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Spatial Distribution of Integrative and Complementary Health Practices in Primary Health Care in Brazil

Distribuição espacial das Práticas Integrativas e Complementares em Saúde na Atenção Básica no Brasil

Distribución espacial de las Prácticas Integrativas y Complementarias de Salud en la Atención Básica de Brasil

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ABSTRACT

Objective: To analyze the spatial distribution of Integrative and Complementary Health Practices (Práticas Integrativas e Complementares em Saúde – PICS) in Brazil's Primary Health Care (PHC) to broaden the discussion about its offer. **Methods:** A cross-sectional ecologic study was carried out in 2020 using data from the Brazilian public health care information system dating from 2019. For the analysis, the dependent variable was the number of visits, and the independent variables were the territory, the Human Development Index (HDI) and PHC coverage. Pearson's chi-square and Spearman's correlation tests were used for statistical comparisons. **Results:** The total prevalence rate of visits in 2019 was 1,593,128 in primary, secondary and tertiary care within the Unified Health System (Sistema Único de Saúde – SUS). When we analyzed exclusively and separately PHC (n=51,352; 3.2%), the highest rate of visits was found in the Southeast (n=15,210; 29.7%) and Northeast (n=12,559; 24.4%) regions, with higher rates of electrical stimulation sessions (n=6,397; 12.4%) and body practices in Traditional Chinese Medicine (n=4,588; 8.9%). Correlations were positive between visits and population (r=0.62) and between visits and HDI (r=0.24). **Conclusion:** It was evident that the spatial distribution of PICS in PHC is uneven when considering the prevalence rate of each region. The positive correlations may represent the search for alternative care in the face of chronic conditions, musculoskeletal complaints, and dissatisfaction with Modern Medicine. These factors generally cause an increase in the demand for PICS, especially in regions where higher social development favors individual autonomy.

Descriptors: Unified Health System; Primary Health Care; Complementary Therapies; Traditional Medicine; Health Promotion.

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RESUMO

Objetivo: *Analisar a distribuição espacial das Práticas Integrativas e Complementares em Saúde (PICS) na Atenção Básica (AB) brasileira para a ampliação da discussão sobre sua oferta.* ***Métodos:*** *Estudo ecológico transversal realizado em 2020, a partir do sistema público brasileiro de informação em saúde do ano de 2019. Para análise, analisou-se a variável dependente quantidade de atendimentos, enquanto as variáveis independentes deram-se por território, Índice de Desenvolvimento Humano (IDH) e a cobertura da AB. Para as comparações estatísticas utilizaram-se os testes de qui-quadrado de Pearson e correlação de Spearman.* ***Resultados:*** *Considerando AB, secundária e terciária do Sistema Único de Saúde (SUS), a prevalência total de atendimentos em 2019 apresentou-se por 1.593.128. Separando e analisando exclusivamente a AB (n=51.352; 3.2%), a maior prevalência de atendimentos apresentou-se nas regiões Sudeste (n=15.210; 29,7%) e Nordeste (n=12.559; 24.4%), com ocorrências maiores de sessões de eletroestimulação (n=6.397; 12,4%) e de práticas corporais em Medicina Tradicional Chinesa (n=4.588; 8,9%). As correlações deram-se positivas entre atendimentos e população (r=0,62), e entre atendimentos e IDH (r=0,24).* ***Conclusão:*** *Evidenciou-se que a distribuição espacial das PICS na AB é desigual ao se considerar as prevalências de cada região. Já as correlações positivas podem representar a procura por alternativas de cuidado frente a condições crônicas, queixas musculoesqueléticas e insatisfação com a Medicina Moderna; fatores que geralmente provocam o aumento pela procura de PICS, principalmente em regiões onde o desenvolvimento social mais elevado favorece a autonomia da pessoa.*

Descritores: *Sistema Único de Saúde; Atenção Primária à Saúde; Terapias Complementares; Medicina Tradicional; Promoção da Saúde.*

