



Expansion of Physical Education professionals in the SUS from 2009 to 2023

Expansão dos profissionais de Educação Física no Sistema Único de Saúde de 2009 a 2023

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ABSTRACT

This study aimed to describe the integration of Physical Education professionals (PEP) in the Unified Health System (Sistema Único de Saúde - SUS) and to analyze the relationship between the number of PEP and the practice of physical activity in leisure time. For this purpose, an observational study was conducted, which analyzed the number of PEP in the SUS and indicators of physical activity practice in leisure time from 2009 to 2023, based on the telephone survey conducted by the Surveillance System of Risk and Protection Factors for Chronic Diseases. The number of PEP was obtained through the database system of the National Health Establishments Register, by occupations and links to the SUS. The results showed a growth percentage of 1379% in the integration of PEP into the SUS, and an increase of 33.6% in the percentage of the population who achieved the recommended levels of physical activity in leisure time. The highest compliance with recommended physical activity practice was observed in the age group of 18 to 24 years, and the lowest in the age group of 65 years or older. We concluded that there has been increases in the integration of PEP into SUS establishments and in the practice of physical activity in leisure time by the population in Brazilian capitals and the Federal District. However, there is an urgent need for increased investment in the integration of these professionals in different points of the SUS network, given the aging population and the need for interdisciplinary and collaborative solutions to consistently and more widely promote the practice of physical activity in leisure time.

Keywords: Workforce; Health Promotion; Unified Health System; Physical Activity; Public Policy.

RESUMO

O estudo teve como objetivo descrever a inserção dos profissionais de Educação Física (PEF) no Sistema Único de Saúde (SUS) e analisar a relação entre o número de PEF e a prática de atividade física no tempo livre. Para isso foi desenvolvido um estudo observacional e analisado o número de PEF no SUS e os indicadores de prática de atividade física no tempo livre no período de 2009 a 2023 referentes ao inquérito telefônico realizado pelo Sistema de Vigilância de Fatores de Risco e Proteção para Doenças Crônicas. O número de PEF foi obtido por meio do sistema da base de dados do Cadastro Nacional de Estabelecimentos de Saúde, por ocupações e vínculos no SUS. Os resultados encontrados mostram um percentual de crescimento de 1379% na inserção de PEF no SUS, e o aumento de 33,6% da população que atingiu os níveis recomendados da prática de atividade física no tempo livre. O maior cumprimento de prática recomendada de atividade física foi observado na faixa etária de 18 a 24 anos, e o menor, na faixa etária de 65 anos ou mais. Assim concluímos que ocorreu aumento da inserção de PEF nos estabelecimentos do SUS e da prática de atividade física no tempo livre pela população nas capitais brasileiras e Distrito Federal. Contudo, é urgente um crescente investimento para inserção deste profissional nos diferentes pontos da rede do SUS, frente ao envolvimento populacional e a necessidade de soluções de forma interdisciplinar e colaborativa para a produção consistente e ampliada do incentivo e prática de atividade física no tempo livre.

Palavras-chave: Força de trabalho; Promoção da saúde; Sistema Único de Saúde; Atividade física; Políticas públicas.

Introduction

Despite four decades of emerging Physical Activity Epidemiology, with significant advances in direct observational measures, primarily provided by accelerometry, and increased clarity regarding the benefits of regular physical activity, as well as community-based interventions that have led to a rise in the prevalence

of physical activity levels from a population perspective, challenges still remain. These include the low prevalence of physical activity relative to the ideal, the need for further advancements in understanding dose-response relationships, and the existing sociodemographic disparities^{1,2}.

The Unified Health System (*Sistema Único de Saúde*

- SUS) is considered an exemplary model of healthcare and, since the 2000s, has offered programs and initiatives to promote physical activity at the national level. The first policy to establish a significant milestone for Physical Education in the health sector is the National Health Promotion Policy (*Política Nacional de Promoção da Saúde* - PNPS), which incorporated body practices and physical activity as one of its eight priority areas, in both the initial version (2006) and in the updated versions (2014 and 2018). The policy aims to enhance health potentialities, either individually or collectively³.

