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The Realities of Türkiye's Higher Education in the Path of Physiotherapy Profession: Rapid Growth and Abrupt Decline in the Last Two Decades

Fizyoterapi Mesleği Yolunda Türkiye'nin Yükseköğretim Gerçekleri: Son Yirmi Yılda Hızlı Büyüme ve Ani Düşüş

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Abstract

Physiotherapy rehabilitation education has undergone significant development both globally and nationally in recent years. With the adoption of an applied and clinical sciences framework in physiotherapy and rehabilitation education, the role of educators has become crucial in shaping the pathways of graduates. Given the increasing demand for physiotherapy, the number of physiotherapy and rehabilitation programs in Türkiye has risen. This expansion has offered students more choices and created a competitive environment like other countries. However, it has also raised some questions. The primary aim of this study is to examine the changes in the number of Physiotherapy and Rehabilitation Departments that have increased rapidly over the last 20 years. The second objective is to conduct a comparative analysis of public and foundation universities in Türkiye. All data were sourced from the Council of Higher Education (YÖK) Atlas (June, 2023) using the Python 3.11 program. From 2003 to 2023, the number of Physiotherapy and Rehabilitation Departments increased from 6 to 94. Although the Higher Education Institutions Examination (YKS) success rank varies across universities, at Hacettepe University—the oldest university in the field of Physiotherapy and Rehabilitation—it decreased from 9,710 in 2006 to 102,847 in 2023. The data obtained indicate that the total number of students continuing their education in the Department of Physiotherapy and Rehabilitation for the academic year 2022-2023 is 25116, and the number of academic staff is 982. Non-profit foundation universities have statistically fewer associate professors and a lower number of students and students per academic staff compared to public universities, while they have a higher number of professors. In conclusion, a comprehensive examination of the effects of the rapid increase in the number of universities providing physiotherapy and rehabilitation education in Türkiye, along with the dramatic decrease in the YKS success ranking, as well as understanding the current number of students and academicians, may be important for structuring the professional future and planning employment areas.

Keywords: Education, Higher Education, Physiotherapy and Rehabilitation, Teaching Staff, Student

Özet

Fizyoterapi rehabilitasyon eğitimi son yıllarda küresel ve ulusal olarak önemli bir gelişim göstermiştir. Fizyoterapi ve rehabilitasyon eğitiminde uygulamalı ve klinik bilimler çerçevesinin benimsenmesiyle birlikte, eğitimcilerin rolü mezunlarının yollarını şekillendirmede çok önemli hale gelmiştir. Fizyoterapiye duyulan ihtiyaçla birlikte Türkiye'de eğitim veren fizyoterapi ve rehabilitasyon programlarının sayısı artmıştır. Bu durum öğrencilere daha fazla seçenek sunmuş ve diğer ülkelere benzer bir rekabet ortamı oluşturmıştır. Ancak beraberinde bazı soruları da getirmiştir. Bu çalışmanın birincil amacı, son 20 yılda hızlı bir şekilde artan Fizyoterapi ve Rehabilitasyon Bölüm sayısı değişikliklerinin incelenmesidir. İkinci amaç ise Türkiye'deki devlet ve vakıf üniversitelerinin karşılaştırmalı bir analizini yapmaktır. Tüm veriler Python 3.11 programı kullanılarak Yükseköğretim Kurulu (YÖK) Lisans Atlasından alınmıştır (Haziran, 2023). 2003 yılından 2023 yılına eğitim veren Fizyoterapi ve Rehabilitasyon Bölümü sayısı 6'dan 94'e çıkmıştır. Yükseköğretim Kurumları Sınavı (YKS) başarı sırası üniversitelere göre değişim göstermekle birlikte, Fizyoterapi ve Rehabilitasyon alanında en eski üniversite olan Hacettepe Üniversitesinde 2006 yılında 9710'dan 2023 yılında 102,847'ye düşmüştür. Elde edilen veriler 2022-2023 akademik yılı için Fizyoterapi ve Rehabilitasyon Bölümü'nde eğitime devam eden toplam öğrenci sayısının 25116, akademik personel sayısının ise 982 olduğunu göstermiştir. Vakıf üniversiteleri, devlet üniversitelerine kıyasla istatistiksel olarak daha düşük doçent sayısına, daha düşük öğrenci sayısına ve akademik personel başına düşen öğrenci sayısına sahipken, daha fazla profesör ünvanlı akademisyen sayısına sahiptir. Sonuç olarak, Türkiye'de fizyoterapi ve rehabilitasyon eğitimi veren üniversitelerin sayısındaki hızla artış ile YKS başarı sıralamasındaki dramatik düşüşün etkilerinin kapsamlı bir şekilde irdelenmesi, güncel öğrenci ve akademisyen sayılarının bilinmesi mesleki geleceğin yapılandırılması ve istihdam alanlarının planlanması için önemli olabilir.

