

Who are our masters and doctors? Graduate education and professional practice of occupational therapists in Brazil

Quem são nossos(as) mestres e doutores(as)? Formação pós-graduada e atuação profissional de terapeutas ocupacionais no Brasil

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ABSTRACT: Introduction: One of the main demands of occupational therapy in Brazil is its academic institutionalization. Such demand covers, among other aspects, the research activity and the training and performance of occupational therapists in graduate programs. Objective: To characterize occupational therapists who hold MSc and PhD degrees in Brazil considering their graduate training and the places of professional performance. Methodology: The research was based on information collected on electronic platforms such as the Lattes Platform and the Sucupira Platform, among others. Data were analyzed by descriptive statistical analysis. Results: 1,188 curricula of occupational therapists with master's and/or doctorates were analyzed. The number of MSc and PhDs has increased in the last two decades (2000-2017) and the profile of the graduate training of these professionals is undergoing changes, which has effects on the production of knowledge and in the academic institutionalization of the area. Conclusion: This research allowed us to identify some implications of this training for the development of occupational therapy as a profession and as an area of knowledge in Brazil.

Keywords: Education, graduate; Research; Occupational therapy; Education, higher; Brazil.

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RESUMO: Introdução: Uma das principais demandas da terapia ocupacional brasileira é a sua institucionalização acadêmica. Isso abrange, entre outros aspectos, a atividade de pesquisa, a formação e atuação dos profissionais em programas de pós-graduação. Objetivo: Caracterizar os terapeutas ocupacionais mestres e doutores no Brasil quanto a formação pós-graduada e a atuação profissional. Procedimentos Metodológicos: A pesquisa foi realizada a partir de informações coletadas em plataformas eletrônicas como a Plataforma Lattes e a Plataforma Sucupira, entre outras. Os dados foram analisados por meio da análise estatística descritiva. Resultados: 1.188 currículos de terapeutas ocupacionais com mestrado e/ou doutorado foram analisados. Identificou-se um aumento na quantidade de mestres e doutores nas duas últimas décadas (2000-2017) e que encontra-se em curso uma mudança de perfil da formação pós-graduada desses profissionais, o que implica na produção de conhecimento e na institucionalização acadêmica da área. Conclusão: Esta pesquisa permitiu identificar algumas implicações dessa formação para o desenvolvimento da terapia ocupacional enquanto profissão e como área de conhecimento no país.

Descritores: Educação de pós-graduação; Pesquisa; Terapia Ocupacional; Educação superior; Brasil.

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INTRODUCTION

One of the priorities of occupational therapy in Brazil nowadays is the development of research by considering its potential contribution to professional training and for the provision of services to the population. Given this context, to know the training process of occupational therapists and their insertion in graduate programs is critical.

The training pathways experienced by occupational therapists in their graduate programs have influenced the establishment of the profession in Brazil¹ and of research activity in the field²⁻⁴. These professionals approached graduate programs both by the need to produce knowledge capable of facing professional demands^{1,5} and the demand for training qualified professors to teach undergraduate courses⁵⁻⁷. In Brazil, the first occupational therapists performed their master's and doctorates degrees during the 1970s and 1980s⁷. The number of professionals with graduate degrees increased significantly in the following decade^{3,8,9}. Given the absence of specific graduate programs in occupational therapy in the country, professionals of the area sought graduate training in related areas for a long time^{1,7,10}.

The establishment of occupational therapy as a field of knowledge is another factor that has contributed to the rapprochement with graduate programs^{1,8,10,11}. Since most of the production of knowledge and research in Brazil occurs through research projects and dissertations and theses developed in graduate program^{8,12} such rapprochement is necessary^{9,13}. Currently, in the national graduate system, administrated by the *Coordenação de Aperfeiçoamento de Pessoal do Nível Superior* (CAPES), occupational therapy and physical therapy are a sub-area of knowledge, that, along with physical education and the speech therapy, compose another area of knowledge that is part of a larger Area of Health within the Sciences of Life¹⁴.

Regarding the organization of areas of knowledge, it is important to highlight that, among other things, it is related to the ability of its researchers to develop scientific knowledge through the production of theories and technologies associated with national demands, as well as to participate in the targeting of political, scientific and social activities of the country and, especially, to train researchers seeking to support and develop these actions¹⁵.

Given this context, the first attempts to insert occupational therapy as a knowledge in graduate studies occurred by the end of the 1990s¹⁰. Due to the difficulties in creating programs, some professionals sought to

compose the faculty of graduate programs in other areas of knowledge during the beginning of the 21st century^{3,8,13}. Since then, the number of advisors in related areas, such as rehabilitation sciences, education and special education^{2,3,8} has increased, as well as in the first and only Brazilian program focused on the area, the Graduate Program in Occupational Therapy (PPGTO) of Universidade Federal de São Carlos (UFSCar)⁵.