Still within the context of the SUS, public policies related to body practices and physical activity emerged, enhancing the inclusion of Physical Education professionals (PEP). Notably, Resolution N° 218 of 1997 from the National Health Council included PEP among the categories of healthcare professionals⁴; the National Primary Healthcare Policy (2006)⁵; publication of Ordinance N° 931, which established the National Policy on Integrative and Complementary Practices (2007); Decree N° 6,286 establishes the Health in Schools Program (2007)⁶; the creation of the Family Health Support Centers (2008); Ordinance N° 1,402, which created the Health Gym Program (2011)⁷; the creation of provisional code 2241-E1 by the Ministry of Health (2013)⁸; and publication of Law N° 12,864, which includes physical activity as a determining and conditioning factor for health (2013)⁹. In addition, support materials and dissemination resources on the topic were released for the public, such as the Guide to Physical Activity for the Brazilian Population (2021)¹⁰ and the Recommendations for Developing Successful Physical Activity Practices in Primary Health Care (PHC) (2021)¹¹.

In 2020, PEP were included in the Brazilian Classification of Occupations as “Physical Education professionals in Health,” allowing these professionals to be integrated into multidisciplinary teams within both public and private health services¹². In addition, in 2020, Resolution N° 391 from the Federal Council of Physical Education, dated August 26, strengthened the discussion regarding the expansion of the professional scope of PEP in Brazil. This resolution defined their role in hospital settings, related to promotion, prevention, protection, education, intervention, recovery, rehabilitation, and treatment within the fields of physical activity and exercise¹³.

In conjunction with this movement, a global milestone was the Global Action Plan on Physical Activity

presented by the World Health Organization for the years 2018-2030. This plan proposes the goal of reducing physical inactivity by 15%. Items 1.4 and 3.2 describe the need to strengthen pre-service and post-service training for healthcare professionals in order to enhance their knowledge and skills for a more active society, as well as to implement and reinforce counseling for patients on increasing body practices and physical activity¹⁴. To achieve this, actions and public policies need to be implemented, in such a way that managers and decision-makers recognize the range of opportunities presented by PEP, aiming to increase physical activity and improve health at various levels¹⁰. Thus, it is possible to observe progress in the advocacy for physical activity as a public policy, which involves debates and studies demonstrating the impact of physical activity on economic aspects¹⁵.

In this context, Brazil recently published Ordinance GM/MS N° 1,105 of May 15, 2022, titled “Financial Incentive for Funding Physical Activity Actions in Primary Healthcare” with the aim of improving the care of individuals with non-communicable chronic diseases by integrating physical activity into their routines. The ordinance also aims to implement physical activity actions in PHC through hiring PEP, the acquisition of consumables, and enhancement of environments related to physical activity¹⁶.

Given the importance of PEP in combating the pandemic of physical inactivity, which is considered the fourth leading cause of death worldwide¹⁷, studies are necessary on the integration and role of PEP within the SUS, particularly in the context of PHC¹⁸. These studies are crucial for increasing the physical activity levels of the population and improving health through an action agenda that allows for safe and effective practice, including supervision and guidance. Thus, the current study aimed to describe the integration of PEP into the SUS and to analyze the relationship between the number of PEP and the practice of physical activity during leisure time. Thus, for the current study, the concept of body practices was considered as “individual or collective expressions of body movement, derived from knowledge and experience related to games, dance, sports, martial arts, and gymnastics, constructed either systematically (in school) or unsystematically (during free time/leisure)”¹⁹, and physical activity as a behavior involving voluntary body movements that expend energy above resting levels, promoting social interactions and engagement with the environment.