RESUMEN

Objetivo: *Analizar la distribución espacial de las Prácticas Integrativas y Complementarias de Salud (PICS) de la Atención Básica (AB) brasileña para la ampliación de la discusión de su oferta.* ***Métodos:*** *Estudio ecológico transversal realizado en 2020 a partir del sistema público brasileño de información en salud del año 2019. Se analizó la variable dependiente "cantidad de consultas" mientras las variables independientes se dieron por el territorio, el Índice de Desarrollo Humano (IDH) y la cobertura de la AB. Para las comparaciones estadísticas se ha utilizado las pruebas de chi-cuadrado de Pearson y la correlación de Spearman.* ***Resultados:*** *Considerando la AB, secundaria y terciaria del Sistema Único de Salud (SUS), la prevalencia total de las consultas en 2019 ha sido de 1.593.128. Separando y analizando exclusivamente la AB (n=51.352; 3.2%), la mayor prevalencia de consultas se dio en las regiones Sudeste (n=15.210; 29,7%) y Noreste (n=12.559; 24.4%), con ocurrencias de más sesiones de electroestimulación (n=6.397; 12,4%) y de prácticas corporales de la Medicina Tradicional China (n=4.588; 8,9%). Las correlaciones han sido positivas entre las consultas y la población (r=0,62) y entre las consultas y el IDH (r=0,24).* ***Conclusión:*** *Se ha evidenciado que la distribución espacial de las PICS en la AB es desigual respecto las prevalencias de cada región. Las correlaciones positivas pueden representar la búsqueda de alternativas de cuidado para las condiciones crónicas, las quejas musculo esqueléticas y la insatisfacción con la Medicina Moderna; factores que, en general, llevan al mayor interés por las PICS, sobre todo en las regiones donde el desarrollo social más alto favorece la autonomía de la persona.*

Descriptores: *Sistema Único de Salud; Atención Primaria de Salud; Terapias Complementarias; Medicina Tradicional; Promoción de la Salud.*

INTRODUCTION

Integrative and Complementary Health Practices (*Práticas Integrativas e Complementares em Saúde – PICS*) are a type of care that uses therapeutic resources within the framework of a broader concept of the health-disease process. Since the 1970s, the World Health Organization (WHO) has encouraged the inclusion of Traditional Complementary and Integrative Medicine (TCI) practices into national health systems – thus, 170 WHO member states currently recognize PICS. In that regard, it has been recommended that countries develop specific public health policies to foster health promotion and, therefore, greater accessibility. Thus, PICS have been increasingly included in the scope of healthcare services[1-4].

Brazil is known as one of the pioneer countries in the Americas to have claimed the inclusion of PICS in its Unified Health System (*Sistema Único de Saúde – SUS*) after the VIII National Health Conference in 1986[5], a process that resulted in the Integrative and Complementary Practices National Policy (*Política Nacional de Práticas Integrativas e Complementares – PNPIC*) in 2006[1], which brought visibility and increased supply, with 29 procedures being regularly carried out to date[6].

PICS have represented the consolidation of health promotion insofar as 70% of the population relies on these practices, which include primary health care due to the increase in chronic diseases, increased costs with health services, dissatisfaction with existing services, resurgence of interest in holistic and preventive care and care that offers quality of life when cure is not possible[7]. Therefore, PICS are proven to empower the individual[4] by allowing

them to enjoy the integrality of care concomitant with the humanization of therapeutic relationships, thus leading to the positive and affirmative recognition of the effectiveness of PICS as enhancers of people's quality of life[8].

However, the rate of institutionalization of PICS is still low in the sense that there is a policy but not a health program. As a consequence, there is a lack of funding as well as specific professionals in the network, which makes the structuring of services difficult. Yet, despite the low cost when implemented, the question remains as to what could favor the management of work[9].

