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ORIGINAL RESEARCH

Profile of scientific academic background and production of researcher physical therapists in Brazil

Perfil de formação e produção científica do fisioterapeuta pesquisador no Brasil

Perfil formativo y producción científica del fisioterapeuta investigador en Brasil

Natália Guimarães Melo[1], Isabela Alves Cunha[2], Júlia Ferreira Alves[3], Amanda Lindolpho Santos[4], Anna Paula Nogueira[5], Beatriz Correa Lima[6], Bruna Viani Dias[7], Jeovana Souza Cardoso[8], Jhennyfer Gonzaga de Oliveira Rocha[9], Nathálya Pereira Portugal[10], Rayssa Gabrielly de Araujo[11], Rayssa Martins de Souza[12], Roberta Larissa Oliveira Paulino[13], Tânia Cristina Dias da Silva Hamu[14], Cibelle Kayenne Martins Roberto Formiga[15]

ABSTRACT | To evaluate the academic background and scientific productions' profile of researcher physiotherapists in Brazil. The study was cross-sectional in design and performed by analyzing the professional resumes that have been updated within the last 5 years in the Lattes Platform of the Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq). The main variables analyzed were sex, geographical distribution, kind of undergraduate institution, working location, complementary training, scientific production, and participation in events. The analysis was carried out on 17,864 curricula which were within the selection criteria, out of a total of 47,741. There was a predominance of female therapists (75.5%) and therapists from the southeast region (35%). Most have completed their undergraduate degree in private institutions (75%) and graduate programs (61.4%), and work at universities (30%). Males perform better ($p<0.001$) in scientific productions, participation in events, and complementary training activities. Graduates from public institutions have more scientific productions, events, and complementary training activities ($p<0.001$). However, professionals that have completed their undergraduate degree in private institutions do graduate programs the most ($p=0.05$). Most researcher physical therapists in Brazil are females, have completed their undergraduate degrees in the Southeast region and in private institutions, have completed graduate programs and work in universities. Despite the female predominance, male professionals and those therapists who have completed their undergraduate degree from public institutions have a greater amount of scientific productions, participation in events and complementary degrees.

Keywords | Physical therapy; Scientific Production Indicators; Curriculum; Researchers.

RESUMO | O objetivo deste estudo foi avaliar o perfil de formação e produção científica do fisioterapeuta pesquisador brasileiro. Trata-se de um estudo transversal, realizado por meio de levantamento dos currículos profissionais cadastrados na Plataforma Lattes do Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq), atualizados nos últimos 5 anos. As principais variáveis analisadas foram sexo, distribuição dos fisioterapeutas pelo Brasil, tipo

[1]Universidade Estadual de Goiás (UEG) – Goiânia (GO), Brazil. E-mail: natalia-gmelo@hotmail.com. Orcid: 0000-0001-6971-3103
[2]Universidade Estadual de Goiás (UEG) – Goiânia (GO), Brazil. E-mail: isaalvesfisio@gmail.com. Orcid: 0000-0002-7183-2192
[3]Universidade Estadual de Goiás (UEG) – Goiânia (GO), Brazil. E-mail: juliafalves01@gmail.com. Orcid: 0000-0002-9108-6596
[4]Universidade Estadual de Goiás (UEG) – Goiânia (GO), Brazil. E-mail: lindolphoamanda@gmail.com. Orcid: 0000-0001-7724-1943
[5]Universidade Estadual de Goiás (UEG) – Goiânia (GO), Brazil. E-mail: annanogueeira@gmail.com. Orcid: 0000-0001-5605-3863
[6]Universidade Estadual de Goiás (UEG) – Goiânia (GO), Brazil. E-mail: beatrizclima03@hotmail.com. Orcid: 0000-0003-4902-5287
[7]Universidade Estadual de Goiás (UEG) – Goiânia (GO), Brazil. E-mail: brunavianidias@gmail.com. Orcid: 0000-0002-0053-9757
[8]Universidade Estadual de Goiás (UEG) – Goiânia (GO), Brazil. E-mail: jeovana.souza@hotmail.com. Orcid: 0000-0001-6929-1350
[9]Universidade Estadual de Goiás (UEG) – Goiânia (GO), Brazil. E-mail: jhennyferfisio@gmail.com. Orcid: 0000-0003-1726-4478
[10]Universidade Estadual de Goiás (UEG) – Goiânia (GO), Brazil. E-mail: nathalya.pportugal@gmail.com. Orcid: 0000-0001-7801-6035
[11]Universidade Estadual de Goiás (UEG) – Goiânia (GO), Brazil. E-mail: rayssgabrielly25@gmail.com. Orcid: 0000-0002-3083-7173
[12]Universidade Estadual de Goiás (UEG) – Goiânia (GO), Brazil. E-mail: rayssa.msouza@outlook.com. Orcid: 0000-0002-7680-7332
[13]Universidade Estadual de Goiás (UEG) – Goiânia (GO), Brazil. E-mail: robertapaulinoo@gmail.com. Orcid: 0000-0002-5485-6010
[14]Universidade Estadual de Goiás (UEG) – Goiânia (GO), Brazil. E-mail: tania.ft@gmail.com. Orcid: 0000-0002-8776-5991
[15]Universidade Estadual de Goiás (UEG) – Goiânia (GO), Brazil. E-mail: cibellekayenne@gmail.com. Orcid: 0000-0002-5837-297X