Anahtar Kelimeler: Eğitim, Yükseköğretim, Fizyoterapi ve Rehabilitasyon, Öğretim Üyesi, Öğrenci

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Physiotherapy education has evolved globally in recent decades, leading to changes in the structure of faculty roles, especially as programs transitioned from vocational, clinically-focused settings to university environments (Hunt et al., 1998). With physiotherapy education adopting applied sciences and clinical sciences frameworks, the role of educators has become crucial in shaping the paths of physiotherapy graduates.

Graduates from university physiotherapy programs are now expected to possess not only discipline-specific skills but also broader abilities common to all university graduates, reflecting the broader expectations of higher education (Hunt et al., 1998). As a result, faculty members play a vital role in imparting knowledge, mentoring students, and shaping the overall educational experience.

The number of entry-level physiotherapy programs in Türkiye has been on the rise, providing students with more choices and introducing competition similar to other countries (Barradell, 2017; Bithell, 2007). Consequently, certain metrics, such as the count of faculty members with higher titles and the faculty-to-student ratio, have become important in evaluating educational quality (Marope et al., 2013). A smaller faculty-to-student ratio is considered equivalent to better teaching, as smaller classes are thought to create an optimal learning environment (Marope et al., 2013).

In the Turkish higher education system, titles such as professor, associate professor, assistant professor, research assistant, and lecturer (teaching officer) exist. With more schools offering physiotherapy and rehabilitation education at the faculty level, the prevalence of staff holding this title has decreased in recent years. Professors represent individuals at the peak of their discipline or profession, with expertise in research, teaching, and service activities, including leadership and management roles (Macfarlane, 2011). The professoriate engages in various leadership and professional support activities related to research and teaching practices, mentoring, influencing university work and direction, representing the institution in engagements with wider communities, and assisting staff in professional development (Macfarlane, 2011). Therefore, the presence of professors is crucial for enhancing the quality of both student and staff education in universities. Considering the educational process of Physiotherapy and Rehabilitation, the abundance of both theoretical and profession-oriented practical courses is noteworthy (Gürses et al., 2014). Therefore, in the educational process, it is important not only to have a sufficient number of professors but also to have an adequate number of other titles to ensure the practical application of the practical courses.

This study aimed mainly to examine the impact of the rapidly increasing number of Physiotherapy and Rehabilitation Departments within 20 years in Türkiye. The second aim was to conduct a comparative analysis between state universities and non-profit foundations in Türkiye, specifically examining

the distribution of faculty titles within the Department of Physiotherapy and Rehabilitation. By investigating the prevalence of different titles, we aimed to uncover potential variations in expertise, research involvement, and teaching methodologies that may impact the educational experience of physiotherapy students. As physiotherapy education undergoes transformative changes globally, our research seeks to contribute empirical evidence on the hierarchical dynamics of faculty within physiotherapy programs.

Method

The information about the number of teaching staff and students in the departments providing undergraduate education in Physiotherapy and Rehabilitation in Türkiye was obtained from the YÖK Atlas website. This data was retrieved on 12.06.2023 (Fizyoterapi ve Rehabilitasyon, 2023). The Python 3.11 (Van Rossum & Drake, 2009) program was used to extract the data from the website.

Analysis of Data

Statistical analysis was performed in Python 3.11 using the SciPy v1.10.1 library. The Kolmogorov-Smirnov test was used to assess whether the data were normally distributed. The Mann-Whitney U test was used to analyze whether there is a difference between state universities and non-profit foundation universities. For all tests, the statistical level was set at $p = 0.05$.

Results

According to the data from YÖK Atlas, the total number of students continuing their education in the Department of Physiotherapy and Rehabilitation for the 2022-2023 academic year is 25116, with 982 academic staff members.