In 2008, 197,951 (0.54%) services were offered using PICS across the three levels of care, whereas in 2016 this figure rose to 341,756 (1.77%). With regard to Primary Health Care (PHC) alone, 3,458 health services offering PICS through the National Program for Improving Access and Quality of Primary Health Care (*Programa Nacional de Melhoria do Acesso e da Qualidade da Atenção Básica – PMAQ-AB*) were registered in the National Registry of Health Facilities System (*Sistema do Cadastro Nacional de Estabelecimentos de Saúde – SCNES*) in 2014, a figure that increased to 4,834 in 2016[7] – a growth with a slight expansion[10].

Thus, this study aims to analyze the spatial distribution of Integrative and Complementary Heaçth Practices (*Práticas Integrativas e Complementares em Saúde – PICS*) in the Brazilian Primary Health Care (PHC) in order to broaden the discussion on its offer.

METHODS

This exploratory cross-sectional ecologic study[11] was carried out in 2020. Ecologic studies focus on the characteristics of population groups based on geographical and/or temporal comparison. Aggregate measures are useful for testing the plausibility of new hypotheses or generating new ecologic hypotheses[11].

Data were collected for the year 2019 from the information systems of the Ministry of Health (MoH) in Brazil: 1) Primary Health Care Information and Management System (*e-Gestor AB*) – data on the population and coverage of PHC by Brazilian states; 2) SUS Outpatient Information System (*Sistema de Informação Ambulatorial do SUS – SIA/DATASUS*) – number of visits by health care level; 3) Primary Health Care Information System (*Sistema de Informação em Saúde para a Atenção Básica – SISAB*) – number of PHC visits. Thus, it should be noted that the data used were secondary and publicly accessible; therefore, there was no need for prior authorization and secrecy.

The 29 PICS (procedures) recognized by Brazil's MoH and offered by SUS were the object of study used for the search for figures specifically referring to their occurrence in PHC: Traditional Chinese Medicine/Acupuncture, Anthroposophic Medicine, Homeopathy, Medicinal Plants and Phytotherapy, Social Thermalism/Crenotherapy, Art Therapy, Ayurveda, Biodanza, Circle Dance, Meditation, Music Therapy, Naturopathy, Osteopathy, Chiropractic, Reflextherapy, Reiki, Shantala, Integrative Community Therapy, Yoga, Apitherapy, Aromatherapy, Bioenergetics, Family Constellation, Chromotherapy, Geotherapy, Hypnotherapy, Laying on of Hands, Ozone Therapy and Flower Therapy[6].

Data were collected by seven researchers who were familiar with information systems and trained in extracting and recording information. The researchers were based in the following geographic aggregates: North, Northeast, Midwest, Southeast and South. Verification by more than one person was favored and information was organized in spreadsheets and transposed to R statistical software version 3.6.2.

The dependent variable is the amount of visits and the independent variables are the territory, Human Development Index (HDI) and PHC coverage. Homogeneity was verified by Pearson's chi-square test ($p<0.05$) to attest to the acceptability of the observed values, and correlations were checked by Spearman's correlation test ($p<0.05$), which measures the strength of a linear relationship between paired data. The consequent discussion was guided by the characteristics of the spatial distribution of PICS, that is, by the concentration of supply in PHC and the current limits and possibilities for its increase.

RESULTS

A total of 1,593,128 PICS visits were made within primary, secondary and tertiary health care. The procedure for which the highest number of visits was registered was Acupuncture – with insertion of needles (n=575,415; 36.1%) and then Auriculotherapy (n=488,399; 30.6%).

The number of visits originating exclusively from PHC was 51,352 (3.2%). Table I shows the distribution of this amount by geographic region: North (n=5,010; 9.7%), Northeast (n=12,559; 24.4%), Midwest (n=7,090; 13.8%), Southeast (n=15,210; 29.7%) and South (n=11,483; 22.4%).

