

Analysis of physical therapy education in Brazil during the COVID-19 pandemic

Análise do ensino em fisioterapia no Brasil durante a pandemia de COVID-19

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Abstract

Introduction: The COVID-19 pandemic brought the need for social distancing as a strategy to control the disease, prompting most countries to temporarily suspend educational activities at all levels. **Objective:** To analyze the status of physical therapy education in Brazilian public and private institutions during the COVID-19 pandemic. **Methods:** A cross-sectional study with professors from physical therapy courses in Brazil. The study was conducted using an electronic form distributed via a social media application, containing questions on the characteristics of the professor, educational institution and work process. Associations were analyzed by the chi-squared test at 5% significance. **Results:** A total of 313 professors from 22 Brazilian states participated, with 62.94% from private institutions and 73.80% reporting that activities were conducted via emergency remote teaching (ERT). Among the professors who shifted to ERT, 63.20% did so with no prior planning and 28.13% had received no training for this teaching format. An association was observed between the type of institution (public or private) and professors' age ($p < 0.001$), sex ($p < 0.001$), teaching experience ($p < 0.001$) and adopting ERT ($p < 0.001$). **Conclusion:** In Brazil, the COVID-19 pandemic prompted most institutions to switch to ERT, more prevalent at private facilities, with no prior planning for the transition from in-person to remote teaching.

Keywords: COVID-19. Higher education. Pandemic. Physical therapy.

Resumo

Introdução: A pandemia de COVID-19 impôs ao mundo a necessidade de distanciamento social como estratégia para o controle da doença, e com isso a maioria dos países suspendeu temporariamente as atividades educacionais em todos os níveis. **Objetivo:** Analisar a situação do ensino de fisioterapia no Brasil, em instituições públicas e privadas, no período da pandemia de COVID-19. **Métodos:** Trata-se de um estudo transversal realizado com docentes de cursos de fisioterapia do país. A pesquisa foi conduzida utilizando-se formulário eletrônico distribuído por aplicativo de mídia social, contendo questões relacionadas às características dos docentes, da instituição de ensino e do processo de trabalho. Para as análises de associação, aplicou-se o teste do qui-quadrado com nível de significância de 5%. **Resultados:** Participaram da pesquisa 313 docentes de 22 estados. Entre os participantes, 62,94% eram de instituições privadas e 73,80% relataram que as atividades foram mantidas na modalidade de ensino remoto emergencial (ERE). Dentre os docentes que passaram a utilizar o ERE, 63,20% informaram que não houve planejamento prévio, e 28,13% relataram que não receberam nenhum tipo de capacitação para esta modalidade de ensino. Verificou-se que houve associação entre o tipo da instituição, pública ou privada, com a idade do docente ($p < 0,001$), sexo ($p < 0,001$), tempo na docência ($p < 0,001$) e adoção do ERE ($p < 0,001$). **Conclusão:** No Brasil, diante da pandemia de COVID-19, a maioria das instituições aderiu ao ERE - mais prevalente nas instituições privadas - e não houve planejamento para a transição do ensino presencial para o remoto.

Palavras-chave: COVID-19. Educação superior. Pandemia. Fisioterapia.

Introduction

In December 2019, the World Health Organization (WHO) was notified of the discovery of a new virus in China, placing healthcare systems worldwide on alert. Coronavirus disease 2019 (COVID-19) is highly transmissible and disseminated rapidly worldwide, leading the WHO to declare a pandemic.^{1,2} Brazil reported the first case of COVID-19 on February 26 in the city of São Paulo, followed by a significant increase in the daily number of cases in the first 50 days of the pandemic.^{3,4}

COVID-19 brought the need for social distancing as a strategy to flatten the pandemic curve, ensure sustainable health care and, primarily, reduce the disease incidence and mortality rates.⁵⁻⁷ As a result, most countries temporarily suspended educational activities at all levels, affecting approximately 8.5 million higher education students in Brazil.⁷

Following the enactment of a National Public Health Emergency⁸, the Brazilian Ministry of Education (MEC) published a series of documents⁹⁻¹² to standardize education in the country during the pandemic and authorized the replacement of classroom-based teaching activities with those using information and communications technologies (ICT), implementing so-called emergency remote teaching (ERT). Practical activities, internships and laboratory work were initially prohibited from being carried out via ERT; however, MEC Ordinance 544/2020¹² subsequently authorized them provided the activities were in line with the National Curriculum Guidelines (NCG) for the relevant course.