Corresponding address: Cibelle Kayenne Martins Roberto Formiga – Av. Anhanguera, 3228 – Goiânia (GO), Brazil – ZIP Code: 74643-010 – E-mail: asardim@hotmail.com –
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de instituição de graduação, local de atuação, formação complementar, produções científicas e participação em eventos. Foram encontrados 47.741 currículos, dos quais 17.864 estavam dentro dos critérios de seleção da pesquisa e foram analisados. Predominaram fisioterapeutas do sexo feminino (75,5%) e da região Sudeste (35%). A maioria é graduada em instituições privadas (75%), realizou pós-graduação *lato sensu* (61,4%) e trabalhou em universidades (30%). Existem diferenças entre os sexos com relação às produções, os eventos e a formação complementar, com o melhor desempenho do sexo masculino (p<0,001) – os graduados em instituição pública têm mais produções, eventos e atividades de formação complementar (p<0,001). Os profissionais graduados em instituições privadas, porém, realizam mais cursos de pós-graduação *lato sensu* (p=0,05). Conclui-se, portanto, que a maioria dos fisioterapeutas pesquisadores do Brasil é do sexo feminino, graduada na região Sudeste, formada em instituições privadas, realizou pós-graduação *lato sensu* e trabalha em universidades. Apesar da maioria feminina, os profissionais do sexo masculino e os formados em instituições públicas apresentam maior quantidade de produções, participações em eventos e formações complementares.

Descritores | Fisioterapia; Indicadores de Produção Científica; Currículo; Pesquisadores.

RESUMEN | El objetivo de este estudio fue analizar el perfil de formación y de producción científica del fisioterapeuta investigador brasileño. Este es un estudio transversal, realizado a partir de búsqueda de currículums profesionales registrados en la Plataforma Lattes del Consejo Nacional de Desarrollo Científico y Tecnológico (CNPq), actualizados en los últimos 5 años. Las principales variables analizadas fueron: género, distribución de fisioterapeutas por Brasil, tipo de institución de grado, lugar de actuación, formación complementaria, producción científica y participación en eventos. Se encontraron 47.741 currículums, de los cuales 17.864 cumplían los criterios de selección del estudio para el análisis. Hubo una mayor prevalencia de fisioterapeutas mujeres (75,5%) y de la región Sudeste (35%). La mayoría son egresadas de instituciones privadas (75%), completaron los estudios de posgrado *lato sensu* (61,4%) y trabajaron en universidades (30%). Existen diferencias entre géneros en cuanto a producciones, eventos y formación complementaria, con el mejor desempeño para los varones (p < 0,001), los egresados de instituciones públicas cuentan con más producciones, eventos y actividades de formación complementaria (p < 0,001). Los profesionales graduados de instituciones privadas, sin embargo, hacen más cursos de posgrado *lato sensu* (p = 0,05). Se concluye que la mayoría de los profesionales de fisioterapia investigadores en Brasil son mujeres, egresadas en la región Sudeste, con formación en instituciones privadas, con estudios de posgrado *lato sensu* y que trabajan en universidades. A pesar de la mayoría femenina, los profesionales masculinos y aquellos que estudiaron en instituciones públicas son los que tienen mayor número de producciones, participaciones en eventos y formaciones complementarias.

Palabras clave | Fisioterapia; Indicadores de Producción Científica; Currículum; Investigadores.

