

Evaluation of physical therapy courses from 2004 to 2013

Avaliação dos cursos de Fisioterapia nos anos de 2004 a 2013

Evaluación de los cursos de fisioterapia de 2004 a 2013

Rogério Fabiano Gonçalves¹, Aline Araújo Gomes Sandes², Isadora Yasmim Monteiro Nascimento², Auxiliadora Renê de Melo Amaral³, Rodrigo Cappato de Araújo⁴, Tarcísio Fulgêncio Alves da Silva⁵

ABSTRACT | This study aimed to evaluate the performance of Brazilian physical therapy courses regarding the concepts obtained in the National Exam for the Assessment of Student Performance (ENADE) from 2004 to 2013, checking it in courses at public and private educational institutions, and the correlation between ENADE score and Course Preliminary Concept (CPC). Cross-sectional quantitative study of documentary basis, conducted with a sample of 103 physical therapy courses that participated in the ENADE assessments conducted from 2004 to 2013. The analysis consisted in evaluating ENADE and CPC concepts, considering their performance ratings over the years. There was an improvement in the ENADE and CPC concepts in the sample ($p < 0.05$). The percentage of courses with insufficient results in ENADE decreased from 26.2% in 2004 to 17.5% in 2013, and 38.8% of the educational institutions obtained concepts above the minimum criterion in 2013, while in 2004 this percentage corresponded to 21.4%. In all ENADE editions, public educational institutions presented better performance than private ones. There was an advance in the ENADE and CPC of physical therapy courses during the investigated period, with a better performance of public institutions compared with private. However, the persistence of high proportion of poor results or that only complied the minimum criterion highlights the importance of the discussion about the training quality of physical therapy bachelor in the country.

Keywords | Educational Measurement; Higher Education; Physical Therapy.

RESUMO | Este estudo objetivou avaliar o desempenho dos cursos de fisioterapia no país quanto aos conceitos obtidos no Exame Nacional de Desempenho dos Estudantes (Enade), no período de 2004 a 2013, verificando o rendimento dos cursos entre as instituições de ensino superior públicas e privadas e a relação das pontuações do exame com o Conceito Preliminar de Curso (CPC). Estudo quantitativo transversal de base documental, realizado com amostra de 103 cursos de fisioterapia que participaram das avaliações do Enade realizadas de 2004 a 2013. A análise constou da avaliação dos conceitos Enade e do CPC por classificações de desempenho ao longo dos anos. Observou-se avanço dos conceitos Enade e CPC na amostra (valor de $p < 0,05$). O percentual de cursos com resultados insuficientes no Exame regrediu de 26,2%, em 2004, para 17,5%, em 2013, e 38,8% das IES obtiveram conceitos superiores ao critério mínimo em 2013, em 2004 esse percentual correspondia a 21,4%. Em todas as edições do Exame as IES públicas apresentaram melhor desempenho do que as instituições privadas. Houve avanço dos cursos de Fisioterapia no Enade e no CPC para o período investigado, com melhor desempenho das instituições públicas em relação às privadas. Porém, a permanência de elevada proporção de resultados insuficientes ou que apenas alcançam o critério mínimo alerta para a importância da discussão da qualidade da formação do bacharel em Fisioterapia no país.

Descritores: Avaliação Educacional; Educação Superior; Fisioterapia.

Study developed at the Universidade de Pernambuco (UPE), Petrolina Campus – Petrolina (PE), Brazil.

¹Assistant Professor at the Universidade de Pernambuco (UPE), Petrolina Campus – Petrolina (PE), Brazil.

²Students of the undergraduate course of Physical Therapy in Universidade de Pernambuco (UPE), Petrolina Campus – Petrolina (PE), Brazil.

³Assistant professor of Universidade de Petrolina (UPE), Petrolina Campus – Petrolina (PE), Brazil.

⁴Associate professor of Universidade de Pernambuco (UPE), Petrolina Campus – Petrolina (PE), Brazil.

