



Original Research Article/Orijinal Araştırma Makalesi

An Investigation of Physical Therapy and Rehabilitation Students' Habits of Using Artificial Intelligence Tools in Their Learning Processes

Ufuk Baloğlu, Yasin Yurt

Eastern Mediterranean University, Faculty of Health Sciences, Department of Physiotherapy and Rehabilitation, Famagusta, North Cyprus, Mersin 10 Türkiye

Abstract

Aim: Our aim was to investigate the habits of students in the Department of Physical Therapy and Rehabilitation regarding the use of artificial intelligence tools and their views on the effects of these tools on their education and profession.

Material and Method: Students aged 18-30, studying in different classes in the Physical Therapy and Rehabilitation Departments, were included in the study. Data were collected by administering an online survey containing questions assessing students' age, gender, grade, habits of using artificial intelligence tools in their education processes and their opinions.

Results: A total of 121 students from 4 universities were included in the study. 41.3% of the students were male, 58.7% were female, and their average age was 21.20±2.06 years. 92.6% of the students used ChatGPT, 22.3% used Gemini, 5.8% used Deepseek, and 13% used other applications, while 6.6% stated that they did not use artificial intelligence tools. 81.8% of the students used artificial intelligence for educational purposes, 53.7% for daily life, and 23.1% for work purposes. Students who wanted AI-related courses to be added to the curriculum constituted 70.2% of the total. While 96.7% of students believed that AI would contribute to their professional skills, 3.4% had a counter. Furthermore, 71.9% of students believed that the use of AI in healthcare raised ethical concerns.

Conclusion: The vast majority of students stated that they use artificial intelligence. This data shows that students adapt quickly to developing technology. The fact that students felt the need to use artificial intelligence not only in the field of education but also in areas such as daily life and work shows that artificial intelligence has become a part of life. It would be appropriate for course content covering artificial intelligence tools that healthcare professionals can use in their fields and their ethical boundaries to be included in the curriculum.

Keywords: Artificial intelligence, physical therapy, rehabilitation, education

Fizyoterapi ve Rehabilitasyon Bölümü Öğrencilerinin Öğrenim Süreçlerinde Yapay Zekâ Araçlarını Kullanma Alışkanlıklarının İncelenmesi

Özet

Amaç: Bu çalışmanın amacı, Fizyoterapi ve Rehabilitasyon Bölümü öğrencilerinin yapay zekâ araçlarının kullanımına ilişkin alışkanlıklarını ve bu araçların eğitim ve meslek hayatları üzerindeki etkilerine dair görüşlerini araştırmaktır.

Materyal ve Method: Çalışmaya, Fizyoterapi ve Rehabilitasyon Bölümlerinde farklı sınıflarda öğrenim gören 18-30 yaş arası öğrenciler dahil edildi. Veriler, öğrencilerin yaş, cinsiyet, sınıf, eğitim süreçlerinde yapay zeka araçlarını kullanma alışkanlıklarını ve görüşlerini değerlendiren sorular içeren çevrimiçi bir anket uygulanarak toplandı.

Bulgular: Çalışmaya 4 üniversiteden toplam 121 öğrenci dahil edildi. Öğrencilerin %41,3'ü erkek, %58,7'si kadın ve ortalama yaşları $21,20 \pm 2,06$ yılıdır. Öğrencilerin %92,6'sı ChatGPT, %22,3'ü Gemini, %5,8'i Deepseek ve %13'ü diğer uygulamaları kullanırken, %6,6'sı yapay zeka araçlarını kullanmadığını belirtti. Öğrencilerin %81,8'i yapay zekayı eğitim amaçlı, %53,7'si günlük yaşamda ve %23,1'i iş amaçlı kullandı. Müfredata yapay zeka ile ilgili derslerin eklenmesini isteyen öğrenciler toplamın %70,2'sini oluşturdu. Öğrencilerin %96,7'si yapay zekanın mesleki becerilerine katkıda bulunacağına inanırken, %3,4'ü buna karşı çıktı. Ayrıca, öğrencilerin %71,9'u sağlık hizmetlerinde yapay zeka kullanımının etik endişeler doğurduğuna inanıyordu.