The establishment of the area requires the training of researchers to develop it¹⁵, which makes the survey of information about the training of occupational therapists in the country fundamental. Following this idea, Emmel and Lancman⁷ conducted one of the pioneering studies, entitled: “*Quem são nossos mestres e doutores? O avanço da capacitação docente em Terapia Ocupacional no Brasil*” (Who are our master's and doctors? The development of the training of Occupational Therapy professors in Brazil). From the 21st century, this monitoring has been made mainly using the data available at *Plataforma Lattes* of the *Conselho Nacional de Desenvolvimento Científico e Tecnológico* (CNPq), where the quantitative increase of the training of professionals at master's and doctoral level is being observed. In 1996 there were 29 occupational therapists with master's degrees and 7 with doctoral degrees⁷. In 2010 there were 41 MSc and 91 PhDs recorded, in addition to 16 doctoral students². Later, in 2013, 88 PhDs and 19 postdoctoral researchers were identified⁸. The number of MSc was not presented in the latter survey.

Although the studies cited above present data that reveal the quantitative growth of graduate training, they do not show information about the evolution of the training process with regard to the field of knowledge. In addition, these studies do not show information about where the students underwent their training or the where they perform professional practice, mainly regarding their distribution over the country⁴. Thus, in this study, we sought to answer the question: Who are the occupational therapists who have masters and doctoral degrees in Brazil and what has changed in the past two decades regarding graduate training?

To answer this question our specific objectives were: 1) To quantitatively identify Brazilian occupational therapists with master's and doctoral degrees; 2) To identify these professionals with regard to their training in graduate school: year of completion, Higher Education Institution (HEI), Federative Unit, Region and country of the graduate program; and 3) To identify the Federative Unit and Region where these professionals work.

METHODOLOGY

This is an exploratory descriptive study with a quantitative approach. This type of research has been widely used in previous studies to map the graduate training of Brazilian professionals^{2,4,8,9,16}.

Sample

The sample was composed by curricula of occupational therapists with masters and doctoral degrees registered in the Lattes Platform of CNPq. This platform integrates an information system with data on curricula, research groups and institutions¹⁷. Following, the information obtained in the identified curricula were confirmed and complemented by accessing to the *Catálogo de Dissertações e Teses* (Catalogue of Thesis and Dissertations) of CAPES. This catalogue aims to facilitate access to information about thesis and dissertations that were defended in Brazilian graduate programs¹⁸. The Sucupira Platform was used for obtaining information about the graduate courses and programs, which, among other information, provides data on the courses that have been evaluated and recognized by CAPES¹⁹. The E-MEC Platform was also accessed. This is an official database on HEI and undergraduate and graduate courses of the Brazilian Federal Education System²⁰.

Curricula of professionals with ongoing master's degree and of professionals whose undergraduate degree was not obtained in occupational therapy were excluded. Although previous studies were limited the survey to professors⁷, PhDs⁴ or participation in research groups^{2,3,8,9,16}, this study opted for not adopting temporal or conditional restrictions to achieve a broader survey.

Procedures for data collection

Data were collected by a single researcher from December 15, 2017 to January 05, 2018. This process encompassed four steps.

In the **first step** the search in the Lattes platform was performed to identify masters and doctorates. For such, the following descriptors were used – in Brazilian Portuguese –, “*Terapia Ocupacional*” (Occupational Therapy) and “*Terapeuta Ocupacional*” (Occupational therapist) in the *Assunto* (Subject) field, added to the filter marking *Educational degree* with the options of “Master’s” and “Doctorate” and the filter *Federative Unit*. First, the MSc in each state of the country were searched and then, the PhD. This strategy was adapted from the

study by Vasconcelos et al.⁴.

In the **second step** the search was made using the *authors' names* or the *titles of the dissertations and thesis* in CAPES' Catalogue of Thesis and Dissertations, to confirm any conflicting or unclear information about the degrees concluded, the graduate programs or the HEI where the professionals conducted their studies. This catalogue was also used to find graduate professionals whom were not identified in the previous step due to not updating their curriculum or any possible problem in the system. For such, the terms “*Occupational Therapy*” and “*Occupational Therapist*” were used in the catalogue's search tool, again in Brazilian Portuguese. If a professional who was not found in the previous step was identified, *his/her name* was searched in the Lattes Platform. A previous research also used the thesis database to identify potential professionals who have completed master's or doctoral degrees³.

The **third step** encompassed the collection of data about graduate programs on the Sucupira Platform. The option *Cursos Avaliados e Reconhecidos pela CAPES* (Evaluated and Recognized Courses by CAPES) was used in this platform. Following, based on identification of the state and HEI where the professionals obtained their master's or doctoral degree, information on the programs were searched using the filter “*Region*”.

The **fourth step** comprised the search to identify the legal nature of the HEI identified in the E-MEC Platform (public and federal, public and state and private). When information about the HEI was not found on this platform, these data were searched on the websites of the institutions.