INTRODUCTION

Physical therapy is recognized worldwide as a profession with different functions and complementary to the professions of the health area such as medicine, physical education, and nursing. The practice began to constitute itself as a profession in the 19th century[1], when the first European schools for the training of these professionals emerged. In North America and Oceania, schools of similar formation appeared in the early 20th century[2].

There was an evident growth of this profession, since the professional's name has changed throughout history with the substitution of terms such as "masseuses" by "technicians" and "subordinates of medicine" for professionals with autonomy, diagnostic power and direct action in the patient's treatment[3,4].

In Portugal, the rise of physical therapy occurred in the face of the needs imposed by World War II, and specialized training of a group of professionals who knew how to apply individualized and effective resources for the rehabilitation of former combatants was necessary. The recognition of the profession in Portugal has not yet been fully established, but it has advanced in strides in the last three decades[2]. In Brazil, its initial milestone was Law No. 938, October 13, 1969[5], being recognized as a higher education profession that acts directly in the promotion, prevention, and recovery of health[6].

In the United States, a disproportionate growth of physical therapists is estimated between 2013 and 2020, starting as a period of scarcity followed by an increase in the number of professionals in training[7]. In Brazil, between 1995 and 2015, there was a significant increase in the number of physical therapy courses mainly in private educational institutions, especially in the Southeast region[8]. Consequently, there was an increase in training and scientific production, demonstrating an increase in scientific knowledge and research in Brazil[9].

Among the indicators of quantitative growth of this profession, a higher number of males was observed – which lasted for several years. The process of feminization of this health area, however, has fought stigmas linked to historical and sociocultural contexts, transforming this predominantly masculine scenario over the last times in several countries[10,11].

In the field of professional training, the higher education institution in which physical therapists are trained is a significant factor to be considered. The expansion of the offer of physical therapy courses affected the quality of the professional training process. In the evaluations of the Brazilian Student Performance Exam (*Exame Nacional de Desempenho dos Estudantes* – Enade) and the Preliminary Course Concept conducted by the Brazilian Ministry of Education (MEC), public educational institutions still perform better – even with the conceptual evolution obtained by private institutions. The proportion of insufficient results (or that only reach the minimum criterion) is worrisome, as it calls into question the quality of the bachelor's degree in physical therapy in Brazil[12].

In Brazil, there are 210 million inhabitants[13] and, out of this total, around 240,000 are physiotherapists[14] – representing 1.14 physical therapists per 1,000 inhabitants. There is a significant number of professionals active in the labor market who work at all levels of health care and in all age groups of the Brazilian population. However, it is not enough to only list physical therapists in the labor market; professionals must be qualified to carry out their duties supported by scientific and evidence-based knowledge[15,16].

The undergraduate professional in physical therapy must have qualified theoretical and practical knowledge, present skills and competencies of a critical and socially committed citizen, have the ability to produce qualified scientific knowledge, and to act at the primary, secondary, and tertiary levels of health care[17]. In this respect, the advancement and recognition of physical therapy depend on the significant reflection of its scientific evidence, which attribute credibility and efficacy to its performance and positive results with its interventions[18].

Many obstacles are still identified in the process of research and scientific production in physical therapy. The professionals report deficits both in the curricular matrix of the undergraduate program and in the ability to research, in the synthesis and in the critical evaluation of the literature[19]. Most researcher physical therapists use evidence-based practice only in master and doctorate graduation programs, when they start guiding their professional conduct from scientific reasoning that aims at significant results for clinical practice[20]. Therefore, continuing training and education are necessary to qualify the professional and expand their areas of knowledge and abilities[19].

Physical therapy has been gradually seeking recognition of society and public health policies, and the professional qualification and participation in the scientific environment are significant aspects to be considered. There are still several aspects to be improved, such as the number of researchers, the number of graduate programs and the amount of quality scientific knowledge produced and disseminated[21].

Knowing the profile of Brazilian physical therapists – specifically those focused on the production of scientific knowledge (researchers) – is fundamentally significant in order to identify gaps in training and deficits in the areas of activity and distribution of professionals throughout the country. Therefore, this study aims to analyze the profile of training and scientific production of the Brazilian researcher physical therapist.

METHODOLOGY

This is a cross-sectional observational study, with bibliometric basis, with a sample of 17,864 academic resumes of Brazilian researcher physical therapists registered in the Lattes platform of CNPq. The study included professionals who met the following inclusion criteria: presenting an academic resume on the Lattes platform, being undergraduated in physical therapy at a public or private institution, both sexes. Exclusion criteria were: not presenting the updated academic resume in the last five years (from 2013 to 2018), duplicate curricula by platform update or

with incomplete information about the individual's professional training.

