

Professional and educational characteristics and geographical distribution of physical therapists in Paraná – Brazil

Características profissionais, de formação e distribuição geográfica dos fisioterapeutas do Paraná – Brasil

Características profesionales, de formación y distribución geográfica de los fisioterapeutas de Paraná – Brasil

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ABSTRACT | This study aimed to know the profile of physical therapists of Paraná in 2015, their sociodemographic characteristics, education tendencies and labor market. This is a quantitative cross-sectional research. The sample was comprised of 377 physical therapists, from the 11,272 professionals subscribed to the Professional Council in 2015, who answered a structured questionnaire available online. The results showed that physical therapists from Paraná are mostly young, aging from 21 to 40 years (81.7%), women (77.7%) and are concentrated in the macro-region of Curitiba (53.6%). The majority has graduated in the last ten years (59.9%) and has a specialization degree (73.7%); however, only a few are masters or PhDs. Most of the therapists (82.8%) work exclusively with their profession, having a single job (53.3%), at a private institution (59.2%), are self-employed (55.7%), having a daily workhour of eight hours (35.5%). Regarding the field of expertise, 68.7% work in more than one area, being Trauma and Orthopedic the one that presents the highest number of professionals (59.9%), followed by Neurofunctional (41.1%) and Respiratory (38.7%) areas. Most of the professionals have a monthly income between the

minimum wage and 4,000 Reais (42.9%). Therefore, it was possible to outline the profile of physical therapists in Paraná in 2015, detecting the profession's identity in the state and the projection of future tendencies, which will enable to the higher education institutions and category representation agencies the creation of future strategies for the designing and regulation of the labor market.

Keywords | Physiotherapy; Health Occupations; Population Surveys.

RESUMO | Este estudo teve como objetivo conhecer o perfil dos fisioterapeutas paranaenses no ano de 2015, suas características sociodemográficas, tendências na formação e mercado de trabalho, em uma pesquisa quantitativa de caráter transversal. A amostra foi composta por 377 fisioterapeutas, dos 11272 inscritos no Conselho Profissional no ano de 2015, que responderam a um questionário estruturado disponível on-line. Os resultados mostraram que os fisioterapeutas do Paraná constituem-se predominantemente por jovens de 21 a 40 anos (81,7%), do sexo feminino (77,7%), e se concentram na macrorregião de Curitiba (53,6%). A maioria graduou-se nos últimos dez anos (59,9%) e possui pós-graduação lato

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sensu (73,7%), porém poucos possuem mestrado ou doutorado. A maioria (82,8%) trabalha exclusivamente com a profissão, em um único emprego (53,3%), em instituição privada (59,2%), como autônomos (55,7%), com carga horária de mais de oito horas diárias (35,5%). Com relação a área de atuação, 68,7% trabalham em mais de uma área, sendo Traumatologia-ortopedia a que apresenta o maior número de profissionais atuantes (59,9%), seguida da Neurofuncional (41,1%) e da Respiratória (38,7%). A maioria dos profissionais tem renda mensal entre o piso e quatro mil reais (42,9%). Assim, foi possível traçar o perfil do fisioterapeuta do Paraná em 2015, vislumbrando a identidade da profissão no estado e a projeção de tendências futuras, o que possibilitará às instituições de ensino superior e às entidades representativas da categoria a criação de estratégias futuras para formação e a regulação do mercado de trabalho.

Descritores | Fisioterapia; Ocupações em Saúde; Inquéritos Demográficos.