Figure 1
Number of Universities with Physiotherapy and Rehabilitation Departments by Years

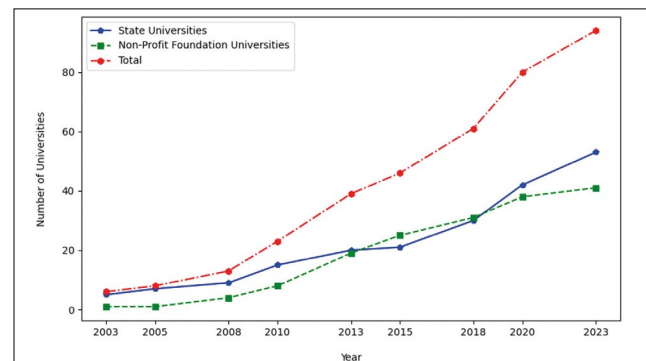


Figure 1 shows that the number of universities offering Department of Physiotherapy and Rehabilitation has increased substantially, rising from 6 institutions in 2003 to 94 institutions in 2023, representing an impressive growth rate of 1467% during the past two decades.



Figure 2

Türkiye Ranking according to Higher Education Institutions Examination of Students Admitted to Physiotherapy and Rehabilitation Department: Three University Examples

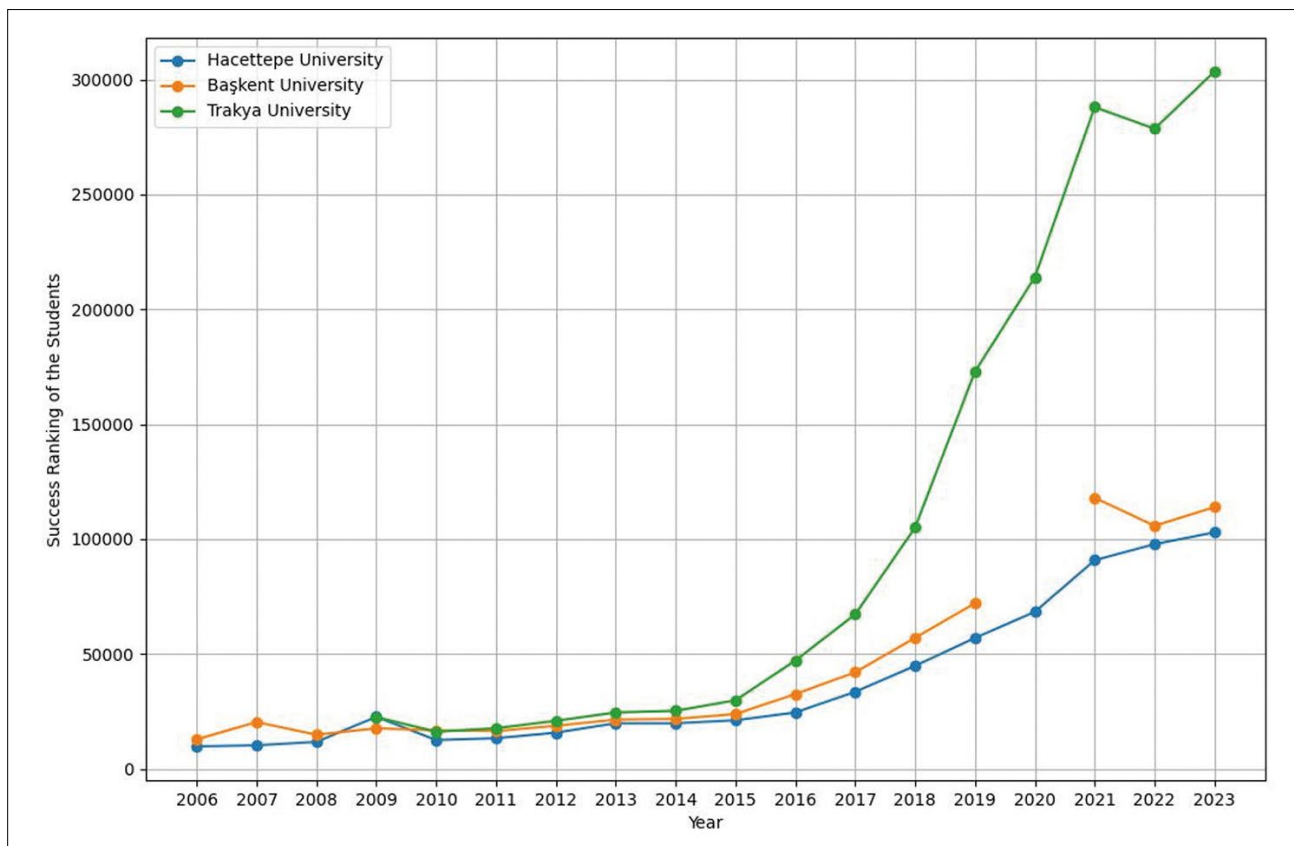


Figure 3

Histogram Data of State and Non-Profit Foundation University

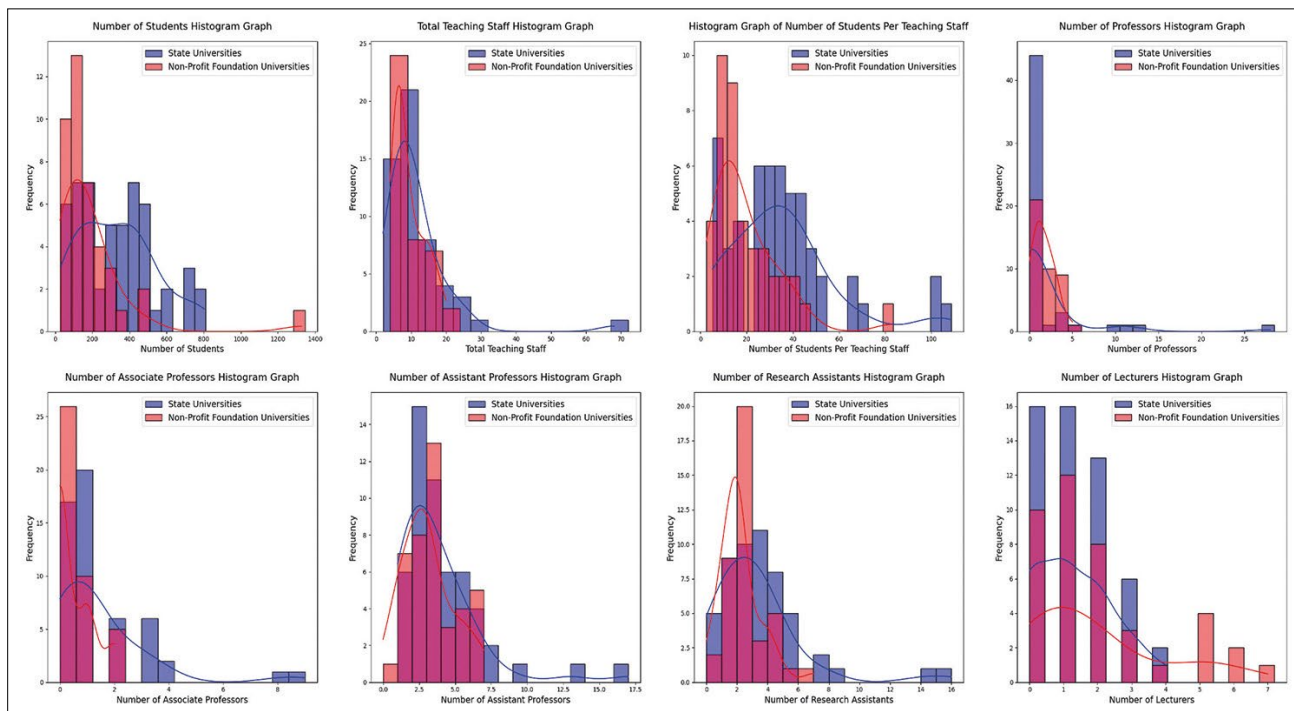


Table 1

Descriptive Information and Comparison of State and Non-Profit Foundation Universities

