

# JOURNAL OF HACETTEPE UNIVERSITY PHYSICAL THERAPY AND REHABILITATION

## Editor in Chief

Özlem Ülger PT PhD Prof

Hacettepe University  
Physical Therapy and  
Rehabilitation Faculty

**2025**

**Volume: 3**

**Issue: 2**

## Editors

İrem Düzgün PT PhD Prof

Hacettepe University  
Physical Therapy and  
Rehabilitation Faculty

Muhammed Kılınç PT PhD  
Prof

Hacettepe University  
Physical Therapy and  
Rehabilitation Faculty

Hacettepe University Faculty of Physical Therapy and Rehabilitation Journal is an international scientific, open-access, free-of-charge journal published electronically in accordance with the principles of independent, impartial, and double-blind refereeing.

The journal is the official publication of the Hacettepe University Faculty of Physical Therapy and Rehabilitation and is published 3 times a year: in January, May, and October. The publication language of the journal is English.

The journal publishes original research articles, review articles, case reports, and letters to the editor that are prepared in accordance with ethical rules in the field of related health fields, including physiotherapy and rehabilitation.

## Assistant Editors

Hande Güney Deniz PT PhD Prof

Hacettepe University  
Physical Therapy and  
Rehabilitation Faculty

İpek Gürbüz PT PhD Prof

Hacettepe University  
Physical Therapy and  
Rehabilitation Faculty

Selen Serel Arslan PT PhD Prof

Hacettepe University  
Physical Therapy and  
Rehabilitation Faculty

Ebru Çalık Kütükçü PT PhD Prof

Hacettepe University  
Physical Therapy and  
Rehabilitation Faculty

Kıvanç Delioğlu PT PhD Assist Prof

Hacettepe University  
Physical Therapy and  
Rehabilitation Faculty

Kübra Seyhan Bıyık PT PhD Assist Prof

Hacettepe University  
Physical Therapy and  
Rehabilitation Faculty

Burcu Talu PT PhD Assoc Prof

İnönü University  
Faculty of Health Sciences  
Physical Therapy and  
Rehabilitation Department

## Advisory Board

**Akmer Mutlu PT PhD Prof**

Hacettepe University, Physical Therapy and Rehabilitation Faculty

**Razak Özdiñler PT PhD Prof**

Biruni University, Faculty of Health Sciences, Physical Therapy and Rehabilitation Department

**Ayşe Karaduman PT PhD Prof**

Lokman Hekim University, Faculty of Health Sciences, Physical Therapy and Rehabilitation Department

**Ayşe Livanelioğlu PT PhD Prof**

Hacettepe University, Physical Therapy and Rehabilitation Faculty

**Ayşe Nur Tunalı PT PhD Prof**

İstanbul Medipol University, Faculty of Health Sciences, Physical Therapy and Rehabilitation Department

**Bülent Elbasan PT PhD Prof**

Gazi University, Faculty of Health Sciences, Physical Therapy and Rehabilitation Department

**Burcu Semin Akel PT PhD Prof**

İstanbul Kültür University, Faculty of Health Sciences, Physical Therapy and Rehabilitation Department

**Çiğdem Ayhan Kuru PT PhD Prof**

Hacettepe University, Physical Therapy and Rehabilitation Faculty

**Defne Kaya Utlu PT PhD Prof**

Health Sciences University, Faculty of Health Sciences, Physical Therapy and Rehabilitation Department

**Deniz İnal İnce PT PhD Prof**

Hacettepe University, Physical Therapy and Rehabilitation Faculty

**Deran Oskay PT PhD Prof**

Gazi University, Faculty of Health Sciences, Physical Therapy and Rehabilitation Department

**Edibe Ünal PT PhD Prof**

Hacettepe University, Physical Therapy and Rehabilitation Faculty

**Fatih Erbahçeci PT PhD Prof**

Hacettepe University, Physical Therapy and Rehabilitation Faculty

**Feryal Subaşı PT PhD Prof**

Yeditepe University, Faculty of Health Sciences, Physical Therapy and Rehabilitation Department