RESUMEN | Este estudio tuvo como objetivo conocer el perfil de los fisioterapeutas paranaenses en el año de 2015, sus características sociodemográficas, tendencias en la formación y el mercado de trabajo, en una investigación cuantitativa de carácter transversal. La muestra fue compuesta por 377 fisioterapeutas, de los 11272 inscritos en el Consejo Profesional en el año de 2015, que respondieron a un

cuestionario estructurado disponible en línea. Los resultados mostraron que los fisioterapeutas de Paraná se constituyen predominantemente por jóvenes de 21 a 40 años (el 81,7%), del sexo femenino (el 77,7%), y se concentran en la macrorregión de Curitiba (el 53,6%). La gran parte se graduó en los últimos diez años (el 59,9%) y posee postgrado lato sensu (el 73,7%), sin embargo, pocos poseen maestría o doctorado. La gran parte (el 82,8%) trabaja exclusivamente con la profesión, en un único empleo (el 53,3%), en institución privada (el 59,2%), como autónomos (el 55,7%), con carga horaria de más de ocho horas diarias (el 35,5%). Con relación el área de actuación, el 68,7% trabajan en más de un área, siendo la Traumatología y la Ortopedia las que presentan el número de profesionales actuantes más grande (el 59,9%), después de la Neurofuncional (el 41,1%) y de la Respiratoria (el 38,7%). La gran parte de los profesionales tienen ingreso mensual entre el piso salarial y cuatro mil reales (el 42,9%). Así, fue posible plantear el perfil del fisioterapeuta de Paraná en 2015, vislumbrando la identidad de la profesión en el estado y la proyección de tendencias futuras, lo que posibilitará las instituciones de enseñanza superior y las entidades representativas de la categoría la creación de estrategias futuras para la formación y la regulación del mercado de trabajo.

Palabras clave | Fisioterapia; Empleos en Salud; Encuestas Demográficas.

INTRODUCTION

Physical therapy is a fairly new profession, if compared with other professions in the health area. The Decree-Law 938 of October 13, 1969 regulates the profession and defines its activities, rights and duties, guaranteeing autonomy¹.

The profession has been growing and developing intensely and expanding scientifically and culturally². In Brazil, in 1970 there were six undergraduate programs and 700 professionals for a population of 90 million inhabitants, representing an average of 0.008 physical therapists per 1,000 inhabitants. Currently, there are 672 undergraduate programs and 220,550 physical therapists for a population of more than 204 million inhabitants, representing an average of 1.08 physical therapists per 1,000 inhabitants³⁻⁵. Demonstrating a growth of 1340% in the ratio of therapists per 1,000 inhabitants.

In the State of Paraná, there are currently 36 undergraduate programs³ and 12,040 professionals⁶

in a population of more than 11 million inhabitants⁷, representing an average of 1.07 physical therapists per 1,000 inhabitants.

The maturity and consolidation of a profession depend on its work components for the broadening and improvement of the available knowledge corpus for the professional performance, in such a way to make it capable of creating guidelines for an efficient and successful professional practice⁸⁻¹⁰.

The category agencies, especially the professional Councils, since they have the role of inspecting the professional performance aiming to guarantee the quality of performed services to society, have the duty of indicating deficiencies and the potential of the professionals who comprise the categories¹¹. For that, it is important that they develop regular research to identify the characteristics of professionals. Such surveys can be used as a subsidy for the Category Councils, Labor Unions and Scientific Associations to develop supporting actions concerning the needs presented by

the category in search of professional identity, valuing and recognition. Besides guiding the Higher Education Institutions concerning the labor market and the profession's needs, in order to educate professionals more qualified, aiming to offer better services to society.

Literature shows many studies on the profile of physical therapists of the States of São Paulo¹² and Santa Catarina¹², of the Paraná cities Curitiba¹⁴ and Londrina², and of the ones graduated from the Universidade Federal de Minas Gerais (UFMG), in Minas Gerais state¹⁵. It has also been described the profile in the fields of expertise: Cardiovascular¹⁶, Intensive Care¹⁷, Sports¹⁸ and Researcher⁹. However, there is no research that describes the profile of physical therapists in all Paraná State.

Therefore, this research aimed to know the professional and educational characteristics and geographical distribution of physical therapists in the State of Paraná in 2015.

METHODOLOGY

This is a quantitative cross-sectional research, performed as a partnership between the researchers from the Universidade Federal do Paraná (UFPR) and the Regional Council of Physical Therapy and Occupational Therapy of the Eighth Region (CREFITO 8).