The information obtained were: a) Lattes curriculum: date of the last update of the curriculum; Name; Gender, Year, HEI, state, Region and Country where the undergraduate and graduate degrees were obtained, title of the dissertation or thesis; name of the graduate program; current professional activity, year of start, state and Region; b) Sucupira Platform: Basic Area and Evaluating Area of the Program and Functioning Situation; c) E-MEC Platform and institutional websites: Legal status of the HEI.

Based on years of undergraduate and graduate, 2017 was taken as reference and the *time since obtaining the undergraduate degree*, the *time since obtaining the master's degree* and the *time since obtaining the doctoral degree* were calculated. These intervals were calculated by the difference between the reference year (2017) and the year of completion of undergraduate studies, master's studies and doctoral studies, respectively. In addition, the

time of training between completion of undergraduate and master's degrees, undergraduate and master's and doctoral degrees were also calculated. Following, the means of these times were computed in the master's and doctorate groups.

Data analysis

Data collected were organized into a spreadsheet (Excel software) and quantitatively analyzed by descriptive statistics (absolute and relative frequency). For the temporal analysis, data were grouped in the following periods: 1960-1969; 1970-1979; 1980-1989; 1990-1999; 2000-2009 and 2010-2017.

RESULTS

From the application of the established search strategies and inclusion and exclusion criteria, 1,188 curricula of occupational therapists with *stricto sensu* graduate degrees were included. We identified that 17.59%

(n=209) curricula had not been updated in the last three years prior to data collection (from 2015 to 2017) and only 10.61% (n=126) were not updated in the last five years.

Data on the graduate type and region of professional performance of occupational therapists with masters and doctorate degrees found in 1,188 curricula are presented below. Until December 2017 there were 859 MSc and 329 PhDs in Brazil. We found that 93.35% (n=1118) are professionals of the female gender and 6.65% (n=79) are males. The year of 1970 recorded the first master's degree obtained by an occupational therapist in Brazil. The first PhD was obtained in 1981. The gradual increase in the training of MSc only occurred by the end of the 1980s, and of PhDs in the 1990s (Figure 1).

The first 15 years of the 21st century showed significant increases in the graduate training of occupational therapists, period in which approximately 90% of the current number of MSc and PhDs obtained their degree (Table 1). A relevant number of students in doctoral training was also identified (179).

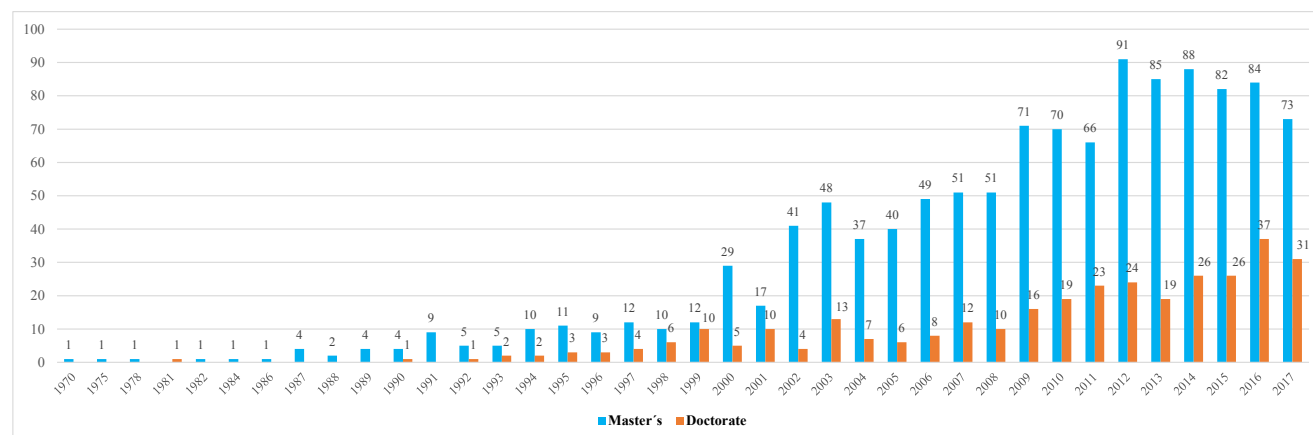


Figure 1: Distribution of occupational therapists with graduate degree based on the year of completion

Table 1. Distribution of absolute and relative frequencies of occupational therapists with MSc and PhD, considering the period of completion

Periods	MSc (AF)	MSc (RF)	PhD (AF)	PhD (RF)
1970-1979	3	0.26	0	0.00
1980-1989	13	1.11	1	0.30
1990-1999	87	7.40	32	9.73
2000-2009	434	36.90	91	27.66
2010-2017	639	54.34	205	62.31
Total	1176*	100	329	100

Caption: AF: Absolute Frequency; RF: Relative Frequency; MSc: Master's; PhD: Doctorate.

Note: *12 occupational therapists performed a direct PhD; thus not undergoing a master's program.