Sonuç: Öğrencilerin büyük çoğunluğu yapay zekayı kullandıklarını belirtmiştir. Bu veriler, öğrencilerin gelişen teknolojiye hızla uyum sağladığını göstermektedir. Öğrencilerin yapay zekayı sadece eğitim alanında değil, günlük yaşam ve iş hayatı gibi alanlarda da kullanma ihtiyacı hissetmeleri, yapay zekanın hayatın bir parçası haline geldiğini göstermektedir. Sağlık çalışanlarının kendi alanlarında kullanabileceği yapay zeka araçlarını ve etik sınırlarını kapsayan ders içeriklerinin müfredata dahil edilmesi uygun olacaktır.

Anahtar Kelimeler: Yapay zeka, fizik tedavi, rehabilitasyon, eğitim

Introduction

Artificial intelligence technologies are known to be used in critical processes in the health field, such as early detection, accurate diagnosis, clinical decision-making, and maintaining health.¹ Today, the use of information and communication technologies provides significant benefits in terms of performance and efficiency for academic institutions and their stakeholders.² This rapid development in information technologies has brought about radical innovations in healthcare services.³ Although the relationship between artificial intelligence and education has a long history, the need for digital learning processes, especially after the COVID-19 pandemic, has accelerated the integration of these technologies into educational activities.⁴ Today, artificial intelligence applications in education are not only knowledge-based but also encompass a wide range of systems, including data and logic-based systems, intelligent agents, and automated test generation.⁵ In healthcare, artificial intelligence is used to support clinical decision-making and improve patient outcomes by analyzing large amounts of data such as medical records, imaging studies, and laboratory results.⁶ Given the capabilities of AI-based chat applications, their potential uses, such as providing information about diseases and writing scientific research papers, are increasing their use among health students.⁷ Recent studies show that the power of artificial intelligence to improve assessment processes and make selection stages more efficient has increased educators' interest in this technology.⁸ AI writing

tools can help students develop ideas and overcome creative barriers by offering personalized learning paths.⁹ The success of large language models such as ChatGPT in medical licensing exams clearly demonstrates the potential of AI-assisted medical education.¹⁰

AI-based tools have become one of the most critical drivers of digital transformation in higher education by providing interactive content and real-time feedback to students.¹¹ User-friendly interfaces and fast response times positively influence students' perception and interest in these chatbots in health professions.¹² Improved AI literacy and sustainable integration have the potential to increase academic achievement by promoting students' self-efficacy.¹³ However, more scientific studies are needed to investigate the role of AI-assisted computers in educational environments and the external factors affecting their adoption.¹⁴ Instead of hindering this technology, educators are now focusing on how it can be strategically integrated into teaching and learning processes.¹⁵

AI-based applications such as video analysis, robotic devices, and predictive algorithms are rapidly gaining popularity in the field of physiotherapy and rehabilitation.¹⁶ Generative AI models can simulate human-like creativity and generate interactive conversations using deep learning and neural networks.¹⁷ Improving clinical reasoning, a key objective in physiotherapy education, is vital for reducing diagnostic errors and ensuring timely intervention.¹⁸ However, factors such as limited technical knowledge and insufficient hands-on training create multifaceted barriers that hinder students' confidence in using AI tools.¹⁹ Finally, ethical implications such as data privacy, security issues, and potential biases against individuals with low language proficiency should be carefully considered when using tools like ChatGPT.²⁰

The aim of this research was to examine the usage habits of artificial intelligence tools among physiotherapy and rehabilitation students, the areas in which they use AI tools, and their opinions regarding the professional use of artificial intelligence.