The NCG for graduate physical therapy courses¹³ stipulate that 20% of the total course load consist of an internship supervised by professors and that practical activities be carried out at different levels of care. In light of this, and considering MEC Ordinance 544/2020¹², the activities involved in physical therapy training cannot be performed by ERT.

Healthcare personnel should be trained in line with the National Health System (SUS) and based on the needs of the population. During the pandemic, the teaching-learning process has been severely hampered, largely due to the lack of interpersonal contact that is vital to developing the essential skills that these professionals need.¹⁴

In this respect, it is important to determine the status of physical therapy education in the country during this international health crisis. Thus, the aim of this study was to analyze the status of physical therapy education in Brazilian public and private institutions during the COVID-19 pandemic.

Methods

This is a cross-sectional survey study conducted by the Center for Study and Observation in Health Care and Training (NEOFOCUS) of the Universidade Federal do Mato Grosso do Sul. Participants were professors from in-person graduate physical therapy courses.

Sample size was calculated by identifying the number of in-person graduate physiotherapy courses on the Ministry of Education's National Registration System for Higher Education Courses and Institutions (e-MEC)¹⁵, up to 2019, totaling 797 courses. The study population was estimated at 11,955 professors, corresponding to an average of 15 per course underway in the country.

Sample size was calculated using the Open Epi platform, considering the population of 11,955 professors, a 95% confidence interval, 6% margin of error, and outcome prevalence of 50%. In order to obtain a sample compatible with subgroup analysis, 20% was added to the sample, totaling 313 professors.

The web-based survey was conducted in May, using an electronic form containing questions aimed at characterizing the professors, their educational institution and work process. The form was disseminated via the WhatsApp application and data collection concluded when the number of participants estimated in sample size calculations was reached.

The study variables were grouped into characteristics of the professors (age, sex and teaching experience); educational institution (type of institution, use of ERT, shared decision making, training in the use of ICT, and support for ERT); and work process (joint planning among professors, student acceptance of ERT, student skills development, practical and internship activities, perceptions about the quality of their work processes, institutional decisions regarding the activities implemented as well as their own and students' current health status).

Data were analyzed using absolute and relative frequencies with the respective 95% confidence intervals (95%CI). The association between the type of institution and the remaining variables was assessed by the chi-squared test at 5% significance.

This is a public survey study in that participants were invited to express their preference, opinion or meaning and their identity remained confidential. According to National Health Council Resolution 510/2016, opinion polls are exempt from Research Ethics Committee approval.

Results

A total of 313 professors from graduate physical therapy courses in 22 states took part in the survey, 62.94% of whom worked at private institutions.

With respect to personal characteristics, most of the professors from public facilities were aged between 36 and 45 years (50.86%), while a large proportion of those at private institutions were under 35 years old (40.10%), indicating a significant difference ($p < 0.001$). There was also a greater prevalence of professors with less teaching experience at private institutions ($p < 0.001$). In regard to the work process, ERT was adopted by 99.49% of private higher education institutions (HEIs), whereas 69.83% of public facilities suspended all academic activities, representing a significant difference ($p < 0.001$) (Table 1).

Among the professors who taught using ERT ($n = 231$), most reported that there was no planning between the suspension of in-person classes and ERT implementation (63.20%), that the institution provided training in the use of ICT (71.85%), that there was joint planning between professors before the onset of ERT (59.74%), that practical activities and apprenticeships were suspended and the institution provided ERT support (69.69%).

With respect to the students, 73.59% of the professors indicated that they were accepting of remote teaching and 74.45% believed they were partially developing the expected skills. In terms of their own work process, 63.20% of the professors reported that they were unable to maintain the desired level of quality (Table 2).