The states that stood out in each region were: Rondônia (n=1,024), Tocantins (n=1,804), Bahia (n=2,055), Pernambuco (n=1,878), Mato Grosso (n=3,118), Federal District (n=2,524), São Paulo (n=6,495), Minas Gerais (n=4,565), Rio Grande do Sul (n=5,189) and Santa Catarina (n=5,179).

Table I - Number of visits to Primary Health Care (PHC) by territorial region in 2019. Brazil, 2020.

Region	State	Population	HDI	PHC-coverage	Visits
North	PA	8,602,865	0.646	65.09%	784
	AM	4,144,597	0.674	66.99%	658
	RO	1,777,225	0.69	74.26%	1,024
	TO	1,572,866	0.699	93.80%	1,804
	AC	881,935	0.663	82.65%	389
	AP	845,731	0.708	77.05%	167
	RR	605,761	0.707	73.32%	184
				Total	**5,010**
Northeast	BA	14,873,064	0.66	79.44%	2,055
	PE	9,557,071	0.673	79.90%	1,878
	CE	9,132,078	0.682	81.35%	1,157
	MA	7,075,181	0.639	86.22%	1,683
	PB	4,018,127	0.658	98.43%	1,348
	RN	3,506,853	0.684	83.14%	1,693
	AL	3,337,357	0.631	81.09%	1,340
	PI	3,273,227	0.646	99.48%	1,374
	SE	2,298,696	0.665	88.54%	31
				Total	**12,559**
Midwest	GO	7,018,354	0.735	73.49%	693
	MT	3,484,466	0.725	74.70%	3,118
	DF	3,015,268	0.824	56.49%	2,524
	MS	2,778,986	0.729	75.13%	755
				Total	**7,090**
Southeast	SP	45,919,049	0.783	60.24%	6,495
	MG	21,168,791	0.731	88.58%	4,565
	RJ	17,264,943	0.761	63%	3,677
	ES	4,018,650	0.74	71.28%	473
				Total	**15,210**
South	PR	11,443,957	0.749	75.06%	1,115
	RS	11377239	0.746	74.48%	5,189
	SC	7,164,788	0.774	89.97%	5,179
				Total	**11,483**

Source: prepared by the authors based on data from SISAB and Sistema E-Gestor
Legend: Human Development Index (HDI); Primary Health Care (PHC); Pará (PA); Amazonas (AM); Rondônia (RO); Tocantins (TO); Acre (Acre); Amapá (AP); Roraima (RR); Bahia (BA); Pernambuco (PE); Ceará (CE); Maranhã (MA); Paraíba (PB); Rio Grande do Norte (RN); Alagoas (AL); Piauí (PI); Sergipe (SE); Goiás (GO); Mato Grosso (MT); Distrito Federal (DF); Mato Grosso do Sul (MS); São Paulo (SP); Minas Gerais (MG); Rio de Janeiro (RJ); Espírito Santo (ES); Paraná (PR); Rio Grande do Sul (RS); Santa Catarina (SC)

The most frequent PICS procedure in PHC was the electrostimulation session (n=6,397; 12.4%), followed by body practices in Traditional Chinese Medicine (n=4,588; 8.9%). To enhance the understanding of the numeric data, Figure 1 was included to display the representation of the general concentration of PICS visits within PHC by Brazilian state, with darker colors designating greater concentration.