This can occur during leisure time, commuting, work or study, and domestic tasks¹⁰.

Methods

This study is observational in nature, analyzing the number of PEP within the SUS and indicators of physical activity during leisure time from 2009 to 2023.

Data on physical activity indicators during leisure time were obtained from the annual publications of the Risk and Protection Factors Surveillance System for Chronic Diseases by Telephone Survey (*Vigilância de Fatores de Risco e Proteção para Doenças Crônicas por Inquérito Telefônico - Vigitel*) from 2009 to 2023^{20,21}. The Vigitel is conducted through probabilistic sampling of the population aged 18 and over residing in Brazilian capitals and the Federal District, via telephone interviews. In 2022, Vigitel data collection did not occur due to the COVID-19 pandemic. Until the Vigitel 2010, sufficient physical activity during leisure time was considered as engaging in at least 30 minutes of light or moderate-intensity physical activity on five or more days a week, or at least 20 minutes of vigorous-intensity physical activity on three or more days a week, however, the document presenting the temporal trend from 2009 to 2023 standardized sufficient physical activity during leisure time as engaging in at least 150 minutes of moderate-intensity activity or at least 75 minutes of vigorous-intensity activity per week, regardless of the number of days²²⁻²⁴.

The number of PEP was obtained through the National Health Establishments Registry database on the SUS Informatics Department website (available at: <https://cnes.datasus.gov.br>), by occupation and affiliations within the SUS, from 2009 to 2023. The month of July was selected for all years considered in the study, with a focus on Brazilian capitals and the Federal District. The selected higher education occupations

were: fitness trainer, physical education professionals in health, physical education teacher for elementary education, physical education teacher for higher education, and physical education teacher for secondary education.

Descriptive analysis was conducted for the physical activity data and the number of PEP within the SUS from 2009 to 2023. Additionally, the Spearman correlation coefficient was applied to evaluate the relationship between the proportion of individuals engaging in physical activity and the number of PEP. Brazilian capitals and the Federal District were grouped according to regions. Statistical significance was considered at a p-value < 0.05.

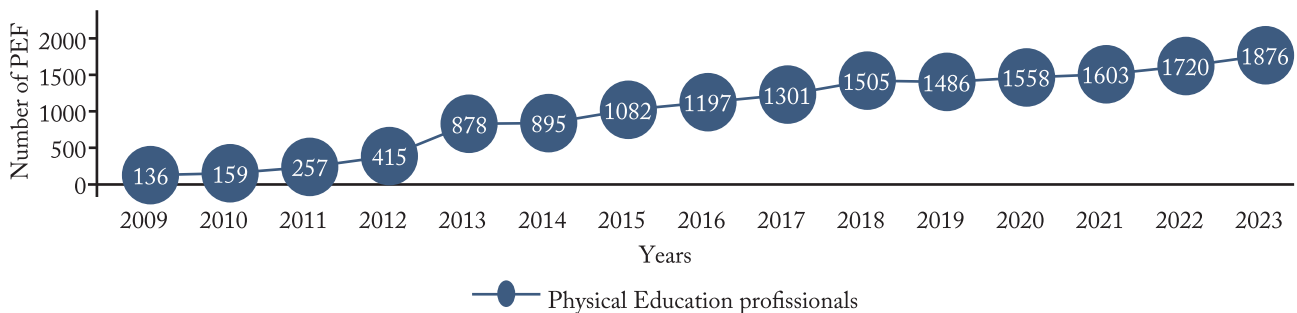
Results

From 2009 to 2023, there was a 1379% increase in the integration of PEP into the SUS (Figure 1) and a 33.6% increase in the percentage of the population who reported engaging in physical activity according to the recommended weekly levels during leisure time (Figure 2).

The highest proportion of individuals engaging in at least 150 minutes of weekly physical activity during leisure time was observed in the 18 to 24 age group, while the lowest proportion was found in the 65 years and older age group (Figure 2).

