

Georeferencing and public policies for access to physical therapy in primary care in Parnaíba-PI

Georreferenciamento e políticas públicas de acesso à fisioterapia na atenção primária na cidade de Parnaíba-PI

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RESUMO | INTRODUÇÃO: O Sistema Único de Saúde (SUS) é uma política pública construída em um contexto de dimensões políticas, tecnológicas e sociais. Embora muito se tenha avançado no SUS, a ampliação do acesso à fisioterapia na atenção primária ainda é um dos seus grandes desafios. A distribuição espacial dos usuários pode fornecer importantes informações sobre políticas públicas voltadas para atenção primária à saúde. **OBJETIVO:** Analisar a distribuição espacial de usuários do SUS em busca de tratamento no Serviço Escola de Fisioterapia da Universidade Federal do Piauí (SEF-UFPI). **MATERIAIS E MÉTODOS:** Trata-se de uma pesquisa descritiva documental, quantitativa e retrospectiva. Pacientes com queixas musculoesqueléticas que buscaram tratamento fisioterapêutico no SEF-UFPI nos anos de 2010 a 2017 foram mapeados por meio de georreferenciamento espacial. **RESULTADOS:** 1476 prontuários foram identificados em 32 bairros distintos. 63% dos pacientes atendidos foram provenientes dos sete bairros mais próximos do SEF-UFPI. A maioria (n=924) dos pacientes era do sexo feminino, com queixas de dores crônicas nos membros inferiores. A cidade de Parnaíba-PI possui aproximadamente 155.000 habitantes e apenas quatro fisioterapeutas cadastrados como membros do NASF. **CONCLUSÃO:** O elevado fluxo de pacientes que buscaram atendimento fisioterapêutico é proveniente de áreas cobertas pela estratégia de saúde da família. A ausência de fisioterapeutas nestas equipes indica a necessidade urgente de reformulação das políticas públicas de acesso à reabilitação física na atenção primária.

PALAVRAS-CHAVE: Atenção primária à saúde. Fisioterapia. Georreferenciamento.

ABSTRACT | INTRODUCTION: The Unified Health System (SUS) is a public policy built in a context of political, technological and social dimensions. Although much progress has been made in SUS, expanding access to physical therapy in primary care is still one of its major challenges. The spatial distribution of users can provide important information on public policies focused on primary health care. **OBJECTIVE:** To analyze the spatial distribution of SUS users seeking treatment at the School of Physical Therapy Service of the Federal University of Piauí (SEF-UFPI). **MATERIAL AND METHODS:** This is a descriptive, quantitative and retrospective research. Patients with musculoskeletal complaints who sought physiotherapeutic treatment at the SEF-UFPI in the years 2010 to 2017 were mapped using spatial georeferencing. **RESULTS:** 1476 records were identified in 32 different neighborhoods. 63% of patients attended came from the seven nearest neighborhoods of SEF-UFPI. The majority (n=924) of the patients were female, with chronic lower limb pain complaints. Parnaíba's city has approximately 155.000 inhabitants and only four physiotherapists registered as a NASF's members. **CONCLUSION:** The high flow of patients who sought physiotherapeutic care came from areas covered by family health strategy. The lack of physical therapists on these teams indicate the urgent need for public policies reformulation to access physical rehabilitation in primary care.

KEYWORDS: Primary health care. Physiotherapy. Georeferencing.

Introduction

Primary health care (PHC) is the gateway to the Unified Health System (SUS)¹. In PHC, a multiprofessional team focuses on promotion, prevention of diseases, protection, diagnosis, treatment, rehabilitation, health surveillance, harm reduction and palliative care². This team has as minimum formation the participation of doctors, nurses, dentists, oral health aides, nursing assistants and community health agents. Among the different health conditions addressed by this team, chronic noncommunicable diseases (CNCD) are particularly prominent, since they represent the highest burden of morbidity and mortality in Brazil³ and priority resolution in the first level of health care/PHC⁴.