Discussion

Participants in the present study were professors from graduate physical therapy courses at public and private higher education institutions distributed across the different regions of Brazil. Although the vast majority of these courses are offered at private HEIs, there was a balance between professors from both types of institutions in the study sample.

Studies that characterize professors in Brazilian graduate physiotherapy programs are scarce, and as such, our aim was to understand the profile of the professionals currently working at HEIs in the country. Most of the participants were women, with similar findings reported by other authors.¹⁶⁻¹⁸ Because this is a historical trend in physiotherapy in Brazil, it cannot be said that the number of women in the profession has increased, as observed in the previously male-dominated fields of medicine and dentistry, which now feature a sizeable female workforce.¹⁹

In terms of age, most of the professors were older than 45 years; however, there was a significant difference between those from public and private institutions, with most participants at the former being older than 35 years. Information on age and teaching experience in higher education indicate that professors at public facilities have longer careers that

enable them to acquire greater teaching experience. By contrast, young professors who have little or no teaching experience are predominantly employed by the private sector, with a more informal and less secure employment relationship. This directly affects the quality of their work and the training of future professionals.

Table 1 - Association between the type of higher education institution and the personal, institutional and work process characteristics of survey participants (Brazil, 2020)

Variables	Public HEI	Private HEI	P	n	Total % (95%CI)
	n (%)	n (%)			
<i>Professors' characteristics</i>					
Age					
Under 35 years	15 (12.93)	79 (40.10)	< 0.001	94	30.03 (25.18 - 35.37)
36 - 45 years	59 (50.86)	58 (29.44)		117	37.38 (32.16 - 42.90)
46 - 55 years	29 (25.00)	49 (24.87)		78	24.92 (20.41 - 30.04)
Over 56 years	13 (11.21)	11 (5.58)		24	7.66 (5.18 - 11.20)
Sex					
Women	80 (68.97)	143 (72.59)	0.494	223	71.24 (65.95 - 76.01)
Men	36 (31.03)	54 (27.41)		90	28.75 (23.98 - 34.04)
Teaching experience					
Up to 5 years	13 (11.21)	59 (29.55)	< 0.001	72	23.00 (18.65 - 28.02)
6 - 10 years	20 (17.24)	57 (28.93)		77	24.60 (20.12 - 29.70)
11 - 15 years	24 (20.69)	27 (13.71)		51	16.29 (12.58 - 20.83)
16 - 20 years	33 (28.45)	26 (13.20)		59	18.84 (14.87 - 23.59)
Over 21 years	26 (22.41)	28 (14.21)		54	17.25 (13.43 - 21.87)
<i>Higher education institution characteristics</i>					
Has the institution implemented emergency remote teaching during the pandemic?					
No	81 (69.83)	1 (0.51)	< 0.001	82	26.19 (21.60 - 31.38)
Yes	35 (30.17)	196 (99.49)		231	73.80 (68.61 - 78.39)
Was the decision about suspending classes or adopting emergency remote teaching made collectively by managers, professors and students?					
Yes	53 (45.69)	86 (43.65)	0.726	139	44.40 (38.96 - 49.99)
No	63 (54.31)	111 (56.35)		174	55.59 (50.00 - 61.03)
<i>Work process characteristics</i>					
Do you believe that the institution made the right decision about academic activities during the pandemic?					
Yes	92 (79.31)	188 (95.43)	<0.001	280	89.45 (85.51 - 92.42)
No	24 (20.69)	9 (4.57)		33	10.54 (7.57 - 14.48)
Do you fear for yours and your family's health should in-person classes resume?					
Yes	100 (86.21)	162 (82.23)	0.358	262	83.70 (79.16 - 87.41)
No	16 (13.79)	35 (17.77)		51	16.29 (12.58 - 20.83)
Do you fear for the health of students and their families should in-person classes resume?					
Yes	107 (92.24)	167 (84.77)	0.053	274	87.53 (83.37 - 90.77)
No	9 (7.76)	30 (15.23)		39	12.46 (9.22 - 16.62)