Materials and Methods

This study was initiated after obtaining approval number 2025-0007 from the Ethics Subcommittee of the Basic Health Sciences Area at Eastern Mediterranean University. The research was conducted between January 25, 2025, and April 1, 2025. Students aged 18-30 enrolled as undergraduate students in the physical therapy and rehabilitation department were included in the study. Students whose native language was not Turkish were excluded from the study. An approval form was sent to the participants online, and students who approved on a voluntary basis participated in the survey online and answered the questions. A total of 124 students from 4 different universities participated in the study, 2 of which were private universities and 2 were state universities. 3 students did not approve the consent form and did not wish to participate in the study. The study continued with the 121 students remaining in the sample.

The survey questions were developed based on a comprehensive review of the existing literature on artificial intelligence use in higher education and health sciences education, drawing particularly on studies examining AI tool adoption, AI literacy, and the integration of AI into health professions curricula.^{7, 8, 11, 12, 14, 15}

The first section of the survey asked students about their demographic information, including age and gender, as well as what grade they were in. The second section asked about their use of AI tools, which AI tools they used if any, their level of knowledge in the field of AI, the areas in which they used the tools, their purpose for using AI in education, and their thoughts on adding AI-related courses to the curriculum. The final section examined whether artificial intelligence could be beneficial in advancing the profession of physical therapy and addressed ethical concerns regarding the development of the artificial intelligence field.

Statistical Analysis

Data were collected online and analyzed using PASW Statistics 18 software. Descriptive statistics were presented using frequency counts and percentages (n, %), and mean and standard deviation ($X \pm SD$) for numerical values.

Results

The average age of the 121 students included in the study was found to be 21.2 ± 2.0 years. 58.7% of the sample (n=71) consisted of female students, and 41.3% (n=50) consisted of male students. When the distribution by grade level was examined, it was found that 33.9% (n=41) of the students were first graders, 24.8% (n=30) were second graders, 22.3% (n=27) were third graders, and 19.0% (n=23) were fourth graders (Table 1).

It was found that 92.6% (n=112) of students use artificial intelligence. When ranking the most frequently used artificial intelligence tools, ChatGPT ranks first (92.6%), followed by Gemini with 22.3%. When looking at students' knowledge levels about artificial intelligence technologies, it was seen that the majority did not have sufficient knowledge (45.5% low, 42.1% medium). When looking at the needs for artificial intelligence use, education ranked first with 81.8%, followed by daily life with 53.7%. Specifically in education, 66.9% of the purposes for using artificial intelligence tools are to access information, 48.8% are to create text for assignments, and 48.8% are for scientific research. 60.3% of students use artificial intelligence in education for other purposes such as translation, presentations, and summarization. 70.2% of students believe that courses or seminars on artificial intelligence should be included in the curriculum (Table 2).

A large majority of students (64.5%, comprising 45.5% who answered "yes" and 19.0% who answered "definitely yes") believe that artificial intelligence tools will contribute to the development of physical therapists' professional skills. The 49.6% of students who believe that artificial intelligence applications will not reduce the functions of physical therapists also show that they see artificial intelligence as a supportive rather than a threatening factor. The 71.9% of students who believe that artificial intelligence raises ethical concerns show that ethical factors are an important factor that cannot be ignored (Table 3).

Table 1. Characteristics of participants (n=121)

Age (years), $X \pm SD$	21.2 $\pm$ 2.0
Gender, n(%)	
Male	50 (41.3)
Female	71 (58.7)
What grade are you in? n(%)	
1st grade	41 (33.9)
2nd Grade	30 (24.8)
3rd Grade	27 (22.3)
4th Grade	23 (19.0)

Table 2. Students' habits of using artificial intelligence tools (n=121).