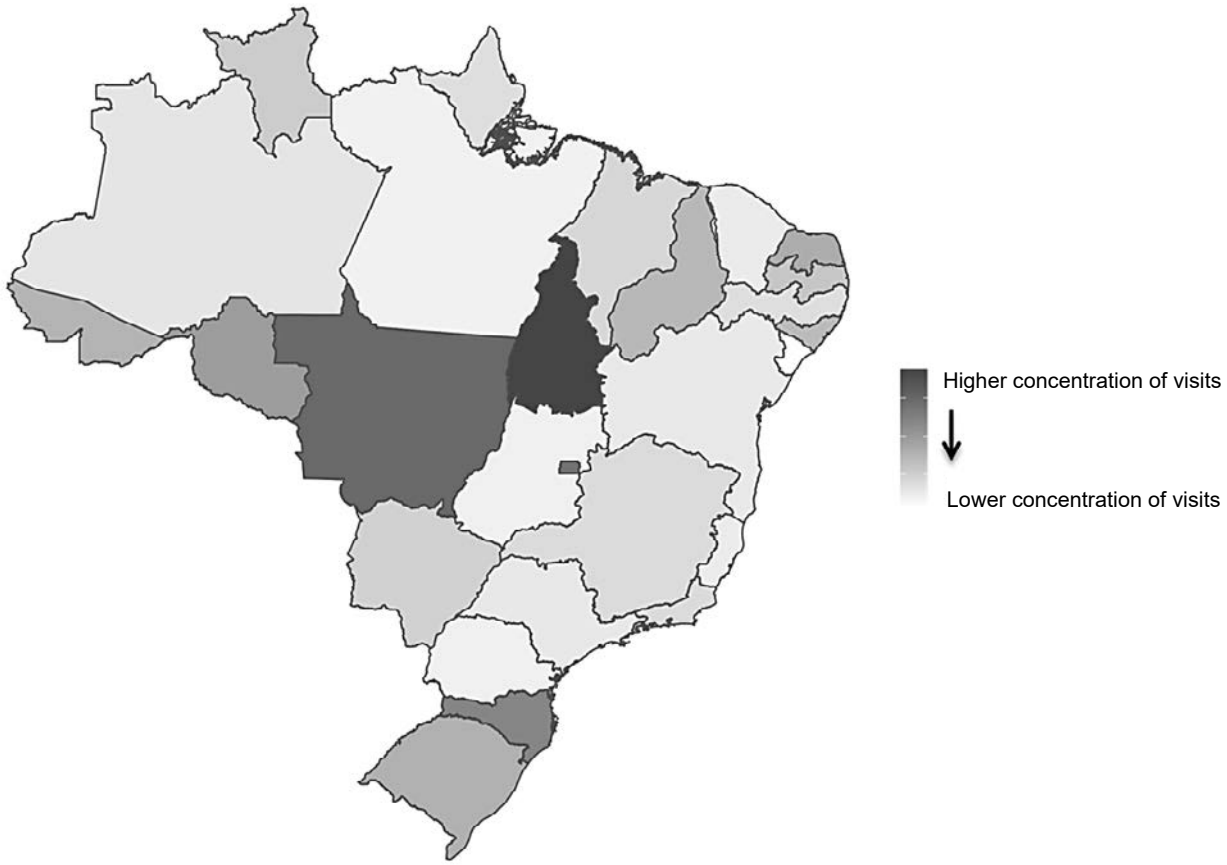

Figure 1 - Concentration of Integrative and Complementary Health Practices (PICS) visits in primary health care per 100 thousand/inhabitants in 2019. Brazil, 2020.

According to Table II, the correlations between visits and population (r=0.62) and between visits and HDI (r=0.24) were positive, but they do not imply a causal relationship. In addition to the correlation, Figure 2 shows the positive and negative trends of the study variables.

Table II - Correlation between visits and population, Human Development Index and primary health care coverage. Brazil, 2020.

	Population	HDI	PHC coverage	Visits
Population	1.000	0.245	-0.1777	0.6160
HDI	0.245	1.000	-0.4776	0.3535
PHC coverage	-0.178	-0.478	1.0000	0.0339
Visits	0.616	0.354	0.0339	1.0000