Seeking to increase the scope of actions offered in the PHC, the Expanded Family Health Center (NASF) was created in 2008. They are configured as multiprofessional teams that work in an integrated way with the Family Health teams (eSF)⁵. The physical therapist is included in this multiprofessional team as a multiplier of actions that aim to promote health promotion and protection⁶. Although in theory, the participation of physical therapy in PHC is based, in practice, the profession still seeks to consolidate its space in this level of health care. The insertion of the physical therapist into an established territory and with a defined population, allows the knowledge of the functional health status of the population and stimulates the development of bonds between professionals and users⁷. The absence of this health professional in the eSF causes that the demands of the CNCD have little or no resolution, inducing the migration of the users to seek of physical rehabilitation for other health services. This phenomenon of migration can be observed in several Brazilian cities⁸. The city of Parnaíba-PI currently has 46 eSF and only 4 NASF teams, with one physical therapists for each team⁹.

The lack of this professional at the primary level can cause an overload in the other levels of attention, such as the rehabilitation services available in the municipality, which with often they are in locations opposite to the user, making it difficult to access.

One way to analyze the migration of users seeking for treatments not received in PHC is through georeferencing. This processing tool transformsspatial

data into spatial distribution maps¹⁰. Considering the increasing expansion and access to SUS services, information tools on the spatial distribution of users can provide important information on public policies aimed at primary health care¹¹. The objective of the present study was to analyze the spatial distribution of SUS users that seek for physical therapy treatment in secondary care in the city of Parnaíba-PI.

Methods

Analysis of medical records

This is an observational, longitudinal and retrospective study of the characteristics of the patients assisted in the musculoskeletal physical therapy sector of the School of Physical Therapy Service (SEF-UFPI) of the Federal University of Piauí, Parnaíba Campus, from the inception of the service (2010) to 2017. After approval by the Local Ethics Committee (N. 2.445.816), all the medical records of patients who sought SEF-UFPI due to musculoskeletal complaints were included in the period from June to December 2018. Patient records from other cities were excluded from the analysis. Data were collected as: age, sex, marital status, education level, complaint site (musculoskeletal segment), medical diagnosis, use of medications, stage of tissue repair (acute x chronic), presence of comorbidities, sedentarism, smoking and alcohol consumption.

Georeferencing

The analysis of the spatial distribution of the patients was organized in three main steps: the first one consisted of data collection referring to the address (street, neighborhood, city, country) and geographical coordinates of the Basic Health Units (UBS) of Parnaíba city. Records with incomplete address description were excluded; the second succeeded in the creation of a layout of the districts under georeferenced cartographic base (Leaf SA-24-YA-IV) of the city¹² and the third was the interpretation of the data in a GIS environment using ArcGIS Software v.10.3., transforming the data into spatial information or geography¹³.

Results

1476 medical records were identified in 32 different neighborhoods. Most of the patients were female, young adults, sedentary, with medical diagnosis and complaints in the lower limbs (Tables 1 and 2). 63% of patients attended came from the seven nearest neighborhoods of SEF-UFPI (Figure 1).

Table 1. Participants characteristics with musculoskeletal complaints attended at SEF-UFPI

| | Men (n=552) | Women (n=924) |
|-------------------------------|----------------|------------------|
| Age (years) | 37.7 ± 19.0 | 44.0 ± 19.3 |
| Education level | | |
| Elementary | 26.9 | 33.5 |
| High school | 24.1 | 23.1 |
| Higher education (incomplete) | 27.5 | 23.9 |
| Higher education | 21.4 | 19.5 |
| Sedentarism | 80.1 | 83.4 |
| Smoking | 6.3 | 5.3 |
| Alcoholism | 31.9 | 13.0 |
| Comorbidities | | |
| Diabetes mellitus | 2.4 | 5.4 |
| Arterial Hypertension | 8.9 | 14.9 |
| Medicines | 34.8 | 51.6 |