Table 2 - Description of the institutional and work process characteristics of professors who adopted emergency remote teaching during the pandemic (Brazil, 2020)

Variable	n	% (95%CI)
<i>Higher education institution characteristics</i>		
Did professors receive any training on the use of Information and Communications Technology (ICT) for emergency remote teaching?		
Yes, the institution has previously used ICT	58	25.10 (19.90 - 31.14)
Yes, the institution provided training during this period	108	46.75 (40.36 - 53.25)
No	65	28.13 (22.67 - 34.32)
Did the institution provide the necessary support for emergency remote teaching?		
Yes	161	69.69 (63.41 - 75.31)
No	70	30.30 (24.68 - 36.58)
<i>Work process characteristics</i>		
Was there a planning period before emergency remote teaching began?		
Yes	85	36.79 (30.78 - 43.25)
No	146	63.20 (56.74 - 69.21)
Was there joint planning between course professors before emergency remote teaching began?		
No	93	40.25 (34.08 - 46.76)
Yes	138	59.74 (53.23 - 65.91)
Were the students accepting of emergency remote teaching?		
Yes	170	73.59 (67.48 - 78.91)
No	61	26.40 (21.08 - 32.51)
Are students developing the necessary skills in accordance with course objectives?		
Partially	172	74.45 (68.39 - 79.70)
Fully	14	6.06 (3.60 - 10.00)
Not at all	45	19.48 (14.84 - 25.14)
Have practical classes been replaced with emergency remote teaching?		
Up to 20% of the practical course load has been replaced with remote teaching	18	7.79 (4.94 - 12.06)
20 to 40% of the practical course load has been replaced with remote teaching	16	6.92 (4.27 - 11.04)
40 to 60% of the practical course load has been replaced with remote teaching	6	2.59 (1.16 - 5.69)
More than 60% of the practical course load has been replaced with remote teaching	7	3.03 (1.44 - 6.25)
No, practical activities have been suspended	184	79.65 (73.92 - 84.38)
Have internships been replaced with emergency remote teaching?		
Up to 20% of the internship course load has been replaced with remote teaching	31	13.41 (9.57 - 18.49)
20 to 40% of the internship course load has been replaced with remote teaching	12	5.19 (2.96 - 8.95)
40 to 60% of the internship course load has been replaced with remote teaching	4	1.73 (0.64 - 4.55)
More than 60% of the internship course load has been replaced with remote teaching	8	3.46 (1.73 - 6.80)
No, internships have been suspended	176	76.19 (70.22 - 81.27)
Are you able to maintain the desired quality in your teaching activities?		
Yes	85	36.79 (30.78 - 43.25)
No	146	63.20 (56.74 - 69.21)

In recent years, Brazil has seen sharp unregulated growth in the number of new physiotherapy courses, with an increase in the number of places available at private HEIs¹⁵, which may have contributed to their greater adherence to ERT. It is well-known that decision-making processes differ between public and private HEIs, with the former typically operating (or at least expected to) based on democratic principles and shared decisions, which may explain their resistance to abruptly switching to ERT, given its impact on higher education. By contrast, most private institutions in Brazil are large educational conglomerates governed by market logic and the pursuit of profit, which may justify their decision to maintain teaching activities, in order to ensure the payment of tuition, limit dropout rates and prevent financial losses.

Although MEC Ordinance 544/2020¹² clearly stipulates that practical activities and internships should follow course NCG, some institutions have not complied, further weakening the teaching-learning process during the pandemic. This demonstrates the need for discussion as well as better assessment and reassessment procedures for courses post-pandemic, in order to ensure that standards and recommendations aimed at quality education are strictly adhered to.