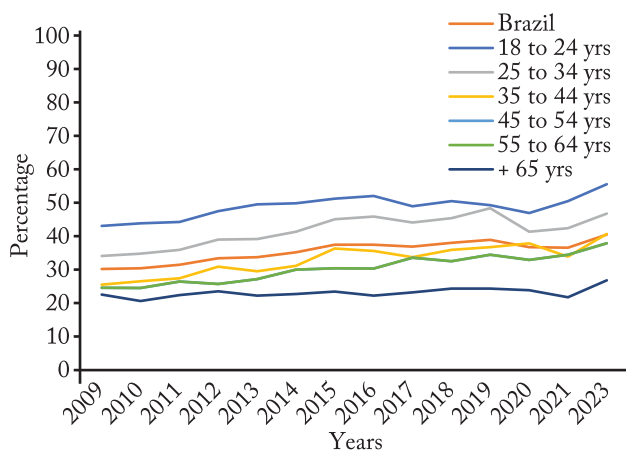
A higher percentage of physical activity during leisure time was observed among men compared to women. However, the annual percentage increase for women was 4.18 times that of men (Figure 3).

All Brazilian regions showed an increase in the number of PEP during the studied period (2009 to 2023), with the Southeast region experiencing the largest increase (from 15 to 786), followed by the North (from 11 to 204), Northeast (from 61 to 621), South (from 16 to 144), and Central-West regions (from 33



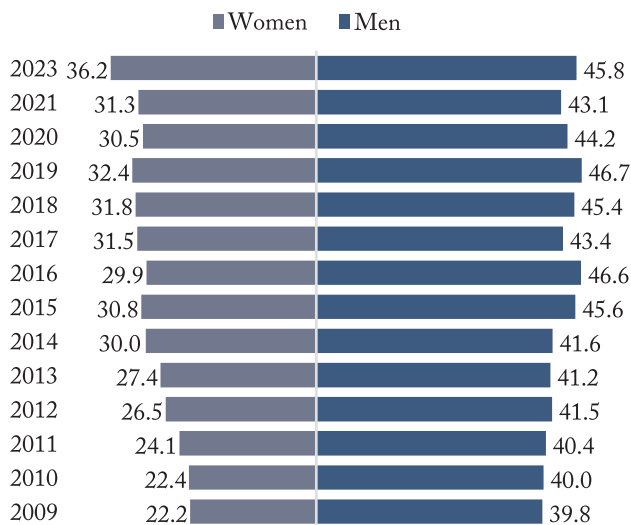
Source: CNES DATASUS data by higher education occupations.

Figure 1 – Temporal trend of PEP integrated into SUS health establishments, from 2009 to 2023, across Brazilian capitals and the Federal District



Source: Vigitel data from 2009 to 2023.

Figure 2 – Temporal evolution of physical activity levels during leisure time, considering all age groups, across Brazilian capitals and the Federal District, from 2009 to 2023



Source: Vigitel data from 2009 to 2023.

Figure 3 – Temporal evolution of the achievement of the physical activity levels during during leisure time for men and women in Brazil, considering all Brazilian capitals and the Federal District, from 2009 to 2023

to 121), respectively. Additionally, a trend was observed in the relationship between the number of PEP and the physical activity rate during leisure time, by region and over the years (Figure 4).

Discussion

Increases were observed in the integration of PEP into SUS health establishments and in the practice of physical activity during leisure time among the population in Brazilian capitals and the Federal District from 2009 to 2023. Additionally, there was an ecological relationship across different regions of Brazil between the number of PEP within the SUS and the physical

activity rate. The increase in the number of PEP working in the SUS and registered in the National Health Establishments Registry reflects the impact of public policies and programs aimed at promoting physical activity that have been established over time³.