⁵Adjunct professor of Universidade de Petrolina (UPE), Petrolina Campus – Petrolina (PE), Brazil.

Corresponding address: Rogério Fabiano Gonçalves – Universidade de Pernambuco, Campus Petrolina, Colegiado de Fisioterapia – BR 203, Km 2, s/n – Petrolina (PE), Brasil – Zip Code: 56328-903 – Phone: (87) 3866-6468/3866-6470 – Email: rogerio.goncalves@upe.br – Finance source: Unfunded study – Conflict of interest: Nothing to declare – Presentation: 7 Nov. 2016 – Accepted for publication: 16 Nov. 2017 – Approved by the Research Ethics Committee: In order to the nature of this study, it was not necessary to submit it to the appreciation of the ethical aspects of scientific research.

RESUMEN | Este estudio objetivó evaluar el rendimiento de los cursos de fisioterapia en el país en cuanto a los conceptos obtenidos en el Examen Nacional de Rendimiento los Estudiantes (Enade), de 2004 a 2013, verificándose el rendimiento de los cursos entre las instituciones de educación superior públicas y privadas, y la relación de las puntuaciones del examen con el Concepto Preliminar de Curso (CPC). Estudio cuantitativo transversal de base documental, realizado con muestra de 103 cursos de fisioterapia que participaron de las evaluaciones del Enade realizadas de 2004 a 2013. El análisis consistió de la evaluación de los conceptos Enade y del CPC por clasificaciones de rendimiento a lo largo de los años. Se observó avance de los conceptos Enade y CPC en la muestra (valor de $p < 0.05$). El porcentaje de cursos con resultados insuficientes en el examen

descendió del 26.2%, en 2004, para 17.5%, en 2013, y el 38.8% de las IES obtuvieron conceptos superiores al criterio mínimo en 2013, en 2004 ese porcentaje correspondía a 21.4%. En todas las ediciones del examen las IES públicas presentaron mejor rendimiento que las instituciones privadas. Hubo avance de los cursos de Fisioterapia en el Enade y en el CPC para el período investigado, con mejor rendimiento de las instituciones públicas con relación a las privadas. Sin embargo, la permanencia de elevada proporción de resultados insuficientes o que apenas alcanzan el criterio mínimo alerta para la importancia de la discusión de la calidad de la formación del licenciado en Fisioterapia en el país.

Palabras clave | Evaluación Educacional; Educación Superior; Fisioterapia.

INTRODUCTION

The offer of physical therapy courses in Brazil highly expanded in recent decades, with a significant participation of private Higher Education Institutions (HEIs)¹. From 1991 to 2008, the growth corresponded to 892%, being the largest among the courses in the field of health². Nevertheless, despite the course offerings expansion, the influence of this growth in the training process is questioned.

In 2013, results of the National Exam for the Assessment of Student Performance (ENADE) showed the uneven and unsatisfactory distribution of concepts among the physical therapy courses in the country. Of the 372 undergraduate courses evaluated in the exam, only 15 (4.0%) received the “reference” concept – the highest possible in a score from 1 to 5; 92 (24.7%) presented insufficient results – scores 1 and 2; and 148 (39.8%) scored the minimum – 3³.

These data expose a troublesome situation, and it is relevant to inquire whether the ENADE 2013 results reflected the performance evolution of the courses, based on previous evaluations (2004, 2007, and 2010). It should be noted that the exam, founded in the National Curriculum Guidelines (DCN) of the physical therapy undergraduate course, is periodical and has national scope, being an important indicator to discuss training quality^{4,5}.

Another indicator that may contribute to this discussion is the Course Preliminary Concept (CPC), which results from the analysis of several factors:

ENADE concept, didactic-pedagogical organization, infrastructure, Performance Difference Index (IDD), faculty titling and work regimen of the evaluated courses⁶.