	State Universities				Non-Profit Foundation Universities				p
	(n=53)				(n=41)				
	Mean ± SD	Min - Max	Median	IQR	Mean ± SD	Min - Max	Median	IQR	
Total Students	331.60 ± 207.32	31.00 - 804.00	328.00	181.00-451.00	183.93 ± 211.84	25.00 - 1326.00	117.00	93.00-208.00	0.000
Total Teaching Staff	11.30 ± 9.69	2.00 - 68.00	9.00	6.00-12.00	9.34 ± 4.39	4.00 - 20.00	7.00	6.00-12.00	0.432
Student/ Teaching Staff	35.00 ± 23.29	5.17 - 108.00	33.60	17.75 - 43.80	19.71 ± 14.94	2.50 - 82.88	14.14	10.17 - 25.63	0.000
Professor	1.60 ± 4.56	0.00 - 28.00	0.00	0.00 - 1.00	1.63 ± 1.26	0.00 - 5.00	1.00	1.00 - 2.00	0.000
Associate Professor	1.42 ± 1.80	0.00 - 9.00	1.00	0.00 - 2.00	0.49 ± 0.71	0.00 - 2.00	0.00	0.00 - 1.00	0,001
Assistant Professor	3.77 ± 2.90	1.00 - 17.00	3.00	2.00 - 5.00	3.07 ± 1.75	0.00 - 7.00	3.00	2.00 - 4.00	0,404
Research Assistant	3.23 ± 2.98	0.00 - 16.00	3.00	1.00 - 4.00	2.20 ± 1.35	0.00 - 7.00	2.00	1.00 - 2.00	0,064
Lecturer	1.28 ± 1.13	0.00 - 4.00	1.00	0.00 - 2.00	1.95 ± 1.95	0.00 - 7.00	1.00	1.00 - 3.00	0,220

IQR: Interquartile range, SD: Standard Deviation, Min-Max: Minimum-Maximum

Figure 2 illustrates the lowest success rankings in Türkiye based on the higher education institutions examination of students admitted to the physiotherapy and rehabilitation department in three universities over the past 15 years. At Hacettepe University, the lowest success ranking decreased from 9710 in 2006 to 102847 in 2023. At Başkent University, the lowest success ranking decreased from 12800 in 2006 to 113868 in 2023. Similarly, at Trakya University, the lowest success ranking decreased from 22500 in 2006 to 303494 in 2023.

Non-profit foundation universities have a significantly lower number of associate professors and lower number of students, and students per academic staff compared to state universities ($p < 0.05$). On the other hand, state universities have significantly a lower number of professors compared to non-profit foundation universities ($p = 0.001$). No significant difference was observed in the number of assistant professors, research assistants, and lecturers ($p > 0.05$). Table 1 presents the comparison details.

Figure 3 provides a visual representation of the distribution of numbers for various academic staff categories and student numbers in both state and non-profit foundation universities within the Department of Physiotherapy and Rehabilitation in Türkiye. The figure reveals that, for the most part, state and non-profit foundation universities exhibit similar distribution patterns, characterized by higher frequencies in the lower numbers.

Discussion

This study was conducted to evaluate the abnormally increasing number of physiotherapists, who constitute an important part of the healthcare system, in line with the needs in Türkiye. The data obtained from this study showed that there is a rapid increase in the number of both non-profit foundation universities and state universities providing education in the field of physiotherapy and rehabilitation. However, the success ranking in the Higher Education Institutions Examination of students who want to become physiotherapists in Türkiye has dramatically decreased.

Physiotherapists are employed in various fields within the healthcare sector, such as hospitals, educational institutions, private practices, residential care, and long-term care facilities. Given the specialized areas where physiotherapists practice, they hold a significant role within the healthcare system (Maharaj, 2018). Data from the European Union in 2021 indicated a total of 611,000 practicing physiotherapists, equating to an average rate of 136.7 physiotherapists for every 100,000 residents (Physicians and physiotherapists, 2023). While Germany with the same average population size boasts the highest employment rate for physiotherapists, Türkiye falls significantly below the European Union average (Healthcare personnel, 2023). In 2014, the Ministry of Health in Türkiye prepared a report comparing the labor force targets for 2023 with the expected supply if the current educational trends continue (Şencan et