The Lattes Platform of CNPq (http://lattes.cnpq.br/) was selected for the research for the following reasons: to be an official, public, and free instrument to access the academic resume of professionals from all over Brazil; be an instrument with a minimum guarantee of veracity of information, since it is necessary to attest the veracity of submitted data in order to register and to publish the data on the platform; be a platform for integrating databases of resume, research groups, and institutions into a single information system; be a national standard instrument in the registration of the academic life of students and researchers from Brazil; be adopted by most institutions, universities, and research institutes in the country.

Access to the platform was first performed with the following search filter: "physical therapy," doctors and other researchers, Brazilian nationality and academic training/"undergraduate" degree. A total of 47,741 physical therapists' resumes were found available on the Lattes Platform. The sample calculation was performed considering the population of 47,741 resumes, margin of error of 0.5% and 95% confidence interval, resulting in 25,000 curricula that were randomly extracted from the platform and then put on a spreadsheet and analyzed.

After the preliminary analysis, 7,136 resumes with incomplete data were identified and excluded. Thus, a total of 17,864 resumes were analyzed in the study; corresponding to approximately 7.44% of Brazil's physical therapists. It is important to highlight that this cut-out meets the objective of our study, which is based on the analysis of researcher physical therapists, and not on the profile of the physical therapist as a whole.

The resumes were analyzed by raters who already had familiarity in filling out and reading information on the Lattes platform and who received guidance for data analysis and extraction. The following information was extracted for the composition of the database: gender, location (considering the region of training or performance of the physical therapist), date of the last update of the academic resume, type of undergraduate institution, time of graduation, time of training (counted from the year of their training until 2018), other graduations, main institution, number of institutions in which they operate, degrees (specialization, master's degree, doctorate, and post-doctorate), area of specialization, information on CNPq productivity grant, complementary courses, articles published in journals, abstracts published in annals of events, books or book chapters, papers presented at events, number of technical productions, and participation and organization of events.

Regarding ethical aspects, this research did not require ethical approval because there was no contact between researchers and professionals. Furthermore, the identification data (name, address, etc.) of the professionals were not disclosed and kept confidential by the research team.

The collected data were organized in a database for statistical analysis in the Statistical Package for Social Sciences (SPSS – version 23.0) program. For the numerical variables, the calculations of mean, standard deviation, minimum value, and maximum value were performed, and, in categorical, frequency and percentage. In the inferential analysis, the Kolmogorov-Smirnov normality test and the Student's t-test for independent samples were performed, comparing sex with the number of productions and events, and institution with productions and events. Fisher's exact test was performed to compare sex and degrees and the type of institution with the degrees. The comparison between the institution of education and sex was performed with the Chi-square test, considering $p \leq 0.05$ statistical significance level.

RESULTS

After organizing the database with 25,000 academic resumes, 2,397 resumes that had information deficits and/or were duplicated due to platform updates were excluded. Thus, 22,603 resumes were tabulated and 17,864 of them – all updated in the last five years – considered for statistical analysis. Out of the sample, 13,479 (75.5%) were female and 4,385 (24.5%) males. The number and distribution of the researcher physical therapists in the regions of Brazil is reported in Table 1 and Figure 1, and the descriptive characteristics are expressed in Table 2.

Table 1. Number of researcher physical therapists in Brazil

Regions of Brazil	Frequency (%)
North	1005 (5.62)
Northeast	5571 (31.18)
Midwest	1203 (6.73)
Southeast	6259 (35.04)
South	2828 (15.83)
Not informed	998 (5.6)

Source: Elaborated by the author.