Regarding the professional practice (time since obtaining the undergraduate degree) and graduate training time (time since obtaining the MSc and/or PhD), it was observed that, for PhDs, the mean time was 24 years, the mean time for master's was 14 years masters and 7 years for doctorate. For MSc, the mean time was 16 years and 6 years for master's.

Considering the years of completion of undergraduate and graduate students, it was found that the mean time was approximately 10 years between undergraduate and master's completion, 7 years between master's and doctorate completion, and 17 years between undergraduate and doctorate completion.

Table 2 presents data on the place where students performed their graduate studies. We found that 63.78%

(n=750) obtained a master's degree and 73.86% (n=243) the doctoral degree in institutions in the Southeast Region. On the other hand, in the Midwest region 2.38% (n=28) of

occupational therapists obtained their master's degree and 1.82% (n=6) their doctoral degree in the region.

Table 2. Distribution of occupational therapists with graduate degree in Brazil regarding the place where conducted their graduate studies and current location of professional practice

Place	MSc (AF)	MSc (RF)	PhD (AF)	PhD (RF)	PP (AF)	PP (RF)
Brazil	1176*	100	329	100	988**	100.00
North	70	5.95	6	1.82	78	7.89
Acre	0	0.00	0	0.00	1	0.10
Amapá	2	0.17	0	0.00	2	0.20
Amazonas	2	0.17	0	0.00	3	0.30
Pará	66	5.61	6	1.82	70	7.09
Rondônia	0	0.00	0	0.00	0	0.00
Roraima	0	0.00	0	0.00	0	0.00
Tocantins	0	0.00	0	0.00	2	0.20
Northeast	183	15.56	32	9.73	196	19.84
Alagoas	14	1.19	0	0.00	21	2.13
Bahia	21	1.79	5	1.52	15	1.52
Ceará	56	4.76	6	1.82	48	4.86
Maranhão	16	1.36	3	0.91	20	2.02
Paraíba	3	0.26	1	0.30	21	2.13
Pernambuco	66	5.61	15	4.56	55	5.57
Piauí	0	0.00	0	0.00	2	0.20
Rio Grande do Norte	5	0.43	2	0.61	1	0.10
Sergipe	2	0.17	0	0.00	13	1.32
Midwest	28	2.38	6	1.82	39	3.95
Mato Grosso	2	0.17	0	0.00	2	0.20
Mato Grosso do Sul	11	0.94	0	0.00	7	0.71
Goiás	6	0.51	0	0.00	5	0.51
Distrito Federal	9	0.77	6	1.82	25	2.53
Southeast	750	63.78	243	73.86	548	55.47
São Paulo	591	50.26	196	59.57	364	36.84
Rio de Janeiro	42	3.57	15	4.56	57	5.77
Espírito Santo	9	0.77	3	0.91	17	1.72
Minas Gerais	108	9.18	29	8.81	110	11.13
South	109	9.27	20	6.08	125	12.65
Paraná	28	2.38	5	1.52	46	4.66
Rio Grande do Sul	63	5.36	14	4.26	65	6.58
Santa Catarina	18	1.53	1	0.30	14	1.42
International	36	3.06	22	6.69	2	0.20

Caption: AF: Absolute Frequency; RF: Relative Frequency; MSc: Masters; PhD: Doctorate; PP: MSc and PhDs with current professional performance record; Note: * 12 occupational therapists performed a direct PhD; thus not undergoing a master's program. ** 179 MSc and 21 PhD did not present information about their current professional activity; thus, not being included in this variable.

Regarding the universities, federal HEI were found to be the most prevalent for master's degrees (47.53%, n=559) when compared to state (29.93%, n=352), private (19.47%, n=229) and international (3.06%, n=36). For doctorate degrees, a greater balance between federal (43.47%, n=143) and state (40.73%, n=134) HEI was found, however, some private (9.12%, n=30) and international (6.69%, n=22) institutions were also identified.

Approximately 82% (n=988) of the curricula consulted and presented in Table 2 presented information on the current professional activity of occupational therapists. This allowed the state and Region where they perform to be found. Through these data, we found that the Southeast Region concentrates most MSc and PhD in professional practice (55.47%, n=548), followed the Northeast (19.84%, n=196) and South (12.65%, n=125) regions. The North (7.89%, n=78) and Midwest (3.95%, n=39) regions present the fewest professionals with graduate degree.

Occupational therapists have performed their courses in several research areas. Regarding Master's programs, Table 3 presents the programs and evaluation areas in which they occurred most often. Until 2017, 1176 masters were concluded in 237 different graduate programs. However, the fact that 11 programs trained about 45.92% (n=540) of MSc stands out. Non-specific programs of the profession that trained the most occupational therapists in Brazil were education, public health, rehabilitation sciences and psychology. We observed diversity in training when considering master's programs, since no program alone trained more than 10% of MSc.

