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Research article

Selectivity of physiotherapist programs in the United States does not differ by institutional funding source or research activity level

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Abstract

Purpose: This study aimed to compare selectivity characteristics among institution characteristics to determine differences by institutional funding source (public vs. private) or research activity level (research vs. non-research). **Methods:** This study included information provided by the Commission on Accreditation in Physical Therapy Education (CAPTE) and the Federation of State Boards of Physical Therapy. Data were extracted from all students who graduated in 2011 from accredited physical therapy programs in the United States. The public and private designations of the institutions were extracted directly from the classifications from the 'CAPTE annual accreditation report,' and high and low research activity was determined based on Carnegie classifications. The institutions were classified into four groups: public/research intensive, public/non-research intensive, private/research intensive, and private/non-research intensive. Descriptive and comparison analyses with post hoc testing were performed to determine whether there were statistically significant differences among the four groups. **Results:** Although there were statistically significant baseline grade point average differences among the four categorized groups, there were no significant differences in licensure pass rates or for any of the selectivity variables of interest. **Conclusion:** Selectivity characteristics did not differ by institutional funding source (public vs. private) or research activity level (research vs. non-research). This suggests that the concerns about reduced selectivity among physiotherapy programs, specifically the types that are experiencing the largest proliferation, appear less warranted.

Keywords: Accreditation; Licensure; Physical therapy modalities; Students; United States

Introduction

Institutional selectivity in higher learning can be interpreted as the degree to which that institution can be selective among a given applicant pool. 'Selectivity' has been defined as indicating that an institution does not admit a certain proportion of their applicants [1], with more selective programs admitting fewer students by percentage. Historically across the United States (US), institutional selectivity has been closely related to student-level factors such as the Scholastic Aptitude Test (SAT), American College Testing (ACT), Graduate Record Examination (GRE) scores, as well as grade point average (GPA) [2,3]. Anecdotally, selectivity is also thought to be related to university reputation, research intensiveness, and student costs related to public or private status. To date, two of these factors (public or private status and research intensiveness) has not been examined for differences in selectivity among physiotherapist programs.

This issue of selectivity is emerging as an important issue. Since 2007, the number of physiotherapist programs in the US has increased from 214 to 242 [4]. This represents an 11.6%

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increase, of which the largest rate of growth has been in the past few years. A notable pattern of growth has emerged, with private institution programs doubling (N = 14) the rate of growth of public institution programs (N = 6) [4]. Many of the newly created programs are housed in private institutions that are not research intensive [4]. There is some concern that a recent proliferation of programs in institutions that are not research intensive could reduce the selectivity of most physiotherapist programs [5]. We hypothesize that there are differences in selectivity between distinct types of physiotherapist programs, and that private institutions that are research intensive will be most selective. The purpose of this study was to compare selectivity characteristics among institution characteristics to determine differences by institutional funding source (public vs. private) and research activity level (research vs. non-research).

Methods

Study design

This observational design used programmatic information from all physiotherapist programs (N = 192) who provided data to CAPTE. Data were extracted from all accredited physical therapy (PT) programs in the US that graduated cohorts in 2011. The study was approved and expedited by the institutional review board of Duke University, Durham, North Carolina; USA (protocol ID, Pro00056918).

Materials and subjects

In the US, CAPTE is responsible for formulating, revising, adopting, and implementing the evaluative criteria for the accreditation of physical therapist professional education programs [6]. Annually, CAPTE requires an 'Annual Accreditation Report (AAR),' which is composed of institutional factors for all accredited programs. The CAPTE AAR contains general information from institutional programs such as curriculum, finances, format, admissions, and enrollment as well as graduate rates, outcome data, and faculty information. The data from this study were received in June of 2014 and included the most recently tabulated results from the CAPTE AAR.

Additionally, associated data from the three-year National Physical Therapy Exam (NPTE) cohort pass rates were provided indirectly by the Federation of State Boards of Physical Therapy (FSBPT), a member-driven organization that includes professionals, public members, and administrators [7]. The FSBPT advocates the use of three-year NPTE pass rates as a measure of effectiveness of a program, and this information is available publicly at their website. CAPTE embedded the three-year NPTE pass rates within the CAPTE AAR dataset and blinded the findings to the researchers.

Institutions

The summative institutional data were captured from 192 PT programs within the US and the territory of Puerto Rico. One of the available 193 programs did not provide applicant admissions data and thus was not included. Within the dataset, a CAPTE representative masked the identifiers for each institution so that the investigators could not link specific data to a single institution.