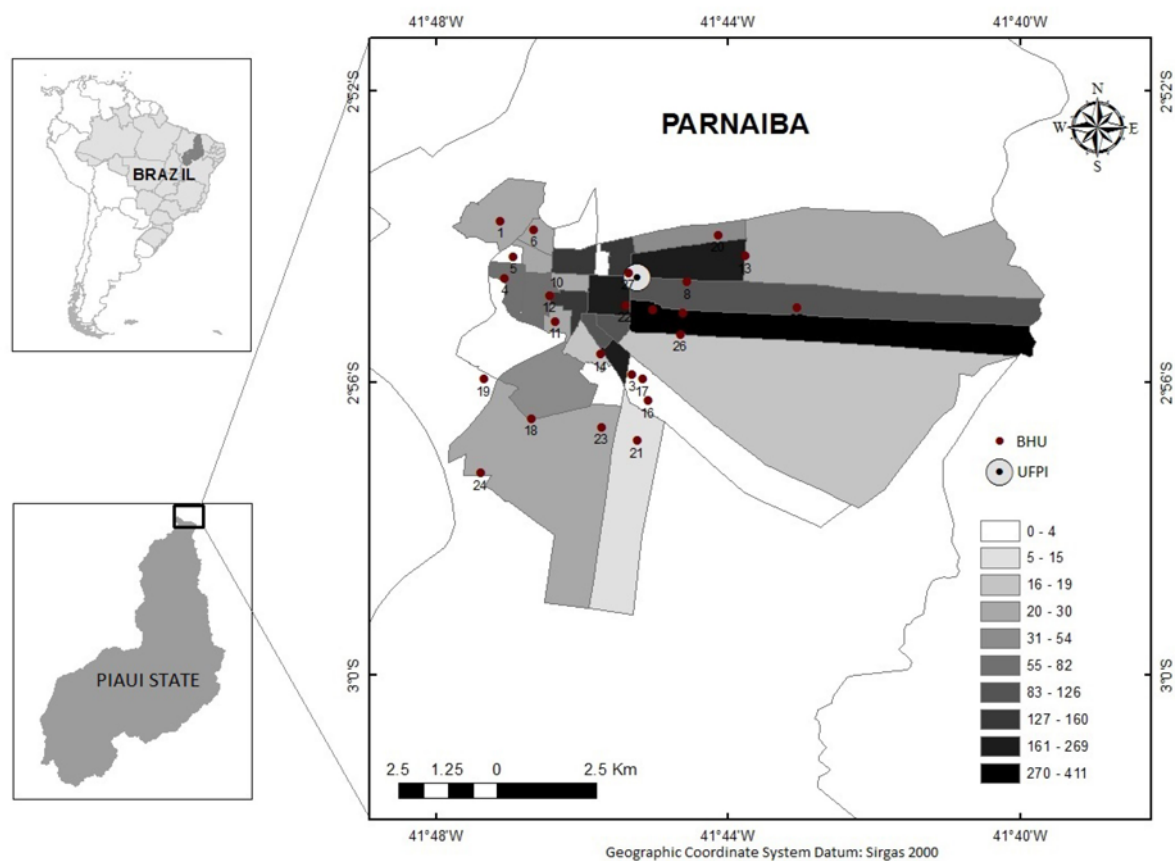
Continuous variables expressed as mean and standard deviation. Categorical variables expressed as percentage.

Table 2. Characteristics of musculoskeletal complaints

| | Men (n=552) | Women (n=924) |
|----------------------------|----------------|------------------|
| Head and neck | 3.8 | 7.8 |
| Spine | 21.2 | 29.7 |
| Upper limbs | 30.4 | 26.1 |
| Lower limbs | 44.6 | 36.3 |
| Tissue repair phase | | |
| Acute | 28.4 | 14.8 |
| Chronic | 71.6 | 85.2 |

Continuous variables expressed as mean and standard deviation. Categorical variables expressed as percentage.

Figure 1. Spatial distribution of patients attended at the School of Physical Therapy Service of the Federal University of Piauí



Source: The authors (2019).

Discussion

The present study sought to analyze the spatial distribution of SUS users seeking for physical therapy treatment. The results analysis revealed a large number of users seeking physical rehabilitation in other levels of care, such as the School of Physical Therapy Service of the Federal University of Piauí. Of the 1476 patients who moved to the SEF, 32 different districts were identified as their geographical location. These data indicate the migratory flow of patients with chronic non-transmissible musculoskeletal diseases that should have resolution in the primary care setting. However, this migration suggests an insufficiency of teams from the Expanded Family Health Center to meet the demands generated in the PHC. There is also the fact that there is not provided the participation of physical therapist in the minimum teams of the Family Health Strategy. The city of Parnaíba, on the coast of Piauí, is the second most populous city in the state, with approximately 155.000 inhabitants and only four NASF teams. In this context, the absence of physical therapists in the eSF teams and the lack of NASF teams indicate the urgent