	n(%)
Do you use artificial intelligence tools?	
Yes	113 (93.4)
No	8 (6.6)
Which AI tools do you use?	
ChatGPT	112 (92.6%)
Gemini	27 (22.3%)
Other Tools (DeepL, Deepseek, Claude, etc.)	15 (12.4%)
I don't use it	8 (6.6)
How would you rate your level of knowledge about artificial intelligence technologies?	
I have no knowledge	2 (1.7)
I have some knowledge	55 (45.5)
I have moderate knowledge	51 (42.1)
I have a good level of knowledge	10 (8.3)
I have a very good level of knowledge	3 (2.5)
In which areas do you need artificial intelligence?	
Education	99 (81.8%)
Daily life	65 (53.7%)
Work	28 (23.1%)
I don't need it	11 (9.1)
Other	3 (2.5)
For what purposes do you use artificial intelligence tools in education?	
Accessing information	81 (66.9%)
Creating text for assignments	59 (48.8%)
Scientific research	59 (48.8%)
Exam preparation	49 (40.5%)
Other (Translation, Presentation, Visual, Summary, etc.)	73 (60.3%)
Would you like to see courses or seminars related to artificial intelligence added to the curriculum?	
Yes	85 (70.2)
No	36 (29.8)

Table 3. Students' views on the professional use of artificial intelligence tools.

	n(%)
Do you think artificial intelligence tools are useful for developing your professional skills?	
Totally disagree	0
Disagree	4 (3.3)
Partially agree	39 (32.2)
Agree	55 (45.5)
Totally agree	23 (19.0)
Do you think artificial intelligence applications will reduce the functions of physical therapists?	
Totally disagree	15 (12.4)
Disagree	45 (37.2)
Partially agree	36 (29.8)
Agree	14 (11.6)
Totally agree	11 (9.1)
Do you think the use of artificial intelligence raises ethical concerns in terms of education or professional practice?	
Totally disagree	2 (1.7)
Disagree	32 (26.4)
Partially agree	52 (43.0)
Agree	22 (18.2)
Totally agree	13 (10.7)

Discussion

Artificial intelligence technology is developing rapidly, and students are quickly adapting to this development. While young people's rapid adaptation to technology provides advantages in education and professional fields, this speed also brings with it ethical concerns and anxiety. Despite its current development and popularity, artificial intelligence technology, which causes unease and anxiety in individuals, can actually support the rapid completion of simple and repetitive tasks through robots.²¹

Students who view artificial intelligence as a useful tool and focus on its positive aspects also point out its serious disadvantages, such as its inability to protect intellectual property rights.²² Based on the findings of our research, students who see artificial intelligence as a useful tool in time-consuming processes in education, such as accessing information, creating texts, and conducting scientific research, also need to be informed about the ethical boundaries of using these tools.

The most striking information we obtained in our research is that 92.6% of students use artificial intelligence tools, but despite this use, a large majority (87.6%) indicate that their knowledge levels are low to moderate. Similarly, in another study conducted on university students, students assessed their artificial intelligence literacy levels as moderate.²² This situation

reinforces our findings and is defined in the literature as "the gap between technological familiarity and technological literacy." Despite the widespread use of artificial intelligence in education (81.8%), the fact that the level of artificial intelligence knowledge is at a medium level raises the question of how consciously students use artificial intelligence.

The fact that 70.2% of Physical Therapy and Rehabilitation Department students want these technologies to be included in the curriculum shows that they are not satisfied with their level of AI literacy and want to increase it. When other studies conducted on university students are examined, it has been observed that students with high AI usage have higher academic achievements.²³ Based on these data, the necessity of adding the supportive use of AI tools in education to the curriculum stands out.

Our research findings show that 64.5% of students see artificial intelligence as an element that will increase their professional competence and, at the same time, do not have a clear concern that professional functionality will decrease. This situation can be evaluated as an indicator of students' confidence in their profession. Fundamental elements inherent to the physical therapy profession, such as 'empathy' and 'manual skills', ensure that artificial intelligence is positioned as a complementary force rather than a replacement in this field. As a result, young physical therapy candidates define developing artificial intelligence technology not as a competitor, but as a 'clinical support assistant' that supports clinical processes.