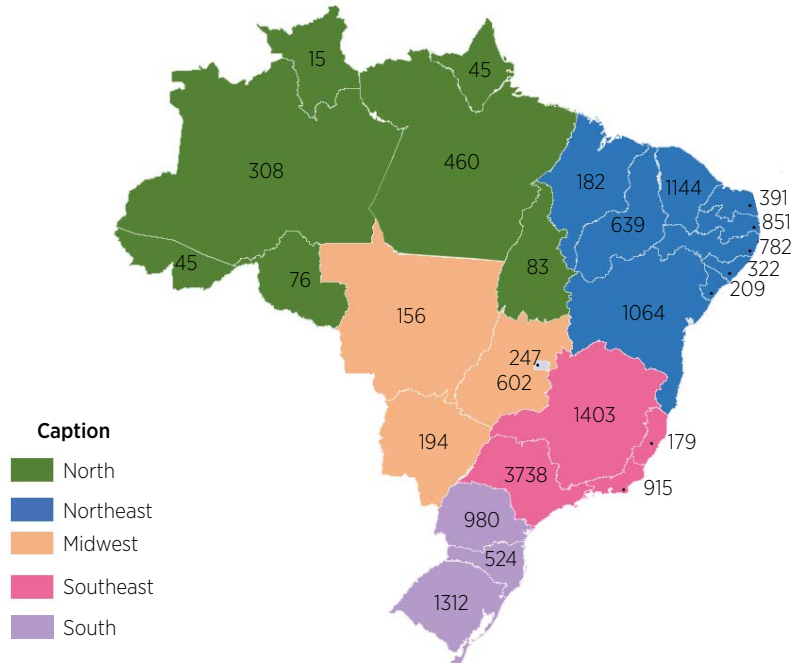


Figure 1. Distribution of researcher physical therapists in Brazil by states and regions
Source: Elaborated by the author.

Table 2. Descriptive characteristics of Brazilian researcher physical therapists

Characteristic	Frequency	%
Education institution		
Private	13348	74.7
Public	4516	25.3
Other Graduations		
Yes	1186	6.6
No	16678	93.4
Main Place of Action		
Not informed	5233	29.3
Hospital	2495	14.0
Clinic	2009	11.2
Sports clubs	58	0.3
University	5301	29.7
Home Care	207	1.2
Academia/Studio	281	1.6
Health Care Center	138	0.8
Companies	240	1.3
Other	1902	10.6
Specialization Graduate Course		
Not performed	6889	38.60
Other areas (not recognized by COFFITO)	3619	20.30
Intensive Care	1235	6.90
Traumatic-Orthopedic	1226	6.90
Respiratory	1135	6.40
Neurofunctional	834	4.70
Manual Therapies	677	3.80
Dermato therapy	572	3.20
Women's health	329	3.80
Gerontology	322	3.80
Cardiovascular system	257	1.40
Sporting	236	1.30

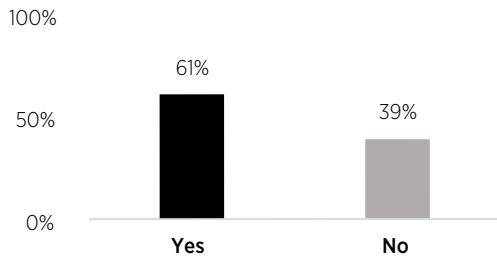
(continues)

Table 2. Continuation

Characteristic	Frequency	%
Physical Therapy at Work	203	1.10
Oncology	131	0.70
Did not inform the graduate area	125	0.70
Aquatic therapy	74	0.40
	Mean (SD)	**Minimum and maximum**
Time since conclusion of undergraduate studies	4.19 (0.93)	2 – 10
Time since graduation	10.00 (7.85)	0 – 50
Number of workplaces that works	1.43 (1.65)	0 – 12
Papers presented at events	7.14 (14.58)	0 – 541
Additional courses	10.72 (11.53)	0 – 181
Published Article	2.26 (8.02)	0 – 301
Published Abstract	5.03 (18.96)	0 – 610
Books or book chapters	0.49 (2.27)	0 – 70
Technical productions	3.09 (10.63)	0 – 423
Participation in event:	17.20 (21.29)	0 – 406
Organization of Events	2.18 (4.89)	0 – 181

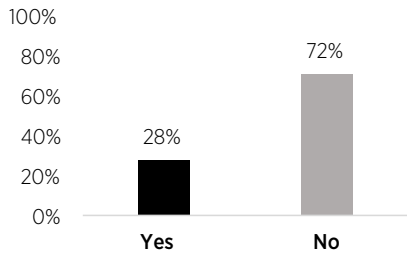
Source: Elaborated by the author.

The results related to complementary formations and receipt of productivity scholarship by CNPq are expressed in Graphs 1-5. Out of the research productivity scholarships, 68 are exclusively in the area of physical therapy and occupational therapy. The comparative analysis between gender, type of institution, academic production, and events is expressed in Table 3, and the comparative analysis between sex and type of institution with degree is expressed in Table 4.