The studied population was the 11,272 physical therapy professionals registered at the Regional Council of Physical Therapy and Occupational Therapy of the Eighth Region (CREFITO 8) until the first six months of 2015. All physical therapists registered at CREFITO 8 were invited to join voluntarily by e-mail, social networks, and institutional site. Before the start of the gathering, the sample size was estimated, which indicated that for this finite population of 11,272 professionals, a 377 sample would be representative having 95% trust and standard deviation of 2%. Therefore, for this study, the first 377 questionnaire answered between May and June 2015, were used, having no sample losses.

This study followed the resolution CNS 466/12 and a favorable license by the Committee of Ethics in Research with Human Beings in the Health Sciences area of the Universidade Federal do Paraná (CEP-UFPR) under the number 1.062.506 of 05/13/2015. The data were gathered through a semi-structured questionnaire, created specifically for that end and based on questionnaires used in similar researches^{9,17,19,20}. The tool was built through the Google Forms application

and comprised of 32 close-ended questions. The professionals received, in the invitation e-mail, the link for accessing the questionnaire. By opening the link, the Informed Consent Form was made available as well as the guidelines for filling the questionnaire.

After obtaining the answers, data were organized into spreadsheets in the Excel 2010 program and the questions were grouped into three main topics: Sociodemographic Profile; Education Profile; and Professional Profile. In the questions concerning the specialization and field of expertise, the criterion used was the terminology proposed by COFFITO for the professional specialty areas, being added the item teaching. The item "others" was used by the researchers for those answers that had the year of specialization conclusion but did not fit in the suggested options.

The numerical variables were rated into: age, with 10-year age groups; year of conclusion (undergraduate, specialization, master's and PhD), with 5-year conclusion periods; and City where the professional lives and works, in macro-regions. The data were analyzed in the statistical package SPSS version 22.0. All results for the professional and sociodemographic profile were described by the absolute and relative frequency. It was tested the association and correlation of the income rate variable to the variables age group, conclusion period, and professional bond; and of the work type to the daily workhour variable using the Chi-square and Pearson correlation tests, respectively, maintaining the estimated statistical significance at 95%.

RESULTS

Sociodemographic characteristics

The study showed that 77.7% of the professionals are women, 81.7% aging from 21 to 40 years. Mostly, 60.2%, have a marital union and 61.5% does not have children or dependents.

CREFITO 8, for the inspection, divides the State of Paraná into four macro-regions, being those: Curitiba, Cascavel, Londrina and Maringá. Each macro-region is composed of the city it is named after and a group of cities around it. In the research, it is observed that most of professionals live in the Curitiba macro-region (53.6%), followed by the Cascavel (19.1%), Maringá (15.1%) and Londrina (11.7%) macro-regions.

Educational characteristics

Table 1 shows the distribution of Paraná physical therapists according to the education and period of undergraduate, specialization and graduate program conclusion.

Table 1. Physical therapists' distribution in absolute (N) and relative (%) frequencies according to the education and period in the programs

Program	Period	N	%
Undergraduate	From 2011 to 2015	106	28.1
	From 2006 to 2010	120	31.8
	From 2001 to 2005	68	18.0
	From 1996 to 2000	35	9.3
	From 1991 to 1995	18	4.8
	1990 before	30	8.0
Total		377	100
Specialization	From 2011 in progress	121	43.5
	From 2006 to 2010	80	28.8
	From 2001 to 2005	48	17.3
	From 1996 to 2000	16	5.8
	1995 before	13	4.7
	Total		278
Master's	From 2011 in progress	16	34.0
	From 2006 to 2010	17	36.2
	From 2001 to 2005	11	23.4
	From 1996 to 2000	3	6.4
Total		47	100
PhD	From 2011 in progress	9	64.3
	From 2005 to 2010	4	28.5
	1995	1	7.1
	Total		14

Descriptive statistics

Concerning the educational institutions, 82.2% of the ones that answered the questionnaire had graduated in private institutions and Paraná institutions were the main educational institutions (87%).