HDI: Human Development Index; PHC: Primary Health Care

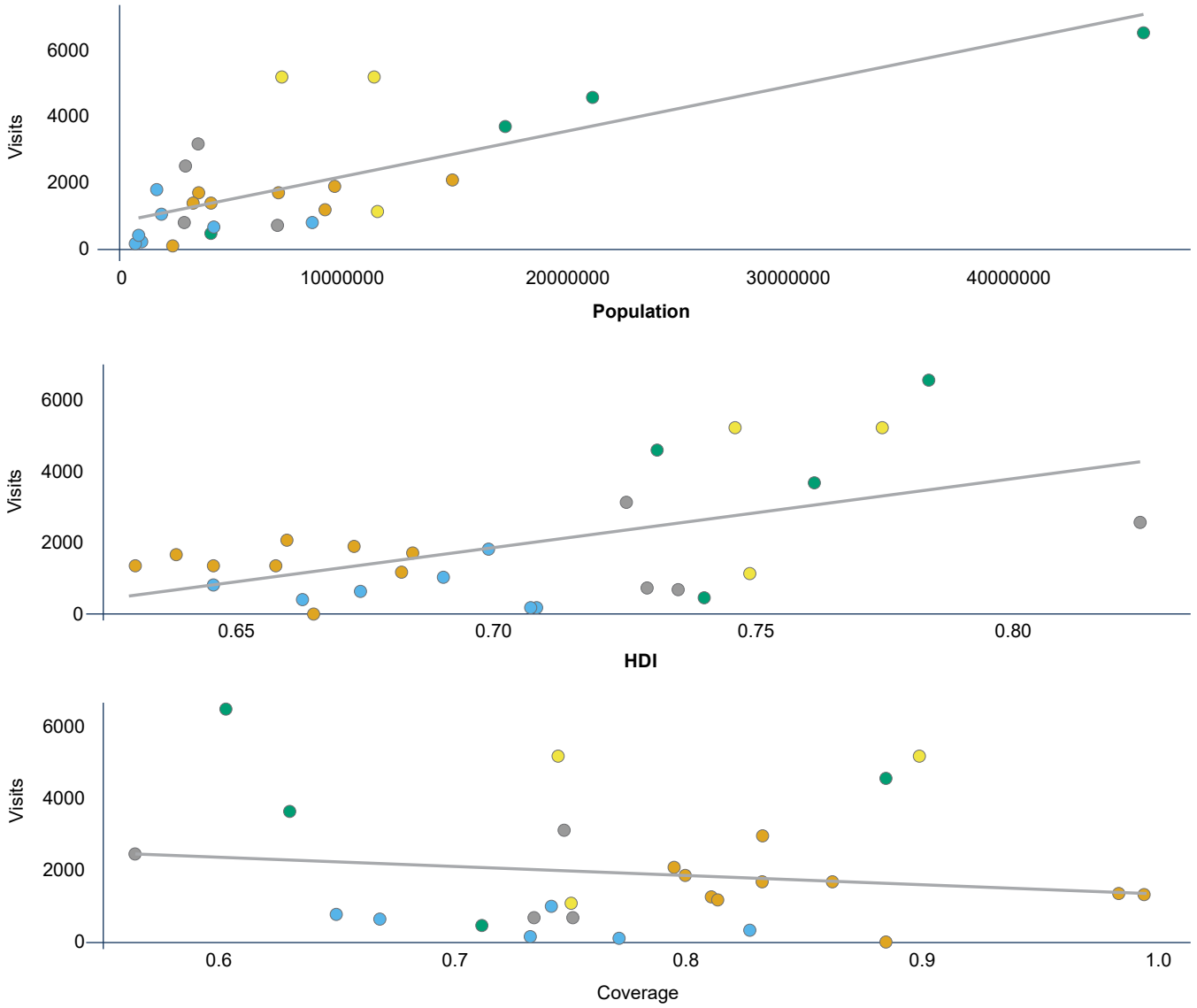

Figure 2 - Trend lines for visitts versus population, Human Development Index (HDI) and Primary Health Care (PHC) coverage. Brazil, 2020.