Categorization of institution

The public and private designations of the institutions were extracted directly from the classifications from the CAPTE AAR. Institutions were designated as having high or low research activity according to their Carnegie status. Carnegie classifications of doctorate/research or research university (very high or high) were considered to have high research activity. All other institutions were considered to be non-research intensive. These classifications created four unique groups, as follows: public research intensive, public non-research intensive, private research intensive, and private non-research intensive.

Variables

The authorship team sought to identify characteristics within the CAPTE AAR that were influential in the selectivity of a program. Since no single, quantifiable measure for selectivity exists for physiotherapist programs, we created several definitions that we felt accurately defined programs that were more selective. We hypothesized that more selective physiotherapist programs would have: (1) a higher raw number of applicants [higher is more selective]; (2) a higher raw number of qualified applicants [higher is more selective]; (3) a lower percentage of students that matriculated into the program from the pool of qualified applicants [matriculated/qualified applicants × 100%; lower percentage is more selective]; and (4) a higher percentage of students that matriculated into the program from the total number of students admitted into the program [matriculated/number admitted × 100%; higher percentage is more selective]. To capture unique institutional characteristics for each school, we created a novel 'selectiveness index' formula.

[(Applicants that met application criteria/number of applicants) × (matriculated students/offers of acceptances) × 100%] (higher percentage is more selective).

The subsequent selectivity index not only accounts for the total applications to a program (which varies greatly across the US), but the percentage of positions offered to those applicants and the percentage of the accepted applicants who actu-

ally matriculate.

Statistics

Descriptive statistics were run for each of the four categories, and chi-squared analyses were performed to explore differences among the four groups based on geographic region and type of university (Table 1). An analysis of variance was used to assess grade point average differences, and analysis of variance with post-hoc assessments was performed to determine whether there were any statistical differences among the four groups based on the previously identified measures of selectivity. All analyses were performed using IBM SPSS Statistics for Windows ver. 22.0 (IBM Co., Armonk, NY, USA). Descriptive statistics were reported as means and SDs. Statistical significance was indicated by P-values <0.05.

Results

Descriptive characteristics and P-values for the four physiotherapist program classifications are provided in Table 1. The largest number of institutions was classified as private non-research intensive (N = 64) followed by public research intensive (N = 55), public non-research intensive (N = 49), and private research intensive" (N = 24). There were statistically significant differences in geographic region, parent university type, and undergraduate GPA among the four groups ($P<0.001$). With respect to GPA, the public research group had the highest average undergraduate GPA (3.56 ± 0.14) and private non-research had the lowest (3.37 ± 0.18). There were no significant differences in licensure pass rates among the four institution categorizations. The assessments of selectivity measures are presented in Table 2, and no statistically significant differences

Table 1. Descriptive characteristics among public research, public non-research, private research, and private non-research physiotherapist programs, the United States in 2011 (N = 192)

Variable	Public research (N = 55)	Public non-research (N = 49)	Private research (N = 24)	Private non-research (N = 64)	P-value
Geographic region					< 0.001
East North Central	13	5	4	10	
East South Central	4	5	0	2	
Middle Atlantic	4	8	7	20	
Mountain	7	0	0	2	
New England	4	0	3	8	
Pacific	1	6	3	6	
South Atlantic	13	10	5	5	
West North Central	6	3	2	10	
West South Central	3	12	0	1	
Parent university type					< 0.001
Allied health sciences center	30	19	12	4	
Liberal arts	25	30	11	51	
Osteopathic	0	0	0	5	
Professional	0	0	0	4	
Technical	0	0	1	0	
3-Year cohort pass rate on National Physical Therapy Exam (%)	98.09 (3.78)	97.57 (3.43)	97.71 (3.74)	96.51 (4.97)	0.212
Undergraduate grade point average	3.56 (0.14)	3.54 (0.15)	3.39 (0.19)	3.37 (0.18)	< 0.001

Table 2. Differences in selected program characteristics among public research, public non-research, private research, and private non-research physiotherapist programs, the United States in 2011 (N = 192)

Variable	Public research (N = 55)	Public non-research (N = 49)	Private research (N = 24)	Private non-research (N = 64)	P-value
Applicants (no.)	343.71 ± 233.81	299.86 ± 139.06	388.25 ± 222.62	391.02 ± 295.93	0.196
Applicants meeting requirements (no.)	233.48 ± 189.63	192.10 ± 100.60	266.88 ± 209.91	252.73 ± 191.59	0.225
Matriculated/qualified applicants (%)	25.40 ± 16.39	23.65 ± 11.93	27.16 ± 20.83	31.53 ± 28.09	0.206
Matriculated/applicants admitted (%)	54.49 ± 19.76	57.14 ± 16.73	55.02 ± 16.79	58.64 ± 22.32	0.680
Selectivity index (%)	38.93 ± 15.01	40.42 ± 19.36	34.97 ± 20.00	37.22 ± 20.35	0.643

Values are presented as mean ± SD.

were found for any of the selectivity variables of interest.