It should be noted that the increase in the number of PEP in the SUS identified in this study may have been influenced by the establishment of the Health Gym Program and the Family Health Support Centers²⁵, currently identified as e-Multi, as Health Gyms are considered an important program for health promotion and disease prevention, aimed at continuing actions performed in PHC. These actions are carried out by a multidisciplinary team²⁵. A study published in 2023 identified a 476.01% increase in PEP in the SUS in Brazil from 2009 (n = 1,259) to 2021 (7,252), without applying regions, states and cities. They also identified an increase in residents, from three to 314 in the same period²⁶.

The density of PEP integrated into SUS establishments, and particularly in PHC, can impact the quality of body practices and physical activity performed by the users of these health services. Between 2014 and 2019, there is evidence of an increase in the availability of group activities related to body practices and physical activity, as well as the number of participants, conducted by healthcare professionals and PEP within the SUS, with notable emphasis on the Southeast and Northeast regions. This highlights existing disparities in the availability and access to these practices as a care strategy and right, as well as in the integration of PEP into health establishments. Despite the increases, financing for programs and actions related to body practices and physical activities remain a challenge²⁷.

It is the responsibility of the SUS to promote body practices and physical activity through the intervention of healthcare professionals at different levels of care. The perceived increase in the number of PEP within the SUS appears to be a result of public policies covering all three levels of care, incentivized by the PNPS of 2006²⁵. Investing in the development of strategies aimed at promoting physical activity, with a focus on increasing the physical activity levels of the population, can yield benefits, particularly economic, related to health costs and non-expensive treatments.

In the context of PHC, the field of Physical Education establishes a practical redefinition of the SUS, recognizing that the isolated action of a single professional category is insufficient. Instead, matrix support