Regarding the evaluation areas (Table 3), we identified 83.84% concentration in 11 areas. The areas of physical education, public health, education and interdisciplinary gathered around 61% of master's programs. With regard to HEI, master's programs were conducted in 153 different HEI, considering that 10 HEI trained about 60.54% (n=712) of MSc. Seven of these institutions are located in the Southeast region, two in the Northeast and one in the North of the country. Universidade de São Paulo (15.65%, n=184) and Universidade Federal de São Carlos (12.41%, n=146), located in the Southeast region, trained the most MSc in Brazil. Universidade

Federal de Pernambuco (3.15%, n=37) and Universidade de Fortaleza (2.38%, n=28) were the main institutions in the Northeast and Universidade Federal do Pará (3.74%, n=440) in the North of the country.

Regarding doctoral degrees (Table 3), until 2017 there were 329 concluded degrees conducted in 86 graduate programs. Ten programs trained 55.49% (n=182) of doctorates. None of the ten most frequent programs is specific for occupational therapy. Non-specific programs that trained the most occupational therapists were education, special education, collective health, public health and health sciences.

Regarding the evaluation areas (Table 3), we identified 84.50% (n=278) concentration in ten areas. The areas of evaluation of education, psychology, collective health, medicine II and medicine I corresponded to 66.57% (n=219) of the training of doctorates. Doctoral programs were held in 57 different HEI, considering that 11 HEI trained about 72.04% (n=237) of doctorates. Seven of these are in the Southeast Region and there is one in each of the other regions of the country. As in the number of MSc, Universidade São Paulo (26.14%, n=86) and Universidade Federal de São Carlos (12.16%, n=40) granted the most doctoral degrees in Brazil. Universidade Federal de Pernambuco (2.43%, n=8), Universidade Federal do Rio Grande do Sul (2.13%, n=7), Universidade Federal do Pará (1.82%, n=6) and Universidade de Brasília (1.82%, n=6) were the main training institutions in the Northeast, South, North and Midwest Regions, respectively.

Regarding the training pathway of occupational therapists in the most frequent programs over time (Figure 2), it was found that master's programs on public health, education, special education and psychology prevailed until the end of the 1990s (Figure 2A). In the following decade, training programs on rehabilitation sciences and health sciences also became frequent. From 2010, graduate programs in occupational therapy and rehabilitation sciences can be highlighted. Regarding the prevailing evaluation areas (Figure 2B), we observed the growth of areas of physical education, interdisciplinary and collective health and the decrease in programs related to the areas of psychology and education.

Table 3. Distribution of master's and doctoral degrees concluded regarding the name of the programs and the most frequent evaluation areas

MSc Programs	AF	RF	PhD Programs	AF	RF
Education	92	7.82	Education	37	11.25
Occupational Therapy	79	6.72	Special Education	25	7.60
Collective Health	70	5.95	Collective Health	23	7.01
Rehabilitation Sciences	63	5.36	Public Health	20	6.10
Psychology	61	5.19	Health Sciences	17	5.17
Special Education	44	3.74	Medical Sciences	13	3.95
Public Health	43	3.66	Psychology	13	3.95
Health Sciences	29	2.47	School Psychology and Human Development	12	3.65
Gerontology	25	2.13	Rehabilitation Sciences	11	3.34
Psychiatric Nursing	17	1.45	Nursing	11	3.34
Production Engineering	17	1.45	-	-	-
Total	540	45.92	Total	182	55.49
MSc Evaluation Area*	AF	RF	PhD Evaluation Area	AF	RF
Physical Education	162	13.78	Education	60	18.24
Collective Health	160	13.61	Psychology	49	14.89
Education	139	11.82	Collective Health	47	14.29
Interdisciplinary	135	11.48	Medicine II	32	9.73
Psychology	131	11.14	Medicine I	31	9.42
Medicine II	80	6.80	Nursing	21	6.38
Nursing	53	4.51	Physical Education	12	3.65
Medicine I	46	3.91	Engineering III	12	3.65
Teaching	28	2.38	Interdisciplinary	7	2.13
Engineering III	26	2.21	Sociology	7	2.13
Engineering IV	26	2.21	-	-	-
Total	986	83.84	Total	278	84.50

Note: *No information on the basic and evaluation areas of 47 graduate programs and of 36 master's programs that were performed abroad were found, as well as for 4 graduate programs and 22 doctoral studies abroad. Therefore, programs that were not found and programs that were not categorized with regard to the basic area and evaluation area. Caption: AF: Absolute Frequency; RF: Relative Frequency.