DISCUSSION

The findings of the present study showed a higher prevalence of PICS visits in PHC in the Southeast region, followed, respectively, by the Northeast, South, Midwest and North regions. However, the highest concentration of procedures was found in the Federal District and Mato Grosso. The Southeast hegemony in terms of supply and the low concentration in the North region were confirmed[12]. There were also two positive correlations between the number of visits and population (r=0.62) and between the number of visits and HDI (r=0.24).

One of the possible explanations for this quantitative differences is probably the socioeconomic discrepancy and the different investments in health across the regions. Regions with a greater offer of procedures tend to value the promotion of more therapeutic care options. On the other hand, in regions such as the North of the country, where PICS appear to be poorly formalized, it is hypothesized that PICS run at the margins of the system[12].

In any case, the number of people interested in the potential of PICS is increasing worldwide. In Germany, 60% of general practitioners offered some procedure in 2009, and by 2015 more than 67,000 physicians already had some training in Alternative and Complementary Medicine, with Acupuncture being the most common procedure used for musculoskeletal disorders[13]. In Canada, when comparing different generations of people, there was an increase in demand (1994/95, 14.6%) (2010/11, 24.5%) for PICS and Chiropractic for back pain[14]. In that regard, the United Kingdom recorded 12% of the general population being treated with PICS in 2005, with a rate of 16% of the population having reported seeking PICS in the last 12 months in 2015, the main procedures being massage (19%),

Osteopathy (12%) and Acupuncture (11%), for which only 4% of the population served came from a prescription or recommendation from PHC physicians – 68% for musculoskeletal conditions and 12% for mental health conditions[15].

In Brazil, the institutionalization of PICS in PHC grew to a lesser extent[16], with a low rate of expansion[10]. Implementation has been led mostly by municipal initiatives, but without a clear pattern of development[17]. Generally, the offer is made autonomously within the scope of biomedical care by professionals linked to PHC and Family Health Teams (*Equipes de Saúde da Família – ESF*) hired for different assignments. There is also the possibility of referral to other levels of care in the network[10].

The following are identified difficulties for the development of PICS in PHC: lack of funded research; lack of mechanisms for monitoring the practice; lack of training and development; lack of expertise in the subject among authorities and agencies[18]. In addition, there is also: lack of evaluation of the PNPIC itself in Brazil; lack of structure for the supply; little access by users; lack of development of processes and products; lack of supplies; lack of support from local management bodies; little knowledge among health professionals and service managers[19,20].

Thus, while the responsibility for implementation in Brazil is transferred to municipal managers who play a fundamental role in the implementation of PICS, they, due to lack of knowledge, do not see them as a health promotion strategy. In 2020, 432 managers out of a total of 1,617 stated that PICS were offered in their municipalities. However, only 365 provided complete information, thus leading to the finding that in 259 municipalities the procedures were predominantly inserted within the scope of the Family Health Strategy (*Estratégia Saúde da Família – ESF*)[22]. In confirming the importance of management through interviews with 42 managers, it has been found that 26.8% knew the PNPIC, 31.7% knew very little about it and 41% were unaware of its existence[17] or simply did not know how to respond/relate PICS as health care[21,22].

In the United States, there are efforts to increase the offer of PICS procedures in primary health care, representing 55% of medical visits, as they recognize their potential to improve health outcomes. Thus, after analyzing 11 clinics in 3 states and 218 respondents, researchers found high rates of physicians' familiarity (91.5%) with PICS and interest in co-management with conventional care (89.4%), with only approximately half of the respondents having had received some information in a class format[23]. In Brazil, 70 health professionals were interviewed – 76.8% of them said they knew the term "Integrative and Complementary Practices", 73.9% knew some procedure, and 94.3% showed interest in the subject[21] and self-care[24].