Discussion

The purpose of this study was to compare selectivity characteristics among institutions of distinct types in order to determine differences by institutional funding source (public vs. private) and research activity level (research vs. non-research). We found that there were no statistically significant differences in selectivity by either of these factors. In the analysis, multiple definitions of selectivity were used; however, none seemed to be significantly influenced by these two parent institution factors. There may be several reasons for these findings.

First, it is plausible that the admissions dynamics in a physiotherapist program are distinct from the parent institution in which it is housed. Physiotherapist programs are present in both public and private institutions, and within research intensive and non-research intensive universities. Physiotherapy programs operate autonomously, are graduate-level programs, and may not practice the same strict admissions strategies of the parent institution in regard to their undergraduate admissions.

Second, institutional selectivity has been traditionally determined by metrics that the institutions use in their selection processes such as SAT, ACT, and GRE scores, and undergraduate GPA [2,3,8,9]. These criteria have also been routinely used as measures that influence selectivity in the literature [2,3]. Although these metrics are used by institutions, and researchers as student-level performance measures that could influence selectivity, they may not have the same influence on acceptance into a physiotherapist program. For example, we found significant differences in GPAs among our four institutional classifications, but no differences in selectivity measures.

The third reason for the lack of distinctions by the factors we assessed might be the evolving concept of selectivity itself. Presently only the top 10% of universities are considered to be more selective than they were in 1962; with 50% of universities being less selective than they were during this same time frame. Secondary to the number of available places growing faster than the number of qualified candidates, selectivity is decreasing at the majority of institutions throughout the US as those schools are increasing their enrollment numbers. There may be a number of reasons for this phenomenon. As more selective institutions have grown at the same rate as their qualified applicant pool, the pace of growth of less selective institutions has occurred at a faster rate than their qualified candidate pool [8]. This has occurred concurrently with a progressive decline in the number of graduating seniors from high school since 2011 [10].

It is worth noting that we hypothesized that private non-research intensive physiotherapist programs would be significantly less selective than their counterparts. In the US, outside of the professional education of physiotherapists, private for-profit institutions have come under increased scrutiny in recent years. These institutions have exploded in number and enrollment while doubling tuition costs and student loan debt [11]. Across the US and around the world, there has been an emergence and growth of professional doctorate programs [12] in allied health fields such as physiotherapy. US-based doctor of physical therapy (DPT) programs grew from 222 in 2011 to 226 in 2015, representing a 14% increase in DPT programs in 4 years [4].

It is plausible that selectivity may change based on external factors, more so than institutional factors. In the future, increased enrollment for physiotherapist students that creates a supply overage, higher tuition costs, and rising student loan debt may reduce the number of individuals who are driven to pursue a physiotherapist doctorate degree. These issues have influenced other professions that require an entry-level professional doctorate, such as individuals who pursue a law degree. Only 87.6% of graduates from the law classes of 2010 were able to find employment, with 21% of them working in a field that did not require a law degree [13].

There are a number of limitations to this study. The data that we had access to for this study was for the US physiotherapist cohort that graduated in 2011. Our findings therefore may not be generalizable to the current environment. Our database did not include GRE scores because this data is not consistently provided in physiotherapy annual reports to CAPTE. We therefore were unable to determine if there were any differences among the four groups that we examined related to this traditional metric of selectivity. Our database did not distinguish between the numbers of students that went to public institutions that were in-state as compared to out-of-state. This information may be important for determining factors related to cost and student selectivity.

In conclusion, selectivity is a conceptually simple metric that is related to how many students a physiotherapist program chooses to select from a pool of applicants. The selection process, however, is a complex interaction among institutional factors, student factors, and market-related factors that may or may not be related to cost. Selectivity characteristics did not differ by institutional funding source (public vs. private) or research activity level (research vs. non-research). This suggests that the concerns about reduced selectivity among physiotherapy programs that are experiencing the fastest rate of proliferation appear less warranted.

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Conflict of interest

No potential conflict of interest relevant to this article was reported.

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Supplementary material

Audio recording of the abstract.

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