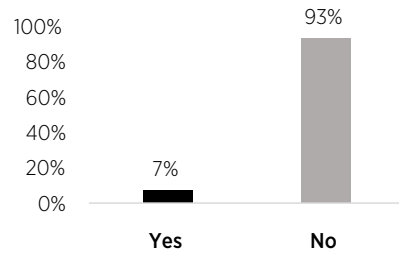
Graph 1. Complementary training of Brazilian researcher physical therapists: Specialization courses

Source: Elaborated by the author.



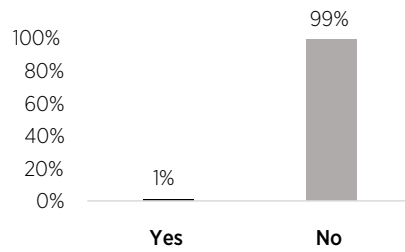
Graph 2. Complementary training of Brazilian researcher physical therapists: master's degree

Source: Elaborated by the author.



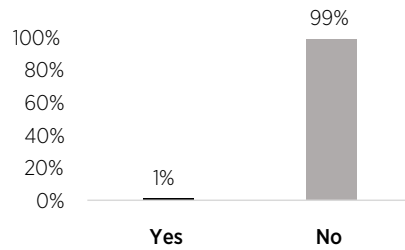
Graph 3. Complementary training of Brazilian researcher physical therapists: doctorate

Source: Elaborated by the author.



Graph 4. Complementary training of Brazilian researcher physical therapists: Post doctorate

Source: Elaborated by the author.



Graph 5. Complementary training of Brazilian researcher physical therapists: CNPq scholarship student

Source: Elaborated by the author.

Table 3. Results of the comparative analysis between gender, type of institution, productions, and events of the professionals surveyed

Complementary Training	Female (n=13479)		Male (n=4385)		p	Public (n=13348)		Private (n=4516)		p
	Mean	SD	Mean	SD		Mean	SD	Mean	SD	
Courses	10.51	11.11	11.35	12.70	<0.001*	11.39	11.78	10.49	11.43	<0.001*
Submitted Work	6.88	14.20	7.92	15.63	<0.001*	9.83	18.60	6.22	12.80	<0.001*
Published Article	1.97	6.70	3.13	11.08	<0.001*	3.17	9.10	1.95	7.59	<0.001*
Published Abstract	4.77	18.56	5.83	20.10	0.001*	7.55	20.41	4.18	18.36	<0.001*
Books and chapters	0.48	2.26	0.53	2.28	0.20	0.65	2.33	0.44	2.24	<0.001*
Technical productions	2.72	9.02	4.25	14.43	<0.001*	3.63	11.42	2.91	10.34	<0.001*
Participation in event:	16.68	20.11	18.79	24.50	<0.001*	19.74	21.74	16.34	21.07	<0.001*
Organization of Events	2.07	4.78	2.54	5.19	<0.001*	2.81	6.02	1.97	4.43	<0.001*

Caption: Sex or institution were compared with productions and events by student's t-test for independent samples, considering p≤0.05. Data were expressed as mean, standard deviation (SD), frequency (f), and percentage (%).

Source: Elaborated by the author.

Table 4. Results of the comparative analysis between gender, type of institution, academic production, and events of the professionals surveyed

Qualification	Female		Male		p	Public		Private		p
	Yes	No	Yes	No		Yes	No	Yes	No	
	f (%)	f (%)	f (%)	f (%)		f (%)	f (%)	f (%)	f (%)	
Specialization courses	8079 (9.9)	5400 (40.1)	2896 (66.0)	1489 (34.0)	<0.001*	2720 (60.2)	1796 (39.8)	8255 (61.8)	5093 (38.2)	0.05*
Master's degree	3579 (26.6)	9900 (73.4)	1408 (32.1)	2977 (67.9)	<0.001*	1597 (35.4)	2919 (64.6)	3390 (25.4)	9958 (74.6)	<0.001*
Doctorate	976 (7.2)	12505 (92.8)	364 (8.3)	4021 (91.7)	0.02*	495 (11.0)	4021 (89.0)	845 (6.3)	12503 (93.7)	<0.001*
Post doctorate	167 (1.2)	13312 (98.8)	71 (1.6)	4314 (98.4)	0.05*	95 (2.1)	4421 (97.9)	143 (1.1)	13205 (98.9)	<0.001*

Caption: A comparison between sex or institution was performed with the degree of the researcher physical therapists was performed by Fisher's exact test, considering the p≤0.05. Data were expressed as mean, standard deviation (SD), frequency (f), and percentage (%).