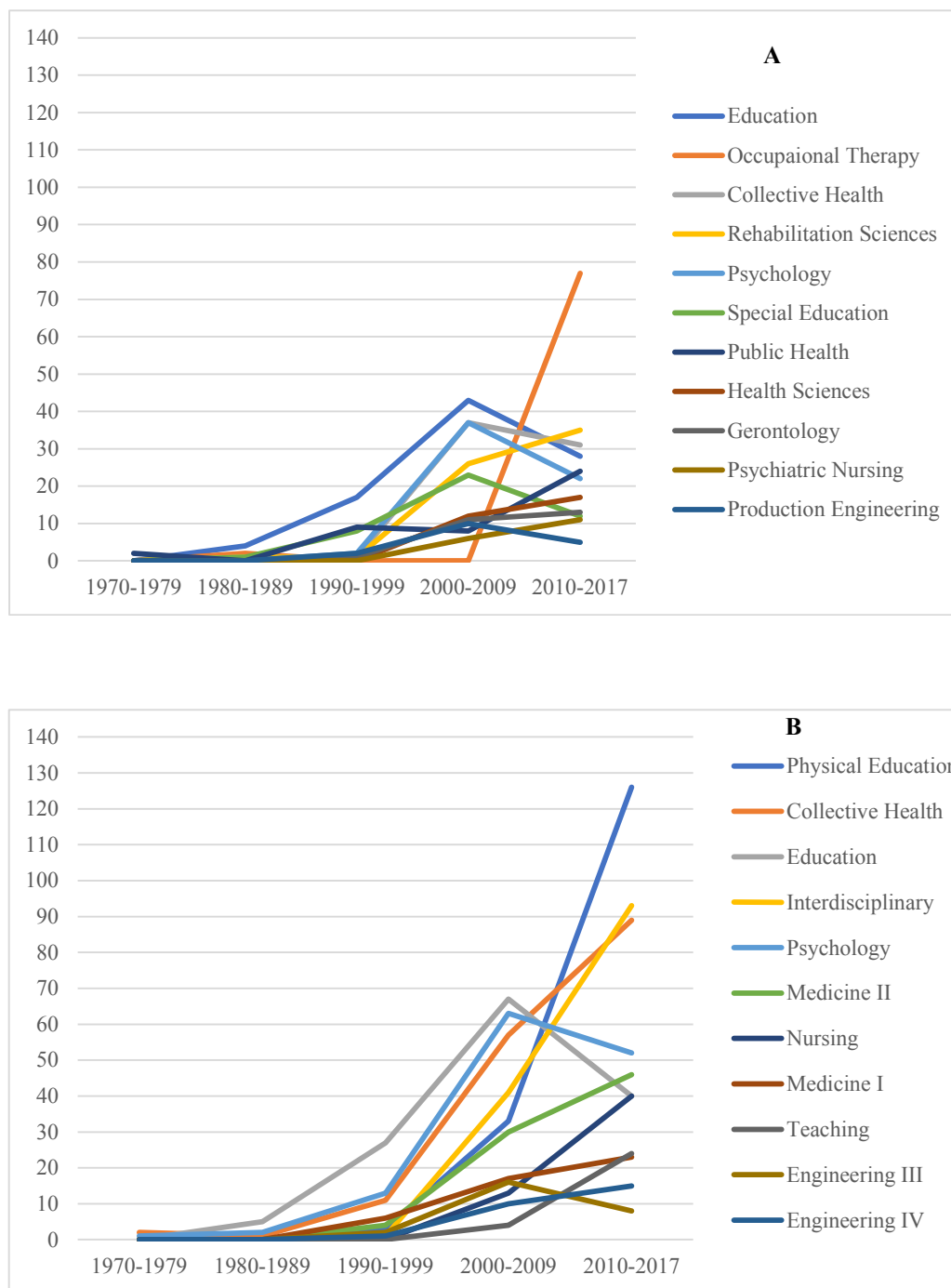


Figure 2. Temporal description of the year of completion of master's and doctoral degrees more frequently performed by occupational therapists considering the different study decades. 2A: Names of master's programs; 2B: Evaluation areas of master's degrees.