need to reformulate public policies for access to physical rehabilitation in primary care¹⁴. In the current context, the analysis of the quantitative of physical therapists inserted in the NASF indicates a serious shortage of this professional. Although the World Health Organization (WHO) recommends a ratio of 0.66 physiotherapists per 1000 inhabitants, the ratio found in the city of Parnaíba (0.016 physiotherapists / 1000 inhabitants) makes the host, the guarantee of care and the resolution of the problem a task quite challenging in primary care¹⁵.

In this scenario, we can also observe that the difficulty of access to the service does not match with the organizational principles of SUS, where it must be ensured that services are organized at increasing levels of complexity, circumscribed to a certain geographic area and planned based on epidemiological studies criteria¹⁶. The definition and knowledge of the population to be attended to, allows easy access to therapies that need continued care. In this way, it is necessary to strengthen the PHC of the health systems, demarcating the flows of care organized from the epidemiological, health and social needs¹⁷.

It is extremely important to integrate the users and the health teams of the local neighborhoods in order to direct the specific care adequate to the individual and collective needs of the population and at the same time to value the preventive and rehabilitative work of the professionals in context. In addition, an efficient referral and counter-referral system is indispensable for access and integration in the different levels of attention in each social territory¹⁸.

In addition, the challenges of the health service network are linked to the capacity for network assistance, population access to services; with a great difficulty in referencing these patients, from primary care to secondary care¹⁴. When continuous care occurs in another level of attention, due to the non-fulfillment of demand in primary care, there may be changes in perception in relation to public services, for instance that possible deficiency in attendance due to a lack of professionals or vacancies induces an idea of an inefficient SUS. An insufficient perception of services offered in PHC may stimulate demand for other levels of service, with the intention to have their claims guaranteed¹. It is important to highlight that the process based on reference and counter-referral are responsibility of the primary care teams, shared between the eSF and NASF teams, according to the National Policy Basic Attention (PNAB)¹⁹.

It is important to highlight that NASF formation team must comply with regional needs, prioritizing professionals necessary to the local situation. However, many NASF teams are not formed according to local need. One of the factors contributing to inadequate formation may be related to the constant changes of managers and low fidelity of professionals in the team, who tend to present high turnover. In addition, many professionals act according to the curative model, acting primarily in the rehabilitation process, which distances the professional from the model of care recommended by SUS and reduces the professional-family bond²⁰.

The presence of the physical therapy professional in a comprehensive way to the eSF team can significantly impact the guarantee of access and integrality of the care for the users in diverse health conditions, especially those related to chronic non-communicable diseases. In this context, it is expected that the migrations seeking treatments in the other levels of attention, minimizing the overhead and costs demanded by services of greater complexity,

are reduced. More investments are needed to incorporate the physical therapist, as well as other professionals, in the minimal team and efforts of managers and public agents in search of a new formulation of the PNAB.

The present study has some limitations. Because it was a retrospective study, it was not possible to evaluate the reason why the patients sought treatment at SEF-UFPI. It is possible that the migration occurred due to the proximity of the SEF-UFPI to the central region of Parnaíba. Personal motivations may also have influenced the choice of patients, such as individualized care, physical structure and available resources. In this study, it was also not possible to evaluate if the patients had already received some previous physiotherapeutic treatment in the primary care.

Conclusion

The high flow of patients who sought physiotherapeutic care comes from areas covered by the family health strategy. The absence of physical therapists in these teams indicates the urgent need to reformulate public policies for access to physical rehabilitation in primary care.

Author contributions

All authors substantially contributed to the revision and its reporting, approved of the final version of the manuscript and agree to be accountable for all aspects of the work. Reis KS and Aguiar DF contributed to data collection, literature search and writing. Cavalcante PGL, Santos FCV and Hazime FA contributed to the overview methodological quality, study design and writing.

Competing interests

No financial, legal or political competing interests with third parties (government, commercial, private foundation, etc.) were disclosed for any aspect of the submitted work (including but not limited to grants, data monitoring board, study design, manuscript preparation, statistical analysis, etc.).

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