Source: Elaborated by the author.

Tables 3 and 4 indicate that males have a higher number of courses, scientific productions, papers, articles and abstracts published and participation and the organization of events (p<0.001). Only for the publication of books and book chapters there was no statistically significant difference (p=0.20). Regarding complementary education, there is also a predominance of males in the graduation of specialized studies (p<0.001), master's (p<0.001), doctorate (p=0.02), and postdoctoral studies (p=0.05).

In the comparison between the types of educational institution, it is verified that the physical therapist from public institution develops more productions and participates in more events, presenting significant statistical difference (p<0.001) in all variables analyzed – course, papers, articles and abstracts published, books and chapters, technical productions, participation, and organization of events. For complementary training, specialized graduate studies are usually performed by physical therapists from private institutions (p=0.05); master's, doctorate, and post-doctorate courses are usually performed by physical therapists from public institutions (p<0.001).

The comparison between the type of educational institution and gender was performed by the Chi-square test. The comparative analysis showed a statistically significant difference (p<0.001), with the number of females in the public institution was 3509 (26%) and in the private institution was 9970 (74%); males, in turn, had the presence of 1007 (23%) in the public institution and 3378 (77%) in the private institution.

DISCUSSION

This study surveyed the training profile and scientific production of the Brazilian researcher physical therapists from the CNPq public resumes database. In the last 13 years there has been an exponential increase in the number of physical therapy courses offered in Brazil, with São Paulo (28.18%) and Minas Gerais (12.36%) as the states with the highest number of institutions offering the undergraduate course[22]. However, the rapid growth of these courses increases the inequality in the training of physical therapists in the regions of the country, since

there are variations in the curriculum matrix and in the time of completion of the course[23].

In the states of São Paulo and Paraná, most physical therapists have training in private institutions – 84.5% and 82.2% of professionals, respectively[3]. A descriptive study conducted with 550 higher education institutions in Brazil verified the prevalence of vacancies in private institutions in all regions of the country, representing 87.7% of the total analyzed[22]. According to the data obtained in this study, 74.7% of physical therapists are trained in private institutions, corroborating the studies aforementioned.

The prevalence of private education in physical therapy in Brazil is a reflection of a policy of expansion of higher education, which promoted incentive and release of private education without expansion of the public network. Thus, it is expected that most professionals are undergraduates from the private education system[17], considering that there is a disproportionate supply of vacancies among Brazil's educational institutions: only 4,043 are in public universities, corresponding to 5.86% of the total vacancies available per year[8].

Regarding the complementary training of Brazilian physical therapists, the results of this study are in line with the documentary analysis of Cruz et al.[23], and in the post-graduation of the specific areas of neurofunctional, respiratory, and traumatic-orthopedics are predominant. However, in our study, a considerable percentage (20.3%) held specialization studies in other areas that are not recognized by the Federal Council of Physical therapy and Occupational Therapy (Coffito) such as public health, health administration, health marketing, teaching, among others. It is noteworthy that, according to Coffito data, some specialties have been recognized recently and there are areas that have the older recognition, such as Neurofunctional and Chest physical therapy, recognized since 1998, and Traumatic-Orthopedics, recognized since 2004[24].

The Southeast region receives greater attention in relation to research investments, training professionals more dedicated to research[23]. A study by Treviso et al.[25] shows that physical therapy professors have a greater amount of complementary training – especially in relation to specialized graduate studies.

Despite the evident growth in the last ten years, the demand for master's and doctoral programs is still small. A study conducted with professionals registered in the Paraná Regional Council of Physical therapy and Occupational Therapy of the Eighth Region (Crefito-8) showed that only 47 (12.46%) physical therapists had the master's degrees and 14 (3.7%), Doctoral degree, forming one of the great challenges of the profession: the formation of new researchers, the advancement and development of knowledge[6]. In this context, this study finds that only 28% of the professionals underwent a master's degree, and 7% doctorate.

