



This project is co-financed by the European Union
and the Republic of Türkiye



ICTürkiye2025
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PRESENTER FULL NAME: FATMA KANTAŞ YILMAZ

ORGANIZATION: UNIVERSITY OF HEALTH SCIENCES

WORKSHOP NAME:

PROJECT NAME: NEW HORIZONS IN PARKINSON'S IN THE ERA OF ARTIFICIAL
INTELLIGENCE: TELEREHA-BOT

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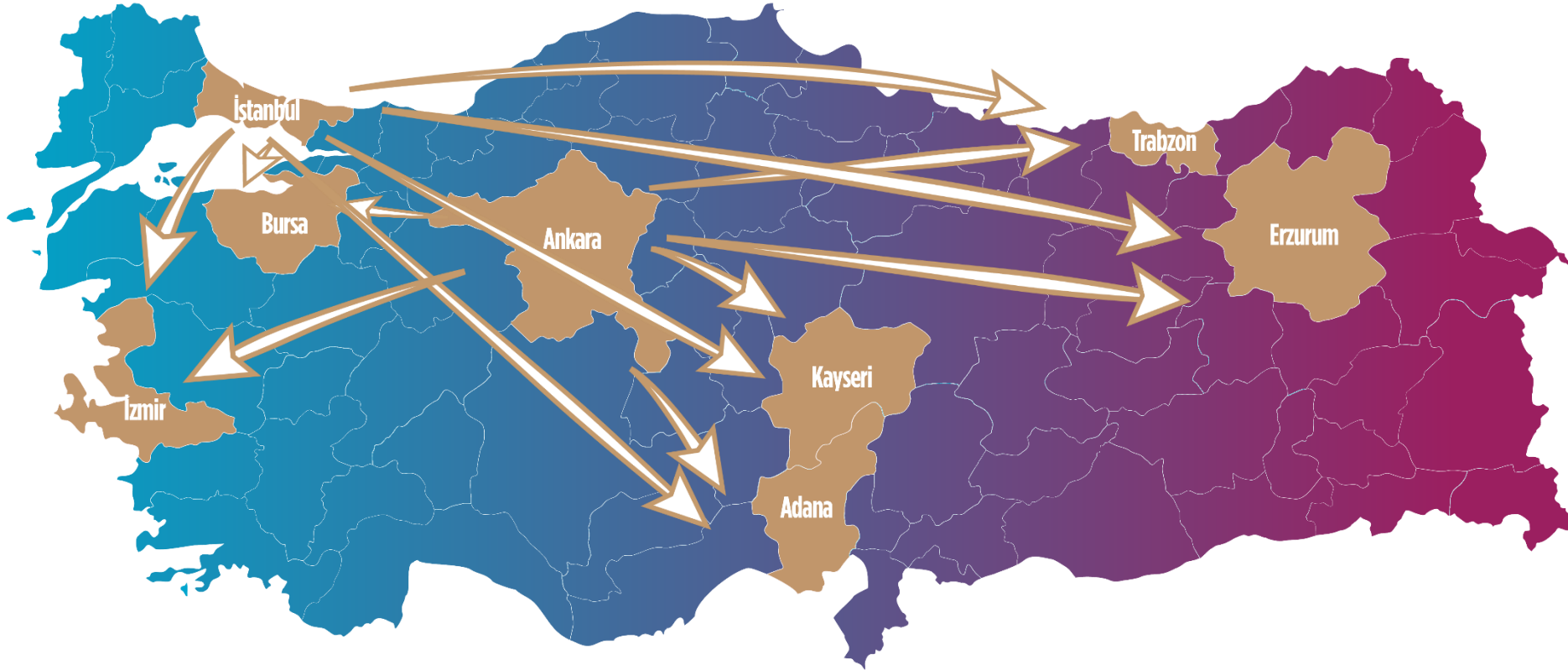