Regarding curriculum organization, although each institution sets the particularities of its Pedagogic Project of Course (PPC), the physical therapist training must be grounded on DCN⁷. However, a sampling study conducted in the northern region of Brazil pointed that the average adherence of physical therapy PPC to DCN was below expectations, identifying weaknesses in the structuring of courses’ curriculum matrices in most investigated HEIs⁸.

Given this context, this study aims to evaluate the performance of physical therapy courses regarding ENADE concepts from 2004 to 2013, verifying the performance among public and private HEIs, and the relation between ENADE and CPC scores.

METHODOLOGY

A cross-sectional study of quantitative character and documentary nature was conducted, whose data were obtained from information of official reports and spreadsheets of ENADE and CPC. These documents were available to public access, via internet, on the website of the National Institute of Educational Studies and Research (INEP – *Instituto Nacional de Estudos e Pesquisas Educacionais Anísio Teixeira*).

The HEIs sample of the study was defined based on their participation in all editions of the physical therapy ENADE, considering only the exams whose results

were already published by INEP at the moment of this research data collection. Therefore, only institutions with four evaluations were included: 2004, 2007, 2010, and 2013. The evaluation of 2016 was not included, as the results will only be available near the end of 2017. Thus, 103 physical therapy courses were selected, 87 from private HEIs and 16 from public institutions.

Data analysis was conducted in two stages: description of the frequency distribution of ENADE concepts and CPC score ranges by performance ratings, and construction of graphs for the ENADE result verification in a time series.

In the first stage, the ENADE concepts, which are hierarchically classified from 1 to 5, were divided into three categories for frequency distribution analysis. Scores 1 and 2 were grouped under the category “inferior than the minimum criterion”; score 3 under “equal to the minimum criterion”; and the others, 4 and 5, in the category “superior than the minimum criterion”. This same procedure was performed for the CPC score ranges that, alike ENADE scores, are standardized by INEP in a numeric scale from 1 to 5. However, since the CPC started to be calculated only from 2007 and that 7 of the 103 courses in the sample had no data on the indicator in the period, a sub-sample was constituted for this analysis, with 96 courses and referring to 2007, 2010, and 2013.

Non-parametric Friedman test was used to compare the grouped mean scores, for inferring concept changes during the four ENADE editions and three CPC evaluations. The significance level adopted was 5% ($p < 0.05$). The choice for the test was due to the paired samples, in which the same events (ENADE concepts and CPC scores) were observed in more than two regular intervals for the same groups of HEIs. For the

statistical calculation were used the free software “R” and the Pairwise Multiple Comparison of Mean Ranks Package “PMCMR”, available on cran.r-project.org⁹.

In the second stage, graphics were prepared for the observation of ENADE concept categories in a continuous perspective from 2004 to 2013. Each one of the three categories was analyzed separately, allowing the verification of courses performance from the result in the first exam (2004).

Considering that the study used only secondary data of public access through internet, did not involve research with human beings, and did not mention the name of the HEIs composing the study sample, it was not necessary to submit this article to the research ethics scrutiny.

For purposes of results presentation, the ENADE data is presented first and, following, the CPC data.

RESULTS

From 2004 to 2013, the performances of 103 HEIs courses that integrated the study sample indicate an evolution in concepts obtained on ENADE (Table 1). In the first evaluation, conducted in 2004, only 22 courses (21.4%) score higher than the minimum – concepts 4 and 5. In the fourth evaluation, in 2013, this amount increased to 40 (38.8%).

But, on the other hand, the proportion of courses with insufficient performance, or that only complied with the criteria, remained high. This group represented 78.6% of the samples in 2004, and 61.2% in 2013. The Friedman test showed statistical significance concerning the concept changes in the period ($p = 0.000$).

