acupuncture use than Brazil [29]. One of the main challenges for the application of acupuncture in Brazil has been the on-going debate about the regulation of the practice. In 2012, the 1st Region Federal Court decided that acupuncture in Brazil could only be performed by physicians. The representatives of other health professional categories (i.e. acupuncturists, nurses, psychologists, etc) contested the legality of this decision and argued that medical

exclusivity is unconstitutional and contrary to SUS principles. The uncertainties about the practice of acupuncture in Brazil remain a barrier to wider implementation in the national health system and subsequent use by the Brazilian population [32].

The use of homeopathy in Brazil (0.6%) was also below the world standards (1.5%) and countries such as Germany (1.0%), Canada (2.3%) and the United States (1.8%). Among the barriers to the use of homeopathy in Brazil are the perception of homeopathy being a "soft medicine" (i.e. a "soft science"), unable to treat patients with more serious cases; the scarcity of methodologically rigorous research in Brazil evaluating the effects of homeopathy; and the lack of information by health managers [33]. The results show that among all practices homeopathy is the one which implementation has been the slowest [34,35].

In Brazilian territory, the use of ICPs is more frequent among low-income groups since high-income groups often prefer standard medical care [36]. The reasons for the higher use among the low-income groups would be the cultural acceptance, easy access and the perceived efficacy of ICPs compared to the costly drugs and other standard biomedical procedures [37]. This is a possible explanation for the higher prevalence found in the North region of the country: the scarcity of access to standard medical care associated with a wider dissemination and cultural legitimacy of traditional and popular practices.

The prevalence of ICPs use was also higher among those with higher educational attainment (OR = 2.45, 95%CI, 1.95–3.09). This is consistent with Western countries such as the United States, Denmark, and Canada. A recent systematic review indicated that higher educational attainment was a predictor of ICPs use in 75% of the studies analyzed [38]. Possible explanations for greater use among those with higher education are higher health literacy, greater potential to make their own health decisions, and higher disposable income to invest in health services [39].

A higher prevalence of ICPs use was also present in patients with chronic diseases and among the elderly. Patients with chronic diseases usually search for ICPs as a way to reduce the side effects of medications, when they are dissatisfied with conventional medical practices or experiencing poor quality of life [39]. In comparison to standard medical procedures, ICPs have a holistic character, focusing not only the physical symptoms reported by patients but also on their mental health and well-being [11]. Therefore, ICPs become attractive for older patients and those with chronic disease, since they benefit more from the continuous care and focus on their well-being than from medical interventions that were designed to treat acute episodes.

The present study has some limitations. First, it is important to highlight that a single informant from the household reported the information of all residents, which may influence the accuracy of the data [10]. **In addition, when asking which ICP the person used in the last 12 months, the Brazilian National Health Survey mentions specifically only acupuncture, homeopathy, and medicinal plants/phytotherapy. The fourth option in the question is "Others". Not mentioning a longer list of ICPs may lead to an underestimation of their global use.** However, data from the National Health Survey undergo rigorous criticism and consistency analysis, being considered the official data of the country and representative for the Brazilian population, providing valuable information about populational health and the health system.

5. Conclusions

The results of this study indicate the importance of monitoring the use of complementary practices in the country, as well as the need for studies with health outcomes that rigorously evaluate the effectiveness of practices to improve health conditions in Brazil.

Compliance with ethical standards

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. Informed consent was obtained from all individual participants included in the study.

Authorship

All persons who meet authorship criteria are listed as authors.

Conflicts of interest

The authors declare that they have no conflict of interest.

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Appendix A. Supplementary data

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References

[1] World Health Organization, WHO Global Report on Traditional and Complementary Medicine 2019, WHO, Geneva, 2019.

[2] World Health Organization, Traditional Medicine Strategy: 2014-2023, WHO, Hong Kong, 2013.

[3] K. Peltzer, S. Pengpid, Prevalence and determinants of traditional, complementary and alternative medicine provider use among adults from 32 countries, Chin. J. Integr. Med. 24 (2018) 584–590.

[4] N.A. Alrowais, N.A. Aluousefi, The prevalence extent of Complementary and Alternative Medicine (CAM) use among Saudis, Saudi Pharm. J. 25 (2016) 306–318.

[5] T.G. Rhee, I.M. Harris, Gender differences in the use of complementary and alternative medicine and their association with moderate mental distress in US adults with migraines/severe headaches, Headache 57 (2017) 97–108.