Description of the Organisation

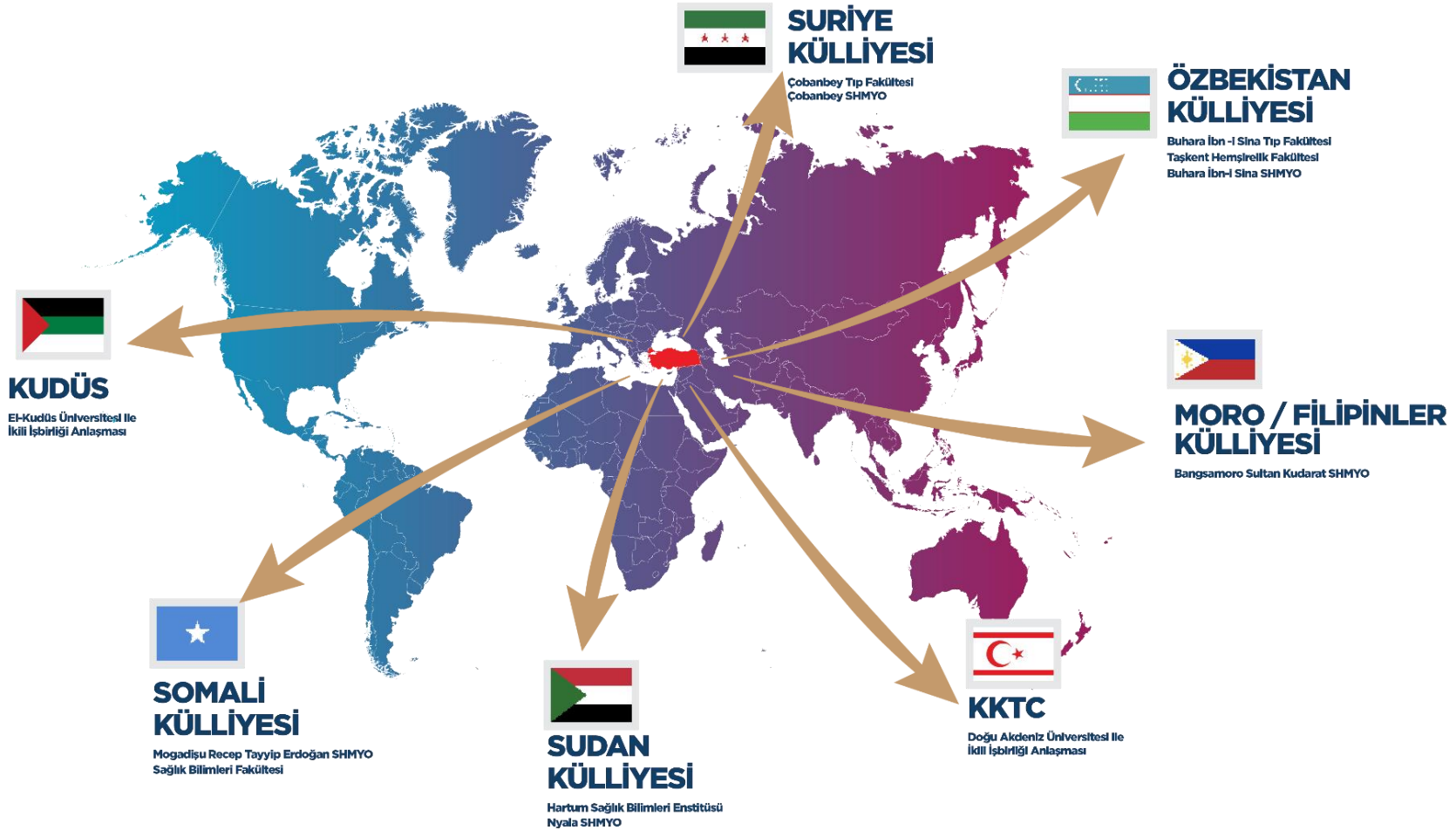
**Erenköy Physical Therapy
and Rehabilitation Hospital**

University of Health Sciences

**Istanbul Technical University
Üsküdar University**



**A total of 11 medical faculties
comprising 9 in Türkiye and 2 abroad.**



**University of Health Sciences offers a Turkish Diploma with
education in Turkish Language**



Academic Staff/Members

4000+



Published Articles in Web of Science

22.000+ (from 2016)



Students at Undergraduate Programs

24.000+



Students at Graduate Programs

1.000+



Health Practice and Research Centers (Training
and Research Hospitals-UHS affiliates)

60+



Residents at Medical Specialty Training
Programs

15.000+



PROF. DR.