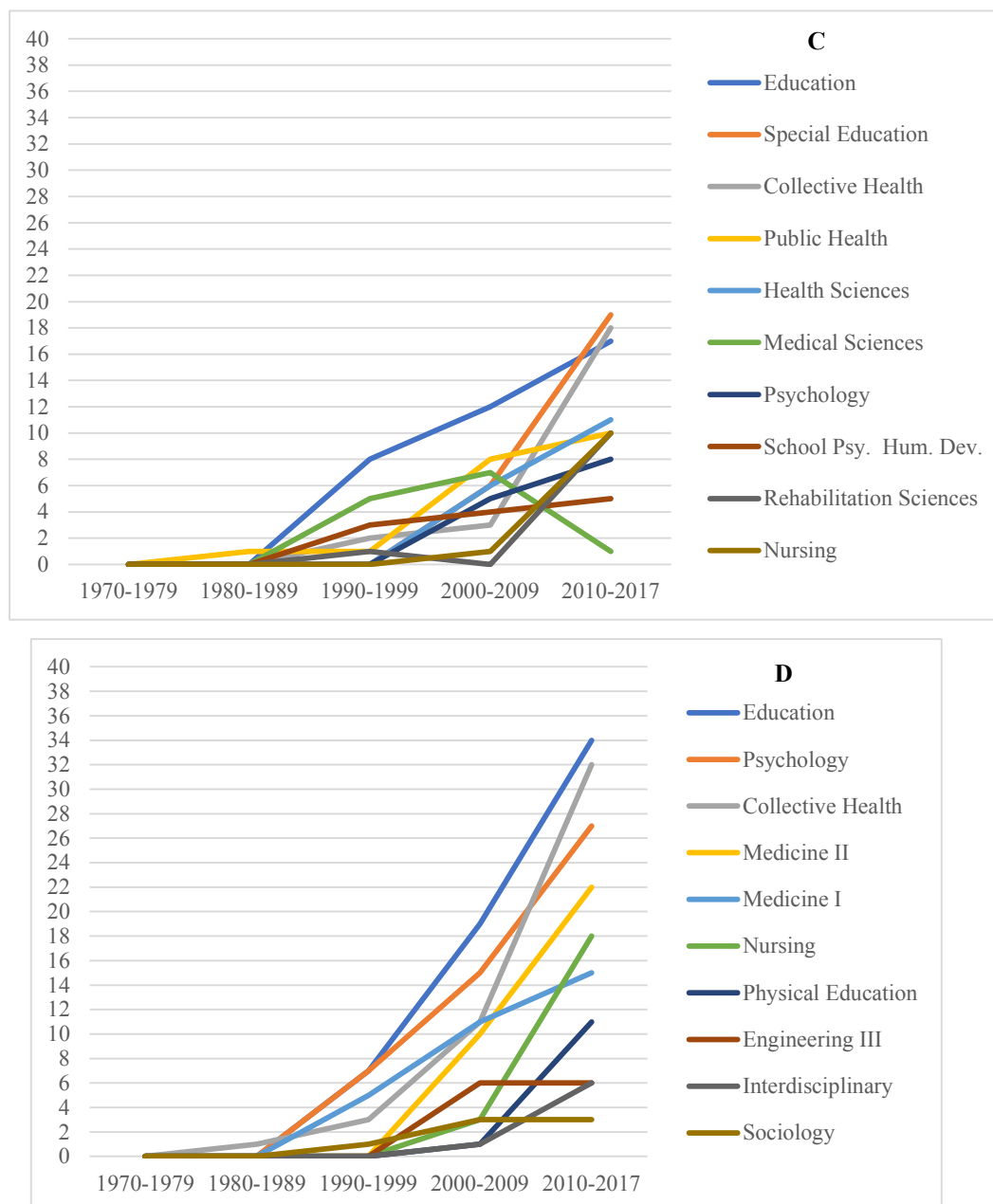


Figure 2. Temporal description of the year of completion of master's and doctoral degrees more frequently performed by occupational therapists considering the different study decades. 2C: Names of doctoral programs; 2D: Evaluation areas of doctoral degrees.

Considering the temporal trajectory of training in the most frequent doctoral programs, we identified that, as for master's programs, the first doctoral program was held in public health. In the 1990s, 32 new doctorates concluded their studies in various programs, highlighting education, medical sciences, school and development psychology and social psychology programs. From the 2010s on, in

addition to these programs, doctoral programs in public health and collective health, health sciences, nursing and rehabilitation sciences were frequent (2C).

Regarding the evaluation areas (2D), training in the education, collective health, psychology and medicine I areas have prevailed. In the 2010s new doctorates have been frequently trained in the areas of nursing and physical education.

DISCUSSION

This study identified that 93% of graduate degrees were obtained by women. This can be explained by women's predominance in the profession. Furthermore, in 2016, when compared to men, a higher proportion of women was found to be enrolled in master's and doctoral programs in Brazil, as well as finishing their degrees²¹.

Considering previous studies and recognizing methodological differences^{2-4,8,9,16}, we identified a significant increase in the number of MSc and PhD. In 1986 two MSc and on PhD and 1996, 29 MSc and 7 PhD⁷. In 2007, there were 20 MSc and 48 PhD¹⁶. These data show a significant growth in graduate training in under 20 years.

Such increase may be related to the greater offer of teaching positions in undergraduate courses in occupational therapy, both in private HEI⁹, and public HEI⁶. This increase may also reflect the demands for better training in the labor market.

We believe that the participation of occupational therapists as professors in graduate programs can be considered as another factor that influenced this expansion. Growth peaks in master's programs were observed in the early 2000s and at the beginning of the following decade. These periods are tied to the enrollment of professionals in rehabilitation sciences programs at Universidade Federal de Minas Gerais and Universidade de São Paulo and in occupational therapy program of Universidade Federal de São Carlos, respectively. This hypothesis has been considered by other authors^{3,5}.

Considering the time perspective, the analysis of such quantitative increase indicates the existence of different rates between master's and doctoral training, since there are many MSc who do not move on to doctoral training. Such aspect may be related to the different purposes of graduate training, where doctoral degrees are related to an academic career while master's degrees may be related to the need for professional updates and specialization, functioning as a path for both the insertion into care services or academia.