**Filiz Can PT PhD Prof**

Hacettepe University, Physical Therapy and Rehabilitation Faculty

**Funda Demirtürk PT PhD Prof**

Tokat Gazi Osman Paşa University, Faculty of Health Sciences, Physical Therapy and Rehabilitation Department

**Gülden Polat PT PhD Prof**

Marmara University, Faculty of Health Sciences, Physical Therapy and Rehabilitation Department

**Habibe Serap İnal PT PhD Prof**

Galata University, Faculty of Health Sciences, Physical Therapy and Rehabilitation Department

**Hayri Baran Yosmaoğlu PT PhD Prof**

Başkent University, Faculty of Health Sciences, Physical Therapy and Rehabilitation Department

**İpek Yeldan Karagöz PT PhD Prof**

İstanbul University-Cerrahpaşa, Faculty of Health Sciences, Physical Therapy and Rehabilitation Department

**Assistant Editors**

Cevher Demirci PT PhD Assoc  
Prof

Balıkesir University  
Faculty of Health Sciences  
Physical Therapy and  
Rehabilitation Department

Gürkan Günaydın PT PhD Assoc  
Prof

Aydın Adnan Menderes  
University  
Faculty of Health Sciences  
Physical Therapy and  
Rehabilitation Department

Sabiha Bezgin PT PhD Assist  
Prof

Hatay Mustafa Kemal University  
Faculty of Health Sciences  
Physical Therapy and  
Rehabilitation Department

Özgün Uysal MSc PT

Hacettepe University  
Physical Therapy and  
Rehabilitation Faculty

**Technical Editors**

Sibel Bozgeyik PT PhD Assist  
Prof

Hacettepe University  
Physical Therapy and  
Rehabilitation Faculty

Aybüke Fanuscu MSc PT

Hacettepe University  
Physical Therapy and  
Rehabilitation Faculty

**Kezban Bayramlar PT PhD Prof**

Hasan Kalyoncu University, Faculty of Health Sciences, Physical Therapy and Rehabilitation  
Department

**Mehmet Gürhan Karakaya PT PhD Prof**

Muğla Sıtkı Koçman University, Faculty of Health Sciences, Physical Therapy and Rehabilitation  
Department

**Melda Sağlam PT PhD Prof**

Hacettepe University, Physical Therapy and Rehabilitation Faculty

**Mintaze Kerem Günel PT PhD Prof**

Hacettepe University, Physical Therapy and Rehabilitation Faculty

**Naciye Vardar Yağlı PT PhD Prof**

Hacettepe University, Physical Therapy and Rehabilitation Faculty

**Necmiye Ün Yıldırım PT PhD Prof**

Health Sciences University, Gülhane Physiotherapy and Rehabilitation Faculty

**Nevin Ergun PT PhD Prof**

Sanko University, Faculty of Health Sciences, Physical Therapy and Rehabilitation Department

**Nezire Köse PT PhD Prof**

Hacettepe University, Physical Therapy and Rehabilitation Faculty

**Nilgün Bek PT PhD Prof**

Lokman Hekim University, Faculty of Health Sciences, Physical Therapy and Rehabilitation  
Department

**Nilüfer Çetişli Korkmaz PT PhD Prof**

Pamukkale University, Physical Therapy and Rehabilitation Faculty

**Öznur Yılmaz PT PhD Prof**

Hacettepe University, Physical Therapy and Rehabilitation Faculty

**Semra Topuz PT PhD Prof**

Hacettepe University, Physical Therapy and Rehabilitation Faculty

**Serap Özgül PT PhD Prof**

Hacettepe University, Physical Therapy and Rehabilitation Faculty

**Sevgi Özalevli PT PhD Prof**

Dokuz Eylül University, Faculty of Health Sciences, Physical Therapy and Rehabilitation  
Department

**Sevil Bilgin PT PhD Prof**

Hacettepe University, Physical Therapy and Rehabilitation Faculty

**Sibel Aksu Yıldırım PT PhD Prof**

Hacettepe University, Physical Therapy and Rehabilitation Faculty

**Songül Atasavun Uysal PT PhD Prof**

Hacettepe University, Physical Therapy and Rehabilitation Faculty

**Tülin Düger PT PhD Prof**

Hacettepe University, Physical Therapy and Rehabilitation Faculty

**Türkan Akbayrak PT PhD Prof**

Hacettepe University, Physical Therapy and Rehabilitation Faculty

**Tüzün Fırat PT PhD Prof**

Hacettepe University, Physical Therapy and Rehabilitation Faculty

**Umut Baki Tugay PT PhD Prof**

Muğla Sıtkı Koçman University, Faculty of Health Sciences, Physical Therapy and Rehabilitation  
Department