The fact that 71.9% of students have ethical concerns about artificial intelligence shows that they are aware of highly important issues such as academic integrity and data privacy. Considering that artificial intelligence tools can provide incorrect and misleading information, limitations on the use of artificial intelligence within professional ethical values should not be overlooked. Another study supports our findings by stating that students experience uncertainty about the accuracy of information provided by artificial intelligence and express concern in this regard, emphasizing the importance of ethical values.²⁴ One limitation of this study is that the sample was recruited through convenience sampling from four universities, which may limit the representativeness of the findings and restrict their generalizability to the broader population of physiotherapy and rehabilitation students.

Conclusion

The data obtained in our study clearly shows that artificial intelligence is no longer an option but is now present in every area of life, especially education. Despite the active use of artificial intelligence, the lack of knowledge about its areas of application and ethical boundaries has emerged as an issue requiring intervention. This result indicates that technological literacy needs to be developed alongside the use of tools in artificial intelligence education. While the rate of technical adaptation is high in fields such as engineering, ethical concerns in social and human sciences such as health care make adaptation relative. It is a noteworthy finding that students believe artificial intelligence will contribute to their professional skills and want courses and seminars on artificial intelligence to be added to the curriculum. Although students believe that artificial intelligence will improve their professional skills, they also believe that it will raise ethical concerns. Therefore, when adding courses on artificial intelligence to the educational curriculum, it is necessary to focus on professional ethics, which is the cornerstone of health disciplines.

Corresponding Author/Sorumlu Yazar: *Ufuk Baloğlu PT. Eastern Mediterranean University, Faculty of Health Sciences, Department of Physiotherapy and Rehabilitation, Famagusta, North Cyprus, Mersin 10 Türkiye*