[6] M. Wemrell, J. Merlo, S. Mulinari, A.C. Hornborg, Two-thirds of survey respondents in southern Sweden used complementary or alternative medicine in 2015, Complement. Med. Res. 24 (2017) 302–309.

[7] K. Peltzer, S. Pengpid, A. Puckpinyo, S. Yi, V. Anh le, The utilization of traditional, complementary and alternative medicine for non-communicable diseases and mental disorders in health care patients in Cambodia, Thailand and Vietnam, BMC Complement Altern. Med. 16 (2016) 92.

[8] T.G. Rhee, R.L. Evans, D.D. Mcalpine, P.J. Johnson, Racial/ethnic differences in the use of complementary and alternative medicine in US adults with moderate mental distress results from the 2012 national health interview survey, J. Prim. Care Community Health 8 (2017) 43–54.

[9] M.J. Leach, Profiling the Australian consumer of complementary and alternative medicine: a secondary analysis of national health survey data, Altern. Ther. Health Med. 22 (2016) 64–72.

[10] Instituto Brasileiro de Geografia e Estatística, Pesquisa nacional de Saúde, http://www.ibge.gov.br/home/estatistica/populacao/pns/2013/, (2013) , Accessed date: 4 January 2019.

[11] Brasil, Ministério da Saúde, Secretaria de Atenção à Saúde, Política Nacional de Práticas Integrativas e Complementares no SUS: atitude de ampliação de acesso, second ed., MS, Brasília, 2015.

[12] Brasil, Ministério da Saúde, Departamento de Atenção Básica, Ampliação da PNPIC, http://189.28.128.100/dab/docs/portaldab/documentos/informe_pics_maio2017.pdf , Accessed date: 3 December 2017.

[13] Brasil, Ministério da Saúde, http://www.brasilsus.com.br/images/portarias/marco2018/dia22/portaria702.pdf , Accessed date: 8 December 2018.

[14] L.B.D. Silva, I.C. Lima, R.A. Bastos, Terapias complementares e integrativas: conhecimento e utilização pelos docentes do curso de enfermagem de uma instituição pública, Rev. Saúde. Colet UEFS. 5 (2016) 40–45.

[15] L.B. Gentil, A. Robles, S. Grossemann, Uso de terapias complementares por mães em seus filhos: estudo em um hospital universitário, Ciência Saúde Coletiva 15 (2010) 1293–1299.

[16] P.H.C. Hilgert, Terapias naturais e populares na população de Belterra-PA: prevalência de uso e indíce de satisfação, UFSC, Florianópolis, 2012.

[17] J.F.R. Neto, A.A.D. Faria, M.F.S. Figueiredo, Complementary and alternative medicine: use in montes claros, minas gerais, Rev. Assoc. Med. Bras. 55 (2009) 296–301.

[18] J.F.R. Neto, L.S. Lima, L.F. Rocha, J.S. Lima, K.R. Santana, M.F. Silveira, Uso de práticas integrativas e complementares pic por pacientes adultos infectados com o vírus da imunodeficiência humana HIV, no norte de Minas Gerais, Rev. Baiana Saud Pub. 34 (2010) 159–172.

[19] J.A.C. Neto, M.T. Sirimarco, T.C. Candido, J.A. Duarte, D.A. Valle, J.S. Martins, T.C. Cândido, Uso e compreensão da medicina alternativa e complementar pela população de Juiz de Fora, HU Rev. 36 (2011) 266–276.

[20] F. Fontanella, F.P. Speck, A.P. Piovezan, I.C. Kulkamp, Conhecimento, acesso e aceitação das práticas integrativas e complementares em saúde por uma comunidade usuária do Sistema Único de Saúde na cidade de Tubarão/SC, Arq. Catarinenses Med. 36 (2007) 69–74.

[21] B.G. Brasileiro, V.R. Pizziolo, D.S. Matos, A. M Germano, C. M Jamal, Plantas medicinais utilizadas pela população atendida no "Programa de Saúde da Família", Governador Valadares, MG, Brasil, Rev. Bras. Ciencias Farm. 44 (2008) 629–636.

[22] R.D.C. F Vieira, Estudo do uso de plantas medicinais e/ou produtos a base de plantas medicinais como tratamento complementar, por pacientes atendidos no Centro de Pesquisas Oncológicas-CEPON/SC, UFSC, Florianópolis, 2008.

[23] D.S.A. Chaves, R.C.S. Siqueira, L.M. Souza, M.N.G. Sanches, A.M. dos Santos, C.J. Riger, Traditional uses of medicinal plants at Seropédica, Rio de Janeiro, J. Pharm. Pharmacogn. Res. 5 (2017) 1–14.