1.617



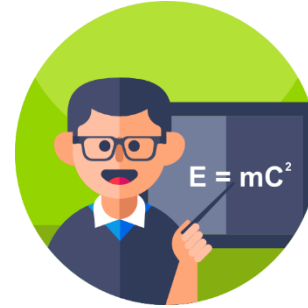
ASSOC PROF.

1.543



ASST. PROF.

742



LECTURER

120



**RESEARCH
ASSISTANT**

294

TOTAL



4.316



It is a branch hospital in the field of physical therapy and rehabilitation.

Patients are accepted from all over the country.

All of our patients receiving Inpatient Treatment Services are neurological rehabilitation patients.

We have experience in the field of telerehabilitation.



**Annual
Number of
Patients**

227.663



**Annual Number of
Physical Therapy and
Rehabilitation**

310.000



**Number of Annual
Neurological
Rehabilitation**

45.400



Coronavirus Telerehabilitation Support Program-KOREH

**507 patients underwent
telerehabilitation.**



Technology-Oriented, Sustainable Telerehabilitation Service Production and Qualified Workforce Training Project in Istanbul-İSTER

CP:32

Parkinson's:60

Hemiplegia:90

Speech Disorder/Aphasia: 61

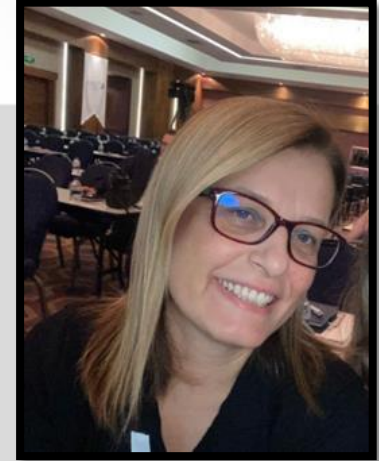
**İSTER Telerehabilitation Awareness
Training:6673**



Your Teams'
Expertise

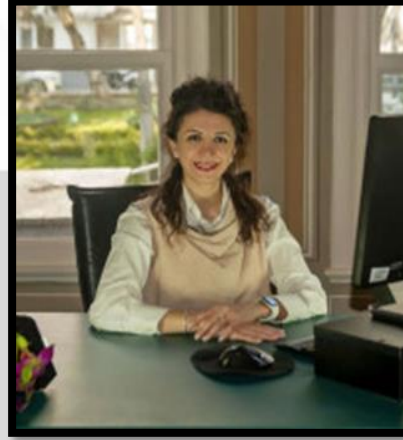


Assoc. Prof. Dr. Başak BİLİR, MD
Chief Physician
Physical Therapy and
Rehabilitation Specialist



Assoc. Prof. Dr. Fatma KANTAŞ
YILMAZ
Vice Dean
Director of the Health
Informatics Department

Your Teams'
Expertise



Dr. Pinar GÜNGÖR KETENCİ, PhD
Physical Therapy and
Rehabilitation Nurse and Quality
Management Specialist



Msc. Özlem ÖZTEKİN
Health Care
Services Manager

Your Teams'
Expertise



Prof. Türker Tekin ERGÜZEL
Vice Rector
Software Engineering



Assoc. Prof. Faik Boray TEK
Computer and Informatics
Artificial Intelligence and Data
Engineering