Table 1. Results of the National Exam for the Assessment of Student Performance, according to the sample of Physical Therapy courses in Brazil from 2004 to 2013

Year of the ENADE realization	Concept obtained in ENADE							
	Inferior than the minimum criterion (Concepts 1 and 2)		Equal to the minimum criterion (Concept 3)		Superior than the minimum criterion (Concepts 4 and 5)		Total	
	n	%	n	%	n	%	N	%
2004	27	26.2	54	52.4	22	21.4	103	100.0
2007	11	10.7	61	59.2	31	30.1	103	100.0
2010	29	28.2	43	41.7	31	30.1	103	100.0
2013	18	17.5	45	43.7	40	38.8	103	100.0

Source: ENADE results of 2004, 2007, 2010 and 2013. Available on the INEP website

The observation of data depending on the type of the HEIs administrative management showed that physical therapy courses of public institutions presented better performance in ENADE evaluations than those of private ones (Table 2). In public HEIs, most concepts were above the minimum in the first evaluation, 10 (62.5%). This margin was extended in the later years, and progressed to 14 (87.5%) in 2013. In private HEIs, for the period,

the number of courses with a performance above the minimum score went from 12 (13.8%) to 26 (29.9%)

Considering the smaller sample size of the public institutions courses and that most of them remained in the higher concepts range, it is understood the advancement of concepts in the period was more influenced by the private institutions ($p=0.004$), even though with lower results than public HEIs.

Table 2. Results of the National Exam for the Assessment of Student Performance, according to the sample of Physical Therapy courses in Brazil by type of administrative management of higher education institutions. Period: 2004 to 2013

Type of administrative management of HEIs	Year of the ENADE realization	Concept obtained in ENADE						Total	
		Inferior than the minimum criterion		Equal to the minimum criterion		Superior than the minimum criterion		N	%
		n	%	n	%	n	%		
Private	2004	26	29.9	49	56.3	12	13.8	87	100.0
	2007	11	12.6	58	66.7	18	20.7	87	100.0
	2010	27	31.0	42	48.3	18	20.7	87	100.0
	2013	17	19.5	44	50.6	26	29.9	87	100.0
Public	2004	1	6.3	5	31.3	10	62.5	16	100.0
	2007	0	0.0	3	18.8	13	81.3	16	100.0
	2010	2	12.5	1	6.3	13	81.3	16	100.0
	2013	1	6.3	1	6.3	14	87.5	16	100.0

Source: ENADE results of 2004, 2007, 2010 and 2013. Available on the INEP website

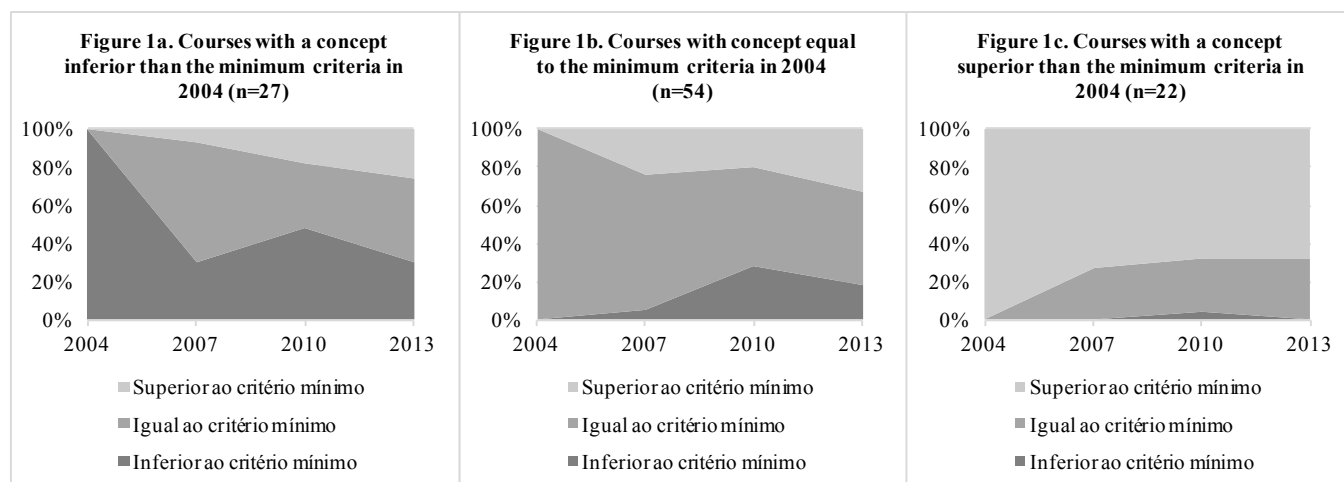
By taking as reference the concept obtained in ENADE 2004 (Figure 1a), it turns out that about 70% of the 27 institutions with insufficient concepts in that year reached a higher score in 2013. Among the institutions that finished the first evaluation with the minimum criterion the advance was more discreet since approximately 30% obtained a higher concept in 2013, but around 20% regressed in scoring (Figure 1b). For the group with better performance in 2004 there was a reduction of almost 32% to the minimum criterion (Figure 1c).