Professionals from Paraná, 73.5%, report having studied or being studying specialization and 11.7% have a professional specialty degree. The distributions of these professionals into specialization areas and professional specialty degrees are shown in Table 2.

Table 2. Physical therapists' distribution in absolute (N) and relative (%) frequencies into specialization area and professional specialty degree

	Specialization Area		Professional Specialty Degree	
	N	%	N	%
Trauma and Orthopedic	72	19.7	17	28.3
Acupuncture	41	11.2	5	8.3
Neurofunctional	32	8.7	4	6.7
Respiratory	32	8.7	5	8.3
Intensive Care	32	8.7	13	21.7
Dermato-functional	30	8.2	5	8.3
Osteopathy	28	7.7	1	1.7
Sports	22	6.0	4	6.7
Labor	22	6.0	5	8.3
Public Health	10	2.7	-	-
Women's Health	6	1.6	0	0
Oncology	4	1.1	1	1.7
Aquatic	4	1.1	-	-
Chiropractic	3	0.8	0	0
Teaching	14	3.8	-	-
Other	14	3.8	-	-
Total	366	100	60	100

Descriptive statistics. The symbol "-" represents the specialty areas for which a degree exam was not yet performed

Characteristics of professional performance

A total of 82.8% of physical therapists work exclusively with the profession, and 14.9% also work outside it.

In addition, 53.3% of professionals reported having a single job, 32.6% having two jobs, 8.2% three, 2.1% more than three and 3.7% alleged to be unemployed.

A total of 59.2% physical therapists work only in private institutions, followed by 19.1% who work only in public institutions and 2.7% who work in philanthropy institutions. The other 14% work in more than one of those three institution types.

The majority, 55.7%, is self-employed, followed by statutory workers who represent 22.5%, hired professionals, who account for 19.1%, segment entrepreneurs, 14.3%, cooperative members represent 2.9% and, lastly, scholarship holders and resident therapists who are 2.1%.

Of the ones in public posts, 62.9% works in municipal institutions, 25.9% in state institutions, 9.5% in federal ones and 1.7% affirmed having more than one public job.

Regarding workhours, 35.5% of physical therapists work more than eight hours, 23.1% eight hours, 24.9% six hours and only 13.8% less than six hours a day.

When associating the work type with the daily workhours, it is observed that those are dependent between each other ($X^2=44.238$ and $p<0.001$). It was observed that the majority, 41.7% of statutory workers and 42.9% of cooperative members, works 6 hours a day; 37% of hired professionals work 8 hours; 48.6% of self-employed, 80.7% of the segment's entrepreneurs and 80% of scholarship holders and resident professionals work 8 hours or more per day.

Most of professionals work in more than one health care level (69.8%), given that 71.6% works on secondary care, 69% on tertiary care, and 49.7% on primary care, besides the other 18% who work as professors.

In the professionals' distribution according to the field of expertise, 259 (68.7%) work in more than one area and 118 (31.3%) work in a single area.

The physical therapists' distribution into field of expertise is described in Table 3.

Table 3. Distribution in absolute (N) and relative (%) frequency according to the professional field of expertise

Field of expertise	N	%
Trauma and Orthopedic	226	59.9
Neurofunctional	155	41.1
Respiratory	146	38.7
Sports	64	17.0
Labor	52	13.8
Public Health	49	13.0
Intensive Care	49	13.0
Dermato-functional	47	12.5
Women's Health	34	9.0
Osteopathy	31	8.2
Acupuncture	26	6.9
Oncology	26	6.9
Aquatic	20	5.3
Chiropractic	6	1.6
Teaching	51	13.5

Descriptive statistics. The percentage estimation considered the total number of interviewees (377) and not the total number of answers, given that each professional can work in more than one area

The majority (78.8%) has their appointments paid by health insurances, with healthcare plans and payments from private clients. Of those, 39.3% receive