The relation between mean professional experience time of PhD (24 years) and MSc (16 years) and the mean research training time of both (7 years for PhD and 6 years for MSc) is an interesting piece of data found in this study. We can note that the area is being formed by people with professional experience but with little experience as researchers. Given this context, some authors have alerted to the need for collectively coordination and intergenerational work for the maintenance and expansion of the knowledge production capacity of the area^{2,8-10}.

Understanding this temporal rhythm is as important as observing that graduate studies occur with different intensity and quantity in the various regions of Brazil and among the states of the same region. The training of MSc and PhD have occurred more intensely in the Southeast, followed by the Northeast, South, North and Midwest regions, which results in a disproportionate distribution on the performance of these graduates in Brazil. We also noted that there are still states that have no graduate professionals or that present a very small number.

This imbalance may be the result of the number of undergraduate courses²⁰ and the number of existing professionals in Brazil, which presents a similar quantitative distribution to that of MSc and PhD in the country. This characteristic may also reflect population, social and economic differences between regions, which lead to differences in opportunities for undergraduate and graduate studies, as well as in insertion in the work places^{2,12}.

One of the main results of this study is related to the characterization of the programs and the evaluation areas where the courses were conducted. Although the diversity in training was found to be important, certain training areas were identified in each region of the country. Additionally, graduate training was understood in this study as something under constant movement, being influenced by factors such as the existence of graduate programs focused on the demands of each region; the ability of diverse professional combination with other fields of knowledge and the creation of specific programs or programs more directly geared to this professional, among others.

The first master's studies occurred especially in programs and areas related to public health, education, special education and psychology, located in the Southeast of Brazil. In recent decades, the most frequent programs and areas in this region were occupational therapy, rehabilitation sciences, education and special education. Programs and areas related to collective health and public health, health and biological sciences and psychology prevailed in other regions of the country.

Variations in prevalence were less evident between the early and most recent decades for doctoral programs. We found an increase in the frequency of researchers trained in programs and fields of education, psychology, public/ collective health and health sciences in all regions of the country. Factors that have influenced the profile change process observed for master's students may not be evident yet in doctoral students.

In general, we can assume that two main factors may be influencing the shifting process in the training of

occupational therapists in graduate studies: the regional diversity and the inclusion of occupational therapists in graduate programs.

Regarding the first factor, this study identified that the growth of graduate training, in the different regions of Brazil, influenced the general profile of programs and areas of training of the MSc and PhD in the country. The composition of graduate programs is known to be focused on meeting research demands from each region¹². As a result, graduate courses present great diversity in the country, especially for master's studies. The offer of graduate courses in each state thus becomes a limiting factor for training opportunities.

The inclusion of occupational therapists as advisors in graduate programs is the second factor believed to have caused substantial influence on the profile change, especially in master's studies: this can be observed by the prevalence of training in programs of the area²¹, specific or not, such as the occupational therapy program of UFSCar and the rehabilitation sciences program of USP and UFMG, as well as in programs of other areas such as bioengineering, nursing, neurology, education and special education. PhDs have also been trained in these programs; however, due to the specific characteristics of a doctoral program they occur less often and present longer completion processes. However, in quantitative terms, we expect that the effects of having occupational therapists as graduate advisors on the area can become more evident from the training of the first doctoral classes at the graduate program in occupational therapy of UFSCar⁵.

Given this discussion, we believe that, in addition to regional diversity, the insertion of occupational therapists in graduate programs is critical in the training of MSc and PhD and in the establishment of the profession in Brazil,

since these researchers are part of the faculty of courses that train other occupational therapists in the different regions of the country. In this sense, the concern shown by other authors about the influence of graduate training on the establishment of the profession in Brazil^{1,10} and on the academic institutionalization as a field of knowledge^{8,11} is corroborated by data highlighted in this study.

CONCLUSIONS

This research identified increasing numbers of MSc and PhDs in the last decade, which represents improvements in the training and inclusion in research activities by occupational therapists in Brazil. The results of this study indicate that the profile of graduate training of occupational therapists is undergoing changes, which may have effects on the production of knowledge and on the academic establishment and institutionalization of the area. This aspect may have direct relation with the existence of undergraduate and graduate courses, with the existence of advisors who are occupational therapists in graduate programs, with the number of MSc and PhDs and with the production of knowledge in occupational therapy. We also found that regional imbalance on the training and performance of MSc and PhDs still occurs.

Finally, data obtained in this study must be analyzed from the perspective of the information sources consulted. The updating and accuracy of the information in the Lattes Platform depend solely of those who are filling and updating their pages. The categorization in decades may have been another limiting factor for identifying changes that might have occurred in smaller time intervals. Similarly, the non-inclusion, due to the lack of information, of some MSc and PhDs in some variables addressed may also have influenced the analysis.

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