**Volga Bayrakçı Tunay PT PhD Prof**

Hacettepe University, Physical Therapy and Rehabilitation Faculty

**Technical Editors**

Yasemin Özel Aslıyüce MSc PT

Hacettepe University  
Physical Therapy and  
Rehabilitation Faculty

Utku Berberoğlu PT PhD

Balıkesir University  
Faculty of Health Sciences  
Physical Therapy and  
Rehabilitation Department

Mert Doğan PT PhD

Akdeniz University  
Faculty of Health Sciences  
Physical Therapy and  
Rehabilitation Department

Murat Emirzeoğlu PT PhD

Karadeniz Teknik University  
Faculty of Health Sciences  
Physical Therapy and  
Rehabilitation Department

Gamze Demirkan MSc. PT.

Gazi Univeristy  
Faculty of Health Sciences  
Physical Therapy and  
Rehabilitation Department**Ethic Advisory**

Hande Güney Deniz PT PhD Prof

**Statistics Advisors**

Salih Bardakçı PT PhD Assoc Prof

**Yeşim Bakar PT PhD Prof**İzmir Bakırçay University, Faculty of Health Sciences, Physical Therapy and Rehabilitation  
Department**Zafer Erden PT PhD Prof**

Hacettepe University, Physical Therapy and Rehabilitation Faculty

**Zeliha Candan Algun PT PhD Prof**İstanbul Medipol University, Faculty of Health Sciences, Physical Therapy and Rehabilitation  
Department**Zübeyir Sarı PT PhD Prof**Marmara University, Faculty of Health Sciences, Physical Therapy and Rehabilitation  
Department**Ayla Fil Balkan PT PhD Assoc Prof**

Hacettepe University, Physical Therapy and Rehabilitation Faculty

**Aynur Demirel PT PhD Assoc Prof**

Hacettepe University, Physical Therapy and Rehabilitation Faculty

**Ceren Gürşen PT PhD Assoc Prof**

Hacettepe University, Physical Therapy and Rehabilitation Faculty

**Gizem İrem Kınıklı PT PhD Assoc Prof**

Hacettepe University, Physical Therapy and Rehabilitation Faculty

**Gürsoy Coşkun PT PhD Assoc Prof**

Hacettepe University, Physical Therapy and Rehabilitation Faculty

**Numan Demir PT PhD Assoc Prof**

Hacettepe University, Physical Therapy and Rehabilitation Faculty

**Vesile Yıldız Kabak PT PhD Assoc Prof**

Hacettepe University, Physical Therapy and Rehabilitation Faculty

**Yeliz Salcı PT PhD Assoc Prof**

Hacettepe University, Physical Therapy and Rehabilitation Faculty

**Bilgenur Yardımcı Lokmanoğlu PT PhD Assist Prof**

Hacettepe University, Physical Therapy and Rehabilitation Faculty

**Ender Ayvat PT PhD Assoc Prof**

Hacettepe University, Physical Therapy and Rehabilitation Faculty

**Fatma Ayvat PT PhD Assist Prof**

Hacettepe University, Physical Therapy and Rehabilitation Faculty

**Hasan Erkan Kılınç PT PhD Assoc Prof**

Hacettepe University, Physical Therapy and Rehabilitation Faculty

**Hatice Çetin PT PhD Assist Prof**

Hacettepe University, Physical Therapy and Rehabilitation Faculty

**Numan Bulut PT PhD Assist Prof**

Hacettepe University, Physical Therapy and Rehabilitation Faculty

**Sibel Bozgeyik PT PhD Assist Prof**

Hacettepe University, Physical Therapy and Rehabilitation Faculty

**Şulenur Yıldız PT PhD Assoc Prof**

Hacettepe University, Physical Therapy and Rehabilitation Faculty