Your Teams'
Expertise



Mehmet Aziz ÇAKMAK
Lecturer
Technology Transfer
Office Manager



Project Idea

New Horizons in Parkinson's In The Era Of Artificial Intelligence: Telereha-bot

Call Topic: Horizon Europe - Work Programme 2023-2025, Destination 3. Tackling diseases and reducing disease burden

HORIZON-HLTH-2024-DISEASE-13-01 Single Stage

Deadline Dates: **26 November 2024 (Last Call)**

❑ **Objectives:** Implementation research for management of multiple long-term conditions in the context of non-communicable diseases (Global Alliance for Chronic Diseases - GACD)

○ **Expected Results:**

- Reduce health burden of diseases in the EU and worldwide
- Reduce premature mortality from NCDs
- Promoted mental health and well-being
- Strengthened research and innovation expertise, human capacities and know-how for combating communicable and non-communicable diseases
- Reduced (cross-border) health threat of epidemics and AMR pathogens, in the EU and worldwide
- Better knowledge of disease threats that allows to be involved and empowered to make and shape decisions for health and better adhere to knowledge-based disease management strategies and policies.

Main Problem

- The current technologies available do not adequately address the home rehabilitation needs of Parkinson's patients, particularly as the burden of the disease continues to rise.
- Additionally, there is a notable absence of suitable biomarkers for telerehabilitation and evidence-based chatbot applications that patients and their families can utilize to navigate the challenges they face.

Project Aim

- The primary objective of this project is to develop technological applications for home use that address the rehabilitation needs of Parkinson's patients, identify biomarkers capable of detecting alterations in EEG waves in these patients, and create a **evidence-based** chatbot for disease-specific information.

Stages of Projects

Project Management and Coordination

- Organisation of Teams and Patients. Implementation of the telerehabilitation process, software design, data collection, analysis, reporting, and sustainability, among other aspects.

Implementation of the Project

- Assessment of patients according to inclusion and exclusion criteria, implementation scales for suitable patients before telerehabilitation, EEG recording, and formulation of the rehabilitation plan.
- Rehabilitation of patients utilising telerehabilitation throughout 30 sessions.
- Neurocognitive exercises will be conducted with the physiotherapist using the Zoom platform.
- Reassessing the measurements and EEG recordings of patients using identical scales following telerehabilitation.
- The development of software designed to monitor all patient information and measurements and the telerehabilitation.
- The findings of the EEG will be analysed utilising artificial intelligence

Stages of Projects

Chatbot Development and Testing Process

- A chatbot model for Parkinson's patients will be developed in collaboration with Istanbul Technical University Artificial Intelligence Engineering Department.
- The chatbot will first be tested with a pilot study, then offered to Parkinson's patients throughout Türkiye.

Sustainability and Reporting Activities

- Telerehabilitation applications for Parkinson's patients will be disseminated throughout Türkiye
- Patients' clinical experience processes, pre- and post-effectiveness analyses regarding the measured parameters will be conducted and reported.
- Chatbot data will be analyzed during the 1-year usage period, patient experiences will be examined and reported.

Consortium - profile of known partners (if any)

No	Partner Name	Type	Country	Role in the Project
01	University of Health Sciences	University	Türkiye	Project Coordinator
02	Erenköy Physical Therapy and Rehabilitation Hospital	Hospital	Türkiye	Project Coordinator
03	Üsküdar University	University	Türkiye	Partner related to Artificial Intelligence
04	Istanbul Technical University	University	Türkiye	Partner related to design of Chatbot

Consortium – required partners

No	Expertise	Type	Country	Role in the project
01	Telerehabilitation	Hospital, Research Institute	European Countries	Implementation and Dissemination of project
02	Parkinson Disease	Hospital, Research Institute	European Countries	Implementation and Dissemination of project
03	Artificial Intelligence in Health	Research Institute, Company	European Countries	EEG Data analysis
04	Chatbot Design in Health	Research Institute, Company	European Countries	Chatbot implementation



PRESENTER CONTACT

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TÜRKİYE