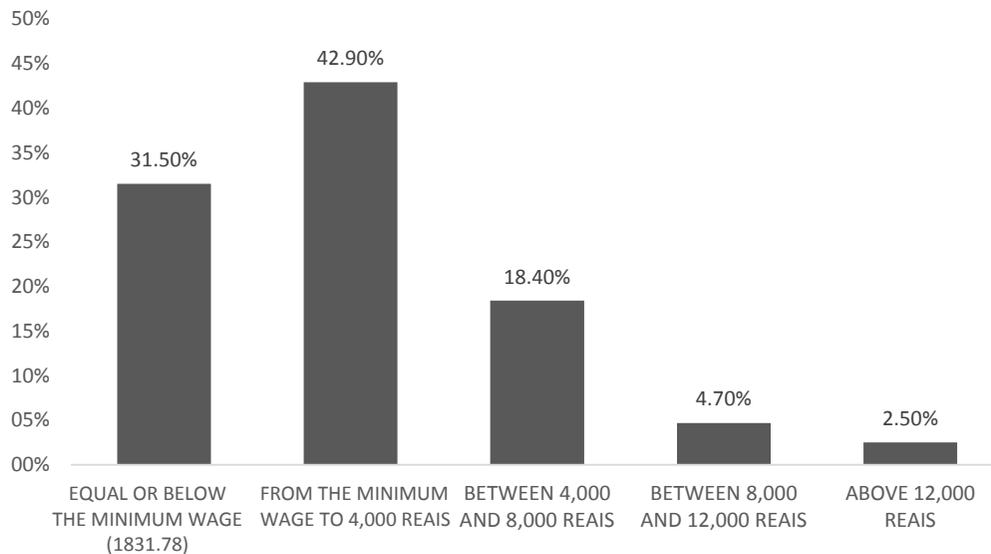
payments only from private clients, 9.5% are paid only by insurances with healthcare plans and 30% are paid by both sources.

These professionals' distribution according to the monthly income is shown in the graph.

When assessing the association between the income and age groups, it was observed that those variables are dependent between each other ($X^2=66.580$ and $p<0.001$) and show positive correlation ($R=0.390$ and $p<0.001$). The same fact is observed by testing the association between income class and period of education represented by the period of undergraduate conclusion ($X^2=108.733$ $p<0.001$, $R=0.492$ and $p<0.001$). In the income class equal or below the minimum salary, the professionals aging from 21 to 30 years (66.4%) and studied from 2011 to 2015 (48.7%) predominate. In the income class that ranges from the minimum salary to 4,000 Reais, there is a higher concentration of professionals aging from 21 to 30 years (48.7%) and who graduated from 2006 to 2010 (38.3%). Of the ones who earn from 4,000 to 8,000 Reais, the majority, 36.4%, ages from 31 to 40 years and have graduated from 2001 to 2010 (50%). Those who are in the income class between 8,000 and 12,000 Reais age mostly from 31 to 40 years (64.7%) and have graduated from 1996 to 2005 (58.5%). Lastly, 55.5% of the ones who earn above 12,000 Reais age from 41 to 62 years and have graduated until 1990.

By analyzing the relation between the type of work, of the ones who have only one job, and the income class, it is verified that the type of work affects the salary ($X^2=106.757$ $p<0.001$). Most of the workers who are statutory or hired have a monthly income between the minimum salary and 4,000 Reais (51.7% and 53.5% respectively); however, the second biggest group of statutory workers (22.4%) earns between 4,000 and 8,000 Reais, while the second biggest group of hired workers (25.6%) has an income equal to or lower than the minimum salary. As for the biggest share of self-employed professionals, they are concentrated on the lowest income class (50.3%) followed by the ones that have an income between the minimum and 4,000 Reais (36.9%). The largest share of the segment's entrepreneurs is concentrated on the income class having the minimum of 8,000 Reais (67.7%), being the only group to achieve the income above 12,000 Reais (19.4%).

Monthly Income



Graph 1. Monthly income

Descriptive statistics: Relative frequency (%) of physical therapists according to monthly income

DISCUSSION

Physical therapists from the State of Paraná are mainly composed of young women. This fact corroborates data from the World Confederation for Physical Therapy that show that, in 2015, in Brazil 70% of the professionals are female²¹, which seems to be related to the moral backgrounds of health care, associated with feminine characteristics^{22,23}.