All public HEIs included in the group with higher concepts in 2004, 10 of the 22 institutions in the group (45.4%), remained in this same score range in all subsequent evaluations. On the other hand, of the 12 private institutions in this group, 7 (58.3%) regressed in concept in 2013.

When checking the courses performance through CPC (Table 3) it is observed that, of the 96 courses composing the sub-sample, most had the minimum criterion in 2007 (57.3%) and in 2010 (62.5%). This situation changed for the better in 2013, when 55.2% achieved concepts above the minimum criteria. Friedman Test was significant for these variations ($p=0.000$).

Observing the CPC results according to the HEIs administrative management (Table 4), it is emphasized that the performance of public institutions' courses was superior. However, private institutions presented greater positive variation in the evaluated period. Among public HEIs, the proportion of courses with performance above the minimum criterion was 71.4% in 2007, 64.3% in 2010, and 78.6% in 2013 ($p=0.431$). Among private HEIs, a gradual increase was observed: 17.1% in 2007, 23.2% in 2010, and 51.2% in 2013 ($p=0.000$).

Figure 1. Evolution of the concepts of the National Exam for the Assessment of Student Performance, according the sample of Physical Therapy courses in Brazil by result obtained in 2004 Period: 2004 to 2013



Source: ENADE results of 2004, 2007, 2010 and 2013. Available on the INEP website

Table 3. Course Preliminary Concept results, according to the sample of Physical Therapy courses in Brazil from 2007 to 2013

Year of evaluation	Preliminary Concept of the Course						Total	
	Inferior than the minimum criterion (Concepts 1 and 2)		Equal to the minimum criterion (Concept 3)		Superior than the minimum criterion (Concepts 4 and 5)		N	%
	n	%	n	%	n	%		
2007	17	17.7	55	57.3	24	25.0	96	100.0
2010	8	8.3	60	62.5	28	29.2	96	100.0
2013	3	3.1	40	41.7	53	55.2	96	100.0

Source: CPC results of 2007, 2010 and 2013. Available on the INEP website

Another point to highlight is that, despite most courses from private HEIs presenting CPC above the minimum in 2013, the ENADE results did not match at this same proportion. A different situation was found for public HEIs, in which these proportions remained high and close to each other for both exams.

DISCUSSION

The evaluation of ENADE results, during the nine years between the first and last exam, indicates an

improvement in physical therapy students' performance in the investigated sample, although with results under recommendations and unequal between private and public institutions. Thus, some reflections on this reality would be relevant.

Firstly, it is necessary to emphasize that the discussion on physical therapy courses' training quality, as well as their conditions of offer, involve many issues. Namely: courses opening policy, curricular guidelines update and its implementation, composition time, internships, complementary activities, health policies, and teaching and learning methodologies¹⁰.