Previous contact with PICS represents a factor to arouse interest in them[23]. Therefore, the insertion of PICS in undergraduate curricula and education, including that of the population (public awareness), would improve communication and the relationship between physicians and PICS professionals, thus enabling more interdisciplinary perspectives[25]. In addition, it can be seen that users in Primary Health Care (PHC) have erroneously associated PICS with biomedicine when they are unable to solve suffering that is thought to be diffuse[26], thereby reducing their emancipatory power in terms of quality of life and health promotion[4,8].

Through a research itinerary, 30 health professionals from the ESF and NASF (*Núcleo Amplida de Saúde da Família*) participated in a qualitative study on PICS and health promotion. The categories that emerged were: unveiling concepts and expanding the understanding of PICS; reducing damage to health and promoting integrality through PICS; and PICS as a health promotion action in PHC. Thus, it was understood that empowerment, autonomy and awakening to critical awareness foster new horizons in health care, reducing, for example, excess medication and self-medication[27].

Generally, users seek PICS due to dissatisfaction with Conventional Medicine for their treatment of pain, symptoms of stress or anxiety, discontent with waiting to get care, consultation in a chain of specialists and financial constraints that put Biomedicine and PICS in opposition. The former is linked to a restrictive scientific evidence policy, which privileges quantitative evidence and limits the progress of the latter in PHC[16].

Thus, despite the historical importance of PICS for the promotion of global health, WHO resolutions, guidelines and reports, the establishment of PNPIC in 2006 in Brazil and the regulation of 29 procedures by the MoH, the offer of PICS in PHC remains below its capability. The spatial distribution of PICS reported in this study shows a project under construction where PNPIC should be incorporated into the organization and programmatic planning of health in the State[7], which would avoid the offer of PICS by individual and isolated initiatives that are often discontinued. Added to this is the lack of specific indicators for PICS, as it hinders their adequacy to the specificities of the practice in PHC[12].

Thus, it is necessary to have a health promotion perspective where PICS permeate management[20] and training for integrality because the use of PICS in SUS does not imply replacing the current mode of care, but rather contributing to its problem-solving capcity, emphasizing the ESF as a possible expander and promoter of this initiative provided it has professionals with clear attributions.

A limitation of this study is the lack of analysis of other variables that favored more correlations, such as the etiological causes of the demand for PICS in PHC, the characteristics of services and health professionals. However, the chosen analyses add information to the discussion of other works in the area, thus enhancing the struggle for the expansion of PICS.

CONCLUSION

We found that the spatial distribution of PICS in PHC is uneven when considering the prevalence rate in each region. Thus, positive correlations may represent the search for care alternatives in the face of chronic conditions, musculoskeletal complaints and dissatisfaction with Modern Medicine. Such factors cause the increase in demand for PICS, especially in regions where higher social development favors the autonomy of the person, thus increasing the offer or at least the referral.

The Southeast and North regions stood out. Curiously, these regions present marked sociodemographic and economic differences, which point to the need for more studies to understand this phenomenon. It is understood, then, that the best distribution of or increase in the offer of PICS in PHC depend on an approximation, starting from academic training, of human resources with specific attributions directed to PICS, permanent education programs, knowledge and predisposition of the municipal manager for the implementation of PICS, support for infrastructure and availability of inputs, and, above all, effective programmatic government induction.

CONFLICTS OF INTEREST

There are no conflicts of interest.

CONTRIBUTIONS

Alberto Sumiya contributed to the study design; acquisition, analysis and interpretation of data; and writing and/or revision of the manuscript. **Carla Fabiana Tenani** contributed to the conception, acquisition, analysis and interpretation of data and writing of the manuscript. **Kelerman Ezequiel Santos**, **Vanessa Mainara Marcos**, **Maria Helena Ribeiro de Checchi**, and **Louise Machuca** contributed to the acquisition of data and writing of the manuscript. **Gabriel Farhat** contributed to the acquisition of data. **Lucas Ramos Tavares** contributed to the analysis and interpretation of data. All the authors approved the final version of the manuscript and are responsible for all aspects of it, including ensuring its accuracy and integrity.

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