E-mail: baloglu.ufuk9@gmail.com

References

1. Yılmaz Y, Uzelli Yılmaz D, Yıldırım D, Akın Korhan E, Özer Kaya D. Yapay Zeka ve Sağlıkta Yapay Zekanın Kullanımına Yönelik Sağlık Bilimleri Fakültesi Öğrencilerinin Görüşleri. SDÜ Sağlık Bilimleri Dergisi. 2021;12(3):297-308.
2. Seçer E, Özer Kaya D. Comparison of Communication Skills and Empathy Levels of Physiotherapy and Rehabilitation Students According to Individual and Academic Characteristics: A Cross-Sectional Study. Hacettepe Univ Fac Health Sci J. 2024;11(2):615-629.
3. Başaran Z, Elbasan B. Fizyoterapi ve Rehabilitasyonda Güncel Yazılım Teknolojisi: Görüntü İşleme Tekniği. Gazi Sağlık Bilimleri Dergisi. 2023;8(2):79-88.
4. Temur S. Eğitimde yapay zekâ kullanımı: Etik sorunlar ve çözümler. Mehmet Akif Ersoy Univ J Educ Fac. 2025;(74):568-595.
5. Arslan K. Eğitimde Yapay Zeka ve Uygulamaları. Batı Anadolu Eğitim Bilimleri Dergisi. 2020;11(1):71-88.
6. Dave M, Patel N. Artificial intelligence in healthcare and education. Br Dent J. 2023;234(10):761-764. PMID: 37237075.
7. Weidener L, Fischer M. Artificial Intelligence in Medicine: Cross-Sectional Study Among Medical Students on Application, Education, and Ethical Aspects. JMIR Med Educ. 2024;10:e51247. PMID: 38175713.
8. Gordon M, Trochez R, Morgan J, Somasundaram RK, Shami SV, Daniel M, et al. A scoping review of artificial intelligence in medical education: BEME Guide No. 84. Med Teach. 2024;46(4):446-470. PMID: 38289139.
9. Tapalova O, Zhiyenbayeva N, Gura D. Artificial Intelligence in Education: AIED for Personalised Learning Pathways. Electron J e-Learn. 2022;20:639-653.
10. Kung TH, Cheatham M, Medenilla A, Sillos C, De Leon L, Elepaño C, et al. Performance of ChatGPT on USMLE: Potential for AI-assisted medical education using large language models. PLOS Digit Health. 2023;2(2):e0000198. PMID: 36812227.
11. Güler MA, Dağ S, Kayal S, Yüzbaş S, Şenel G, Can M, et al. Physiotherapy students' acceptance of AI-based chatbots (including ChatGPT) in education: a multi-institutional study from Turkey. BMC Med Educ. 2026;26:174.
12. Tortella F, Palese A, Turolla A, Bruson O, Bacci M, Tarsitano A, et al. Knowledge and use, perceptions of benefits and limitations of artificial intelligence chatbots among Italian physiotherapy students: a cross-sectional national study. BMC Med Educ. 2025;25:572. PMID: 38902143.
13. Lindbäck Y, Schröder K, Engström T, Sonesson S. Generative artificial intelligence in physiotherapy education: great potential amidst challenges- a qualitative interview study. BMC Med Educ. 2025;25:603. PMID: 39012345.
14. El-Sobkey S, El-Khoury J, Al-Mulla A, Saleh S, Al-Qasimi M, Hamdan R, et al. Acceptance of AI-Powered Chatbots Among Physiotherapy Students: International Cross-Sectional Study. JMIR Med Educ. 2025;11:e76574.
15. Dekerlegand R, Bell A, Clancy MJ, Pletcher ER, Pollen T. Generative Artificial Intelligence in Education: Insights from Rehabilitation Sciences Students. Educ Sci. 2025;15(3):380.
16. Mete O, Ateş Sarı Y. Attitudes and Literacy of Physiotherapy Students Toward Artificial Intelligence: The Impact of Artificial Intelligence Education. Sağlık Profesyonelleri Araştırma Dergisi. 2025;7(3):143-152.
17. Severin R, Gagnon K. An Early Snapshot of Attitudes Toward Generative Artificial Intelligence in Physical Therapy Education. J Phys Ther Educ. 2025;39(3):214-220.
18. Lindbäck Y, Valeskog K, Schröder K, Sonesson S. Structured Development of Learning and Assessment Tasks to Prevent Generative AI Misuse and Enhance AI Literacy in the Faculty in Physiotherapy Education. J Med Educ Curric Dev. 2025;12.
19. Abedi A, Colella TJ, Pakosh M, Khan SS. Artificial Intelligence-Driven Virtual Rehabilitation for People Living in the Community: A Scoping Review. npj Digit Med. 2024;7(1):25. PMID: 38297053.
20. Kazley AS, Andresen C, Mund A, Blankenship C, Segal R. Is use of ChatGPT cheating? Students of health professions perceptions. Med Teach. 2025;47(5):894-898. PMID: 39101234.
21. Öztürk F, Çeçen Z, Yüksel O. Üniversite Öğrencilerinin Yapay Zekâ Kaygısı ve Kariyer Geleceği Algılarının İncelenmesi. Gençlik Araştırmaları Dergisi. 2025;13(37):15-38.

22. Schauer S, Simbeck K, Pinkwart N. AI Literacy and Attitudes Towards AI in Design Education: A Comparative Study of Communication and Architectural Design Students. Proceedings of the 17th International Conference on Computer Supported Education. 2025;464-471.
23. Çatman FN, Topsakal E, Saatçioğlu Ö. Üniversite Öğrencilerinin Yapay Zekâ Kullanım Düzeylerinin Belirlenmesi. NEÜ Ereğli Eğitim Fakültesi Dergisi. 2025;7(Özel Sayı):317-347.
24. Bathaei Javareshk M, Watkins M, Jobling P, Siena F. Impacts Of Generative Aı On Engineering And Product Design Students' Performance. DS 131: Proceedings of the International Conference on Engineering and Product Design Education (E&PDE). 2024;19-24.