Replacing classroom-based activities with remote teaching has always been a cause for concern in healthcare education because of the unique and complex aspects involved in developing the essential knowledge, skills and attitudes to equip these professionals to meet the needs of the population in an ethical, competent and socially responsible manner. However, it is important to differentiate between ERT and distance learning, a formal teaching format in Brazil that currently accounts for more than 120,000 authorized places in private learning institutions, according to e-MEC data.¹⁵ Several professional associations, such as the National Health Council and Brazilian Association of Physical Therapy Education, are vehemently opposed to distance learning for graduate courses.^{14, 20-22}

Most participants felt that their institution had made the right decision about suspended activities or adopting ERT, with a significantly higher percentage among those at private HEIs. This is noteworthy, since private sector professors had to abruptly switch to ERT and, according to 63.20% of respondents, with no prior planning. It is important to underscore that ERT was implemented during the semester and does not involve simply transferring previously classroom-based activities to the

virtual arena, but requires a different set of pedagogical tools previously unfamiliar to most of the professors.²³

Another important point is that a considerable number of participants reported no joint planning between professors, which could compromise compliance with Course Pedagogical Projects (CPPs) and the quality of the teaching-learning process, in addition to overburdening both teachers and students with synchronous, asynchronous and assessment procedures. This increases risks to their mental health, already exacerbated by social isolation, fear of contracting the disease and long working hours on computers, smartphones, tablets or other devices.^{5, 23}

It should be noted that some participants received no training in the use of ICT, which may pose a significant challenge since physical therapy professors and those in other healthcare professions typically have no formal pedagogical qualifications and simply replicate the models and strategies that were used when they were students. In other words, most use traditional teacher-centered approaches that focus on merely transmitting knowledge, with students playing a passive, reflexive role involving little critical thinking. This makes it difficult for professors to adapt to the virtual environment, which requires new pedagogical tools and different ways of relating to students, and their lack of knowledge regarding fundamental pedagogical principles means they alternate between new communication tools, compromising learning. The urgency of the current global health crisis should not be used as a precedent to lower quality standards or alter the fundamental objectives of learning.^{23, 24}

This is a critical time for both professors and students, especially those having to deal with digital platforms for the first time. Participants reported good acceptance of ERT among students, but almost 20% felt they were not developing the necessary skills.

In order to optimize synchronous activities such as classes, lectures and meetings under ERT, adjustments must be made in terms of the time and objectives involved. Additionally, diversifying tasks such as group work, videos, games and written texts allows students with different learning styles to feel included.²⁵ Frequent contact with students helps maintain communication to identify problems with access, connection, learning and familiarity with the new tools and is essential in keeping them engaged in the learning process, which now more than ever requires them to play a leading role.²⁵

The fact that professors feel they are unable to maintain the desired level of quality seems to be a natural part of the transition they are currently experiencing. These feelings may also be related to lack of experience, planning and familiarity with digital technology, as well as concerns inherent to teaching, such as recognizing that social inequalities directly impact student access and, consequently, the fair and equal provision of education.²⁶

Conclusion

The results indicate that in the first semester of 2020, most Brazilian higher education institutions implemented emergency remote teaching during the pandemic, which was more prevalent among private facilities. However, there was no planning period before transitioning from classroom-based to online activities.

Although institutional decisions were largely not the result of joint discussions among all stakeholders, most participants felt that the HEI had adopted the best strategy, albeit to the detriment of skills development.

The transition from in-person teaching to ERT is a critical time when both students and professors have to reshape their practices and reconcile different activities, which may have contributed to the high number of participants who felt they were unable to maintain the desired level of quality.

This study is an important reference in that it portrays the status of physical therapy education during a unique global health crisis and provides a theoretical foundation to discuss teaching in this field in Brazil, since no national studies were identified in the literature that describe the profile of graduate physiotherapy professors in the country.

However, it should be noted that the research method used (opinion poll) has certain limitations, such as the inability to obtain more detailed information on certain aspects when the identity of participants is unknown. It is also important to underscore that, given the study objective, no specific questions were asked regarding the professors' work process.

As such, there is a need for primary studies that, in addition to describing the scenario of physical therapy education in the country, aim to analyze and understand the work process of professors in these programs.

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Authors' contributions

Medeiros AA, Batiston AP, Bonilha LAS, Ferrari FP and Barbosa IR contributed to the study conception and design, analysis and interpretation of results, writing and critically reviewing the manuscript and approving the final version, and are responsible for all aspects of the study, including its accuracy and integrity.

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