[24] L. Lobler, D. Santos, E.S. Rodrigues, N.R.Z. Santos, Levantamento etnobotânico de plantas medicinais no bairro Três de Outubro da cidade de São Gabriel, RS, Brasil, R. Bras. Bioci. 12 (2014) 81–89.

[25] K.H. Schwambach, T.A. Amador, Estudo da utilização de plantas medicinais e medicamentos em um município do sul do Brasi, Lat. Am. J. Pharm. 26 (2007) 602–608.

[26] V.F. Veiga Júnior, Estudo do consumo de plantas medicinais na Região Centro-Norte do Estado do Rio de Janeiro: aceitação pelos profissionais de saúde e modo de uso pela população, Rev. Bras. Farmacogn 18 (2008) 308–313.

[27] A.B. Silva, C.R.F. de Araújo, E.P. da Costa, E.C. Tavares, S.R. Mariz, Perfil e prevalência de uso de plantas medicinais em uma unidade básica de saúde da família em Campina Grande, Paraíba, Brasil, Rev. Ciências Farm Bás Apl. 35 (2014) 233–238.

[28] B.F. Sirqueira, P.E. Junior, G. Lacerda, E. Damasceno, Estudo etnobotânico de plantas medicinais utilizadas pela população atendida no "Programa Saúde da Família" no município de Juvenília, Minas Gerais, RBPeCS 1 (2014) 36–42.

[29] K.L. Cooper, P.E. Harris, C. Relton, K.J. Thomas, Prevalence of visits to five types of complementary and alternative medicine practitioners by the general population: a systematic review, Complement. Ther. Clin. Pract. 19 (2013) 214–220.

[30] C.L. Szwarcwald, D.C. Malta, C.A. Pereira, M.L.F.P. Vieira, W.L. Conde, P.R.B. Souza Junior, G.N. Damacena, L.O. Azevedo, G. Silva, M.M. Theme Filha, Pesquisa Nacional de Saúde no Brasil: concepção e metodologia de aplicação, Ciênc, Saúde Coletiva 19 (2014) 333–342.

[31] E.L. Menendez, Sujeitos, Saberes e Estruturas: uma introdução ao enfoque relacional no estudo da saúde coletiva, Hucitec, São Paulo, 2010.

[32] S.P. Rocha, M.A.C. de Benedetto, F.H. B Fernandez, D.M. C Gallian, The trajectory of the introduction and regulation of acupuncture in Brazil: recollections of the challenges and struggles/A trajetoria da introducao e regulamentacao da acupuntura no Brasil: memorias de desafios e lutas, Ciênc, Saúde Coletiva 20 (2015) 155–165.

[33] S.A.C. Salles, L.B. Scaraiber, Gestores do SUS: apoio e resistências à Homeopatia, Cad. Saúde Pública 25 (2009) 195–202.

[34] Brasil, Ministério da Saúde, http://bvsms.saude.gov.br/bvs/saudelegis/gm/2006/prt0971_03_05_2006.html , Accessed date: 4 January 2019.

[35] Brasil, Ministério da Saúde, Portaria nº 702, de 21 de março de 2018, http://www.brasilsus.com.br/images/portarias/marco2018/dia22/portaria702.pdf , Accessed date: 4 January 2019.

[36] N.F. Barros, C.T. Cruz, C. Spadacio, A.R. Ferreira Junior, Ricos tratam-se com Medicina alternativa e complementar e pobres com Medicina tradicional: o uso de práticas não convencionais por mulheres em tratamento do câncer de mama, in: R.M. Silva, L.J.E.S. Vieira, P.M.C. Collares (Eds.), Saúde da mulher na diversidade do cuidado na atenção básica, Hucitec, São Paulo, 2012, pp. 232–246.

[37] C.D. Tesser, Práticas complementares, racionalidades médicas e promoção da saúde: contribuições poucos exploradas, Cad. Saúde Pública 25 (2009) 1732–1742.

[38] M. Frass, R.P. Strassl, H. Friehs, M. Mullner, M. Kundi, A.D. Kaye, Use and acceptance of complementary and alternative medicine among the general population and medical personnel: a systematic review, Ochsner J. 12 (2012) 45–56.

[39] R. Reid, A. Steel, J. Wardle, A. Trubody, J. Adams, Complementary medicine use by the Australian population: a critical mixed studies systematic review of utilisation, perceptions and factors associated with use, BMC Complement Altern. Med. 16 (2016) 176.