al., 2014). The report projected that 29,285 physiotherapists would graduate by 2024. However, the number of physiotherapy students continuing their education in the 2022-2023 academic year reached 25116 according to YÖK Atlas data. The discrepancy between the projected number of physiotherapists and the actual number of graduates naturally raises questions about the impact on employment. In conjunction with the expansion of universities offering physiotherapy and rehabilitation education in Türkiye over the past 20 years, Karagözoğlu Coşkunsu et al. demonstrated that the duration physiotherapists require to secure employment after graduation has significantly lengthened (Karagözoğlu et al., 2018). This situation not only causes unemployment concerns among senior students (Aslan Telci et al., 2022), but also directly affects the professional perceptions and expectation of both students and graduates (Alaca et al., 2024; Kahraman et al., 2018). In 2022, the Ministry of Health appointed only 210 physiotherapists, and the average score of these appointed physiotherapists on the Public Personnel Selection Examination was 91.02 ± 0.73 out of 100 (KPSS 2022/5, 2022). The prolonged job search after graduation and the limited quotas for health personnel at state hospitals compared to other branches have diminished the appeal of the physiotherapy and rehabilitation profession for students. In 2009, the lowest student success ranking to select the newly established Physiotherapy and Rehabilitation program at Trakya University was 22,500 on the Higher Education Institutions Examination; by 2023, this ranking had dropped to 303,494 (Merkezi Yerleştirme, 2010; Yükseköğretim Programları, 2023). The success ranking of students entering the physiotherapy and rehabilitation program at Hacettepe University, typically the top choice for this field, fell from 9,710 in 2006 to 102,847 in 2022 (Merkezi Yerleştirme, 2010; Yükseköğretim Programları, 2023). An examination of the student selection and placement guides reveals a noticeable decline over the years in the success rankings of all students starting physiotherapy and rehabilitation education. While the number of universities offering education for physiotherapists, who constitute an important part of the healthcare system, has increased, one of the primary reasons for this decline has been the absence of a limit on the YKS success ranking. In the 2023 YKS guide, there are ranking limits of 50,000 for students aspiring to study medicine, 80,000 for dentistry, and 100,000 for pharmacy education, but there is no limit for students aiming to study physiotherapy and rehabilitation (Yükseköğretim Programları, 2023). For instance, the ranking of the last student admitted to Istanbul Rumeli University, a foundation university, was 1,486,500, which is deemed unacceptable (Yükseköğretim Girdi Göstergeleri, 2023). As members of a profession that will play an active role in patient treatment, physiotherapists should certainly have a ranking limit in YKS.

Another issue influenced by the rapid increase in the number of physiotherapy and rehabilitation departments over the years is the availability and competency of educators tasked

with delivering education in this field. In 2012, Gürses et al. found that a student must successfully complete an average of 81.96 ± 20.86 courses in 4 years to become a physiotherapist (Gürses et al., 2014). An average of 36 of these courses are vocational courses. For this reason, the number and competency of the teaching staff are important for the education of physiotherapy and rehabilitation students who will be integrated into the health system after graduation. As shown in YÖK Atlas website (Fizyoterapi ve Rehabilitasyon, 2023), the number of professors at Hacettepe University, the first to offer physiotherapy and rehabilitation education in Türkiye, exceeds the total academic staff at any other university providing such education. This discrepancy may be attributed to the autonomous structures of universities and the fact that transitioning between universities is not as straightforward as it is in other institutions within the country. Additionally, it is noteworthy that the total academic staff at universities offering physiotherapy and rehabilitation education ranges from 2 to 68.

The importance of practical courses in the field of health lies in developing professional skills, gathering medical information, and providing high-quality medical care to patients (Horodova-Andreeva et al., 2023). The observation of applications made by the lecturer, followed by the physiotherapy student making similar applications, plays a significant role in learning practical studies in physiotherapy (Hilkk et al., 2017). In this context, the lower faculty-to-student ratio at foundation universities in Türkiye, compared to state universities, enables more efficient applied courses, and allows students to comprehend the applications more easily. In the annual quality review of Physiotherapy education published by The Chartered Society of Physiotherapy in the UK, it was reported that from 2010 to 2020, the average number of students per lecturer ranged between 15 and 18. Although this ratio reaches 25 in some universities, it may not directly reflect the ratio in practical courses, as students often divide into smaller groups for these sessions (UK Pre-registration Physiotherapy, 2020). Similarly, data from YÖK Atlas was used to ascertain the number of lecturers and students at universities in Türkiye. Therefore, it is important to note that the student-to-lecturer ratio in practical courses may vary.

Limitations

Physiotherapy and rehabilitation courses covering basic sciences such as anatomy and physiology are often taught by guest lecturers from medical faculties, instead of the physiotherapy and rehabilitation department's own lecturers. However, the data regarding these guest lecturers is not included in the YÖK Atlas. In addition, YÖK Atlas does not provide information about whether the faculty members in the department of physiotherapy and rehabilitation, particularly those in the professor cadre, are responsible for professional practice courses. This absence of data can be considered a major limitation of our study.

Conclusion

It requires a comprehensive understanding of the effects of the rapidly increasing number of universities providing physiotherapy education in Türkiye and the dramatically decreasing success ranking in YKS. This study underscores the need for balanced growth in education and employment opportunities, ensuring quality education and adequate professional opportunities for graduates. This balance is crucial for maintaining the high standards of healthcare delivery and for addressing the future needs of the health system effectively.



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