Table 4. Course Preliminary Concept results, according to the sample of Brazilian Physical Therapy courses by administrative management of higher education institutions. Period: 2007 to 2013

Type of administrative management of HEIs	Year of evaluation	Preliminary Concept of the Course						Total	
		Inferior than the minimum criterion		Equal to the minimum criterion		Superior than the minimum criterion		n	%
		n	%	n	%	n	%		
Private	2007	16	19.5	52	63.4	14	17.1	82	100.0
	2010	7	8.5	56	68.3	19	23.2	82	100.0
	2013	3	3.7	37	45.1	42	51.2	82	100.0
Public	2007	1	7.1	3	21.4	10	71.4	14	100.0
	2010	1	7.1	4	28.6	9	64.3	14	100.0
	2013	0	0.0	3	21.4	11	78.6	14	100.0

Source: CPC results of 2007, 2010 and 2013. Available on the INEP website

The challenge of quality training in physical therapy is not an easy or exact task, but a process in permanent construction. In this perspective, the structuring of an adequate educational course project requires reflection, continuous evaluation, and willingness to change and innovate, especially regarding the break of paradigms in the teaching practice¹¹.

Another fundamental issue to this discussion is the course number expansion in the last decades. Although the expansion of that offer has enabled greater access the physical therapy under graduation, it certainly has generated a greater diversity of training models. A fact that helps to understand the differences found in this study regarding courses performance.

For some authors, the State decision of commercializing higher education to correct the historic deficit of this modality in the country had a considerable influence on the expansion of physical therapy courses. Nevertheless, this expansion took place without proper planning and regulation, with problems on teaching quality, imbalance of courses offer between country regions and the predominance of non-university private institutions^{1,12}.

In a study conducted among undergraduate accounting students, it was concluded, by examining the factors influencing the ENADE performance, that university students tend to have better performance

than those in isolated colleges. For the authors, the greater scientific production of universities, especially in public institutions, is a differential for the students' learning. The article also highlights the importance of supporting teaching titling and expansion of full-time regime for professors¹³.

As for the CPC results, the data presented in Bittencourt et al.¹⁴ corroborate this study's findings on the better CPC performance of public HEIs. The authors identified that, of 758 courses of federal universities in several areas of knowledge, 51.2% received concepts 4 or 5 in the CPC, while of 1193 private HEIs courses only 20% reached such score.

Bittencourt et al.¹⁴ analyzed that CPC considerations are determinant for the variations among private and public HEIs. They indicate that two strengths of private universities weight only 10% (infrastructure and educational resources) in the assessment. For public universities, they highlight the 25% weighting for Ph.D. professors in full time-basis, a situation more common in these institutions.

The absence of statistical difference between the CPC scores of public HEIs courses for the evaluated period resulted from the maintenance of high concepts by these courses on each year. This justifies the lower variation in concept change observed in public HEIs (7.2%) when compared to private ones (34.1%) since both showed evolution but started from distinct levels.

Another aspect to be considered is the necessary time to qualitative and quantitative changes in the courses, which determine the CPC advancement, can influence the students' performance in ENADE. Therefore, from this perspective, the effects on the training quality of the courses whose CPC evolved in 2013 should be present in future ENADE editions.

As limitations of this study, it is fundamental to highlight the quantitative approach and the exclusive use of ENADE and CPC data to infer the quality of training of the physical therapy bachelor in the country. It is understood that evaluations of this nature cannot account for the complexity of factors involved in the process, but constitute essential subsidies for this purpose. Therefore, the development of studies that address other variables relating to training quality is suggested, as well as the use of qualitative approaches to providing deeper knowledge on the subject.

CONCLUSION

The study reveals an evolution in the ENADE concepts and CPC evaluations for the courses sample investigated, although with a high proportion of insufficient performances or of mere compliance to the minimum criteria. In addition, the performance differences among private and public HEIs, with better achievements in public institutions, impose reflections on the factors that determine this reality and alert for the importance of a discussion on the training of the physical therapy bachelor in the country.

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