This study shows that Brazilian physical therapy professionals surveyed work in universities (29.7%), hospitals (14%), clinics (11.2%), and home care (1.2%). However, in the data, 29.3% individuals do not inform the workplace, showing that researcher physical therapists do not have the habit of informing all places of professional activity, since the completion and updating of the Lattes platform is more related to professionals working in research projects and linked to universities throughout Brazil. From this perspective, a cross-sectional study analyzed a sample of 2,323 physical therapists registered at Crefito-3 in the state of São Paulo and found that only 8.3% work in universities; 20.1% in hospitals; 22.6% in clinics, and 35.4% in home care[3]. When comparing these data, it is possible to notice that the predominance of the area of activity for the researcher physical therapists occurs in universities; in the state of São Paulo, physical therapists in home care, and this variable should be considered to differentiate the profile of the national and regional physical therapist with the profile of the researcher physical therapist.

In Brazil, the feminization of the labor market is due to the process of modernization and cultural changes, making 70% of the health professionals are currently female[26]. A survey conducted in São Paulo shows the predominance of 80% of women working as physical therapists in the state[3], and the same occurs with physical therapy undergraduates from the Federal University of Minas Gerais (UFMG), in which 75% are female[27]. The results found are aligned with these statements, stating that 75.5% of the physical therapists in the sample are women.

Analyzing the international aspect, a study conducted in Nepal used a questionnaire with the objective of identifying the challenges and strategies of physical therapy training. The study identified that the lack of encouragement and awareness about the development of this professional is a problem for them to continue the search for learning about the effectiveness of techniques in the area[28]. A study by Ahuja[29], in the UK, indicated the significance of the professionals continuing to specialize and to update themselves after finishing their undergraduate course. It is perceived that there is a difficulty of the professional physical therapist in keeping themselves aware of the literature both nationally and internationally.

A systematic review study conducted by Silva et al.[15] analyzed 12 studies on what physical therapists know about evidence-based practice (EBE) and the difficulties of using it in clinical practice. Most studies have shown that physical therapists have a favorable opinion on the subject, they consider that they need to improve their knowledge and skills in EBE, they also face some barriers that hinder EBE implementation, namely: lack of time, inability to understand statistics, lack of employer support, lack of resources, lack of interest, and lack of results generalization. In this study, it is verified that one of the ways that physical therapists have sought to improve their research training are graduate courses and complementary training courses.

The results and interpretations of this study found limitations regarding the nature of bibliometric research. The Lattes Platform may be updated by the professional at any time and there is no guarantee that the resume information has been published at the same time as the data collection. Another point to be mentioned is the incomplete or inadequate filling of information about technical and bibliographic production and the absence of information on complementary training and area of performance in the academic resume of professionals.

Despite the limitations, it was possible to survey the profile of registered professionals and to identify the panorama of the researcher physical therapists who work in the country. The findings can support investment measures in qualification courses, complementary training, and guidance of professionals to work in deficient areas in different regions of Brazil. Moreover, the study also indicates the need for correct completion of the resume and that professionals keep their information up to date. There are tutorials on the internet teaching step by step how to release the information and is available for free a course promoted by our team on how to properly fill the Lattes academic resume.

The results can support information for the continued training and direction of areas of activity of physical therapists throughout the country, since the deficits regarding geographic distribution, areas of activity, and continuing training have been identified – which may signal the possibilities existing in the market.

CONCLUSION

It is concluded that, in Brazil, there is a prevalence of female researcher physical therapists, concentrated in the Southeast and Northeast regions. These are mostly formed by private institutions, did not perform other undergraduate courses and work in universities. When analyzing complementary training, most professionals underwent specialization courses, mainly in the areas of intensive care and traumatic-orthopedics; the minority underwent master or doctorate courses. Male physical therapists presented a higher demand for complementary training courses and professionals undergraduate in public institutions have higher indicators of scientific papers production, participate in more events and dedicate themselves to master's and doctoral degrees.

AUTHORS' CONTRIBUTIONS

The authors listed below were responsible for the study design, analysis and interpretation of data as well as the review and approval of the final manuscript: Tânia Cristina Dias da Silva Hamu, Cibelle Kayenne Martins Roberto Formiga.

The authors listed below were responsible for collecting, analyzing, and reviewing the literature as well as writing the draft of this article and correcting its final version: Natália Guimarães Melo, Isabela Alves Cunha, Júlia Ferreira Alves, Amanda Lindolpho Santos, Anna Paula Nogueira, Beatriz Correa Lima, Bruna Viani Dias, Jeovana Souza Cardoso, Jhennyfer Gonzaga de Oliveira Rocha, Nathálya Pereira Portugal, Rayssa Gabrielly de Araujo, Rayssa Martins de Souza, Roberta Larissa Oliveira Paulino.

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