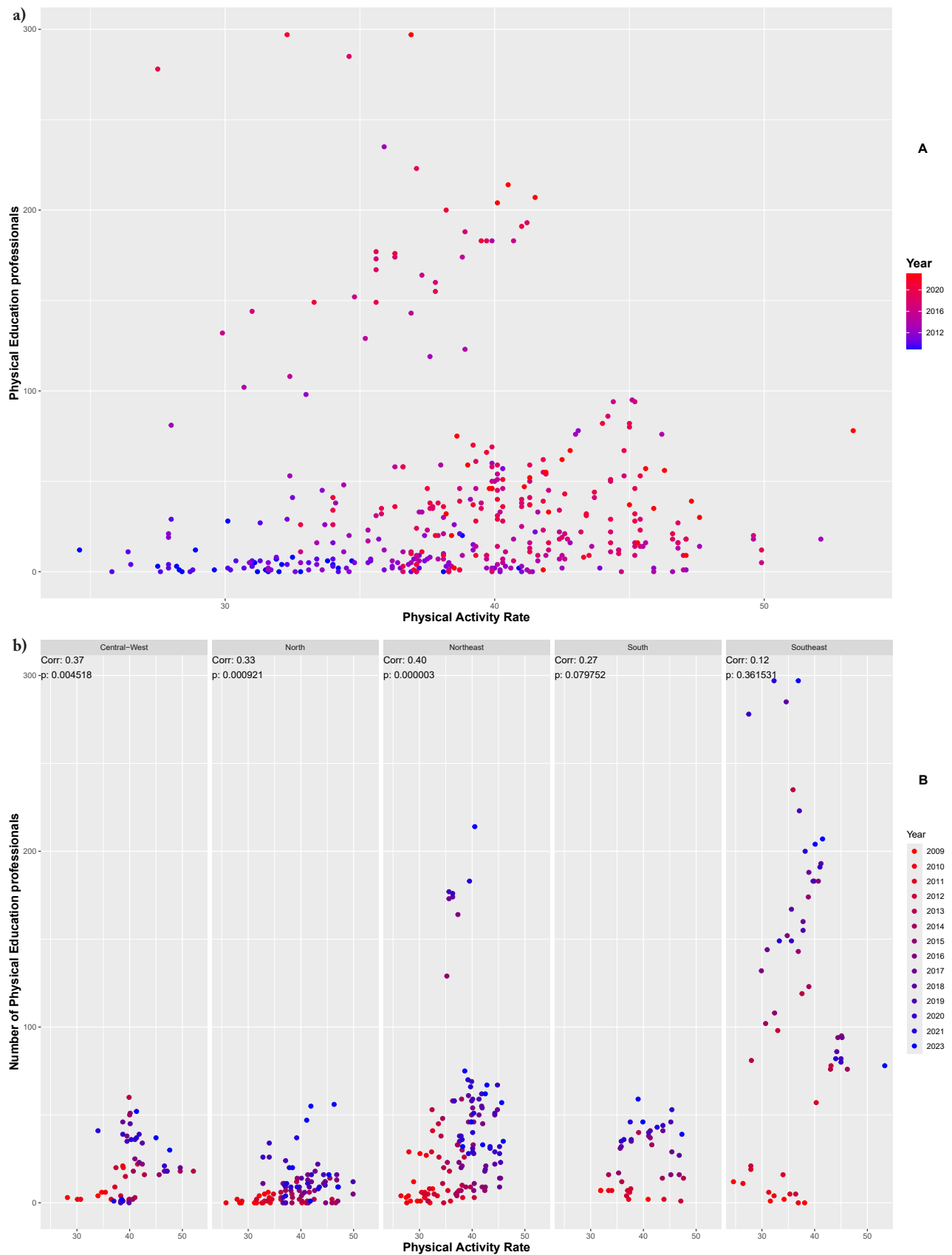


Figure 4 – Analysis of the relationship between the physical activity rate during leisure time and the number of PEP by region of Brazil, from 2009 to 2023

reveals the integration of the physical activity specialist with the reference team, involving a multidisciplinary approach²⁸. In this context, the PEP is considered a specialist in body practices and physical activity, while the reference team professionals are responsible for longitudinal health care. Thus, the work of the multidisciplinary team is constituted.

Regarding physical activity during leisure time, the highest prevalence was observed in the 18 to 24 age group, while the lowest prevalence was found in those aged 65 and over, although there have been increases over the years. Studies in the field have reported an increase in physical inactivity with advancing age²⁹. Investing in the prevention of risk factors, one of which is physical inactivity, can prevent approximately 80% of cardiovascular diseases and cases of type II diabetes. It is estimated that physical inactivity increases health costs by approximately \$54 billion per year. Therefore, changes in the population's physical activity patterns are necessary to combat some chronic non-communicable diseases³⁰.

Based on the above, it is crucial to invest in initiatives that promote body practices and physical activity across all age groups, so that the population can age more healthily and with a higher quality of life. This underscores the need for regular physical activity, especially with the guidance of PEP within the SUS, making access to these practices more readily available to the population. To implement effective programs for the prevention of non-communicable diseases, managers and decision-makers can use data on physical activity levels and trends. This process supports needs-based management and strengthens the use of evidence-based practices²⁹.

Light and moderate-intensity physical activity promotes health benefits for the population and can be offered in health facilities without the need for specialized structures. These activities can be conducted outdoors, individually or in groups, contributing to factors beyond physical health, such as strengthening social and psychological aspects, and facilitating the inclusion of older adults in these spaces. Furthermore, low-intensity physical activities are easier to integrate into SUS health spaces and can be performed in groups, such as walking, yoga, guided exercise, or strength training^{31,32}. However, many people do not have access to specific facilities for body practices and physical activities or live in neighborhoods where it is unsafe to walk or run outdoors. Therefore, offering these practices in SUS

health facilities, with the guidance and monitoring of a PEP, is essential for improving the population's physical activity levels and, consequently, enhancing health.