The fact that most of these professionals are young is related to the education profile, which is justified by the growth in the number of undergraduate programs in Physical therapy offered in Brazil²⁴.

These characteristics are also seen in researches with physical therapists in the Paraná cities of Londrina² and Curitiba¹⁴, in the states of São Paulo¹², Santa Catarina¹³ and with nutritionists in Brazil¹².

The concentration of Paraná professionals in the Curitiba macro-region can be related to the fact that this is the region that has the highest concentration of education institutions in the area.

Most of Paraná physical therapists graduated after 2001 from private institutions, which is also seen in the profile of physical therapists from São Paulo¹⁹ and was also expected as a reflection of the plan for expansion of higher education in Brazil adopted in 1997²⁴⁻²⁶. Such fact can be pointed out as the cause for the higher number of specializations concluded in the last 5 years. However, this

recent expansion in the specializations can also be related to the implementation of multi-professional residencies in health and a bigger implementation of specialization programs²⁷.

The majority of physical therapists (73.5%) chose to take specialization courses, this number is even higher in the State of São Paulo, having 87.7% of professional with any specialization¹² and it is smaller in Santa Catarina, where 52.6% of professionals have a specialization¹³. Although the research shows the low number of master's and PhD professionals, a growth is observed in the last ten years, accomplishing one of the profession's great challenges, which is the education of new researchers and knowledge progress and development²⁸.

The fact that the Trauma and Orthopedic area is the one with more physical therapists working on and also the one with most master's professionals, is a result of the fact that the physical therapist receives, during the education, contents that prevail from the healing rehabilitation model^{12,24}.

Most of professionals still work on secondary and tertiary care, which results from the profession's history; however, a significant number already works on primary care, which is being more recently developed and encouraged by public policies²⁹.

The fact that most professionals have more than one job and work more than 8 hours a day is also observed in a study with physical therapists from Londrina/

PR² and disagrees to the Federal Law that restricts the weekly workhours to 30 hours. Moreover, data show the association between workhours to the work type, showing that liberal professionals (self-employed and entrepreneurs) work more hours a day than statutory and hired workers. Such tendency has been described for professionals in the health segment^{12,13,31}.

Having most of the professionals who answered the survey being self-employed and working at private institutions reaffirms a study performed throughout Brazil that shows that 60% of physical therapists' registries in the National Registry of Health Facilities (CNES) are from private area, given that, in the country's southern region, this value leaps to 76.3%, which confirms the private healing rehabilitation profile of physical therapists previously described in literature²⁴.

Physical therapy is a fairly young profession, if compared to other health-related professions, and its growth in Paraná happened during the last ten years. In this sense, a great number of professionals has been trained since then, thus it is understandable that they have not yet achieved higher income classes³³.

It is considered that, with this research, it was possible to identify the characteristics of physical therapists from Paraná, based on a representative sample, which showed the connection to the healing rehabilitation private thinking that still comes from the characteristics of the profession's creation, and that has not yet suffered great changes in Paraná in the last decades. However, a start in shifting this pattern was observed when noted a growth in the number of professionals working on primary care, besides the growth in the profession's scientific production by the increase of master's and PhD professionals.

Despite the survey being done through an on-line questionnaire easy to be accessed, and although it was announced by all electronic means from Crefito-8, the research shows a limitation for not having used other releasing means than the electronic one. Therefore, it is not possible to affirm that all professionals received the invitation to join the research, given the possibility that a number of professionals may not have internet access and/or not be familiar to it.

CONCLUSION

This study points out that physical therapists from Paraná are majorly composed of young female professionals who have graduated in the last ten years

and have a specialization degree. Most of them works as self-employed professionals and works more than eight hours a day. We also concluded that the age group, education period, and the type of work are significant factors for obtaining a higher monthly income.

The possibilities of exploration of this professional profile are not worn out. We suggest further studies that can complement the data.

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