The execution of body practices and physical activity is related to a complex process that depends not only on an individual's willingness but also on local culture, healthcare professionals' advice, family support, availability of time, knowledge, access to appropriate facilities and spaces, socioeconomic conditions, and previous experiences³³. It is important that individual's health conditions are observed, not only considering physical and physiological aspects but also related to socio-familial and occupational dynamics. Traditionally, evaluations include anthropometric data, but broader issues related to an individual's life context are rarely included³³. To achieve this, it is important that healthcare system users have access to body practices and physical activities beyond the minimum recommendation of 150 minutes per week¹⁰, including connections with their own bodies and social interactions.

It is common to observe differences in the prevalence of physical activity during leisure time between men and women, with physical inactivity being higher among women than men. Additionally, older adults are less active than young adults²⁹. Public policies are important for reducing this disparity, by improving access to body practices and physical activities, particularly for groups considered more inactive, such as women and older adults³⁴.

Women present specificities compared to men, including biopsychosocial aspects. These gender-related particularities affect health, making studies that investigate women's access to body practices and physical activities important for understanding barriers. The results of these studies will be useful in the development of actions and public policies aimed at reducing these inequities^{34,35}. Men often develop distinct behavioral patterns throughout their lives, influenced by the social construction within society³⁴. One way to increase body practices and physical activity during leisure time is to improve women's participation in sports, by ensuring equal access to opportunities for their involvement in sports.

Considering the aging population and PHC as the entry point into the SUS, an effective strategy to promote physical activity is counseling, which can be a strategy for encouraging active behavior and contributing to health promotion and disease prevention. This approach is typically brief, conducted during individual consultations, and focused on individuals with morbid-

ities, as well as adults and older adults³⁶.

The findings of the current study also showed an increase in the number of PEP in the SUS over the years, with notable emphasis on the Southeast region. One possible interpretation for this prominence is the existence of established municipal programs promoting body practices and physical activities, such as the Exercise Guidance Service (Vitória, Espírito Santo), Agita São Paulo (São Paulo, São Paulo), City Gym Program (Belo Horizonte, Minas Gerais)³, and Carioca Gym Program (Rio de Janeiro, Rio de Janeiro), all of which are freely accessible to the population.

The SUS, founded on the principles of universality, comprehensiveness, and equity, has been effectively implemented through public policies that enhance the democratization of access to body practices and physical activities by integrating and strengthening health promotion actions³. It is important for policymakers to recognize key strategies to address barriers that reduce the population's engagement in physical activity³⁷.

In conclusion, there has been an increase in the number of PEP in the SUS, as well as an increase in the level of physical activity during leisure time among the population in the Brazilian capitals and the Federal District. Some specific policies and actions that promote body practices and physical activity may have contributed to this increase. However, there is an urgent need for greater investment in integrating these professionals across different points of the SUS network, given the aging population and the need for interdisciplinary and collaborative solutions to consistently and more widely promote and facilitate physical activity during leisure time.

Conflict of interest

The authors declare no conflict of interest.

Authors' contributions

Bernardo D: Conceptualization; Methodology; Data analysis; Research; Project administration; Data presentation design; Writing of the original manuscript; Approval of the final version of the manuscript. Spina PR: Conceptualization; Research; Writing-review & editing; Approval of the final version of the manuscript. Almeida LY: Research; Supervision; Writing-review & editing; Approval of the final version of the manuscript. Bonfim D: Conceptualization; Supervision; Writing-review & editing; Approval of the final version of the manuscript. Teodoro CS: Conceptualization; Research; Writing-review & editing; Approval of the final version of the manuscript. Paiva Neto FT:

Conceptualization; Research; Writing-review & editing; Approval of the final version of the manuscript. Vesga-Varela AL: Methodology; Data analysis; Writing-review & editing; Approval of the final version of the manuscript.

Declaration regarding the use of artificial intelligence tools in the process of writing the article

The manuscript did not use artificial intelligence tools for its preparation.

Availability of research data and other materials

The contents will be available at the time of publication of the article.

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