

정택수 JEONG TAEKSOO

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PROFESSIONAL EXPERIENCE

2024.01

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현재

Clinical Research Coordinator

가톨릭관동대학교 국제성모병원 | 재활의학과

핵심 성과

- 3.9억 원 규모 다기관 R&D 프로젝트 총괄 관리
- SCI급 논문 제1저자 논문 1편 게재 (MDPI Healthcare)
- SCI급 논문 공동저자 1편 게재 (Frontiers in Neurology)
- 국내 학회 포스터 발표 2건 (대한재활의학회 추계학술대회)
- 보건복지부·한국보건산업진흥원 실증사업 중간보고회 Q&A 세션 진행

보건복지부 첨단의료지원관 국장, 의료정보정책과장, 보건산업진흥원 바이오헬스혁신본부장 등 주요 인사 참석, 디지털 헬스케어 실증 연구 관련 질의응답 진행

주요 업무

- AI 기반 디지털 인지훈련 치료제 다기관 무작위대조 임상시험(MCI·뇌졸중 대상) 총괄
- 대상자 모집·선정, IRB 심의, CRIS 등록, 연구비 집행 및 보고서 작성
- 임상시험 문서 관리, 데이터 품질 점검, 연구 진행 모니터링
- 교수진·간호사·치료사 등 다직종 협업을 통한 연구 프로세스 구축 및 개선
- 학술 논문 작성 및 학회 발표

2025.02

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2025.08

Clinical Research Associate (프리랜서)

(주)플코스킨 | 계약 만료

- 임상시험 초기 IRB 문서 검토

EDUCATION & CERTIFICATIONS

2017.03

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2023.02

전남과학대학교 | 간호학과 학사
간호사 면허 (No.494848) | 보건복지부 (2023.02)

PUBLICATIONS

1. AI-driven cognitive telerehabilitation for stroke: a randomized controlled trial

Frontiers in Neurology | Published: August 14, 2025 (공저자)

뇌졸중 환자를 위한 AI 기반 인지 원격재활의 임상 효과를 다기관 무작위 대조시험을 통해 검증한 연구로,
AI 재활이 치료사 감독형 재활과 동등한 인지 개선 효과를 보였음을 입증함

2. Designing a Generative AI Framework for Cognitive Intervention in Older Adults: An Engineering Protocol for Clinical Application

MDPI | Published: December 10, 2025 (제1저자)

고령자의 인지기능 저하와 디지털 배제를 해결하기 위해 생성형 AI 기반 3중
에이전트(Coach-Teacher-Companion) 시스템을 설계하고, 일상생활 속 자연스러운 인지훈련
흐름(Context-Adaptive Cognitive Flow)을 구현

공동 제1저자: 황건희 (홋카이도대학교 응용물리학 박사과정) | 교신저자: 김두영 교수 (가톨릭관동대 국제성모병원
재활의학과)

3. Artificial Intelligence-Guided Mobile Telerehabilitation for Individuals with Cognitive Impairment: A Feasibility Study

ARM | Under review (공저자)

AI 기반 모바일 인지 원격재활(Zenicog®) 프로그램이 경도인지장애·뇌졸중 환자에서 실행 가능하며 인지
기능 개선 효과가 잠재적으로 확인된다는 내용의 임상적 타당성 연구.

PROFESSIONAL DEVELOPMENT

교육 & 자격

- 임상시험 모니터요원(CRA) 신규자 과정 (1200분) | KONECT 국가임상시험지원재단 (2025.02)
- 임상연구와 AI | 고려대학교 의료원 (2024.07)
- Leadership | LinkedIn Learning (2024.05)
- Communication & Leadership | LinkedIn Learning (2024.05)

학회 참석

■ 대한재활의학회 춘계·추계 국제학술대회 (2024~2025, 총 4회)

CONFERENCE PRESENTATIONS

2024 추계 대한재활의학회

Artificial Intelligence-Guided Mobile Telerehabilitation for Subjects with Cognitive Impairment

P-34	Artificial Intelligence-Guided Mobile Telerehabilitation for Subjects with Cognitive Impairment
Name Jeon ¹ , Doo Young Kim ¹ , Taeksoo Jeong ² , Sue Been Kim ¹ , Bum-Suk Lee ¹ , Min Soo Kang ¹ , Si-Woon Park ¹	
¹ Department of Rehabilitation Medicine, International St. Mary's Hospital/Catholic Kwandong University College of Medicine, Incheon 22711, Korea	
² Department of Physical and Rehabilitation Medicine, Seonyang Hospital, Incheon	
Introduction	
• To test feasibility and usability of Artificial Intelligence (AI)-guided mobile cognitive telerehabilitation program for patients with stroke or older adults with mild cognitive impairment	
Method	
• Design: Case series with pre-post comparison.	
• Setting: A university hospital and a rehabilitation hospital	
• Participants: Thirteen subjects with cognitive impairment (Mild Mental State Examination (MMSE) < 20): 9 subjects with stroke and 4 subjects with MCI.	
• Intervention: Each participant used a mobile device (PC or smartphone) on which AI-guided mobile cognitive rehabilitation program (MMSE) was installed and instructed to go through total 24 sessions of 30-minutes training within 6 weeks.	
• Main Outcome Measures: Cognitive assessments included MMSE, digit span, trail making test A & B, Utility questionnaire consisted of equitable and flexibility in use, simple and intuitive use, perceptible information, tolerance for error, low physical effort, size and space for approach and use, overall quality of product and overall satisfaction.	
Results	
Thirteen subjects with cognitive impairment were enrolled, including nine stroke patients and four subjects with MCI. Two participants withdrew enrollment due to lack of motivation; one from the MCI group before the initial assessment and the other from the stroke group after the intervention. All remaining subjects completed all 24 sessions. The average age of the participants was 68.45 ± 8.61 years, with eight females (72.7%) and three males (27.3%). The average time of education was 12.3 ± 3.26 years. The stroke participants had experienced their condition for an average of 79.93 ± 52.3 days post-onset. (Table 1)	
The MMSE scores were significantly increased from 22.64 ± 3.93 at baseline to 26.18 ± 3.22 after intervention ($p=0.014$). Other cognitive measures, such as digit span (forward and backward) and trail making test B, showed improvement after intervention without statistical significance. The education level of the participants and flexibility in use of the those with 12 or more years of education. (Table 2)	
Table 1. General Characteristics and Comparison between MCI and Stroke Groups	
Table 2. Outcome measure analysis	
Conclusion	
• AI-guided mobile cognitive telerehabilitation program is feasible and potentially beneficial in improving cognitive function for patients with stroke or older adults with MCI. Special consideration should be given to those who are less familiar with electronic devices to improve its usability.	

Pre-intervention		Post-intervention		Change
MMSE	Total: 4.3 (4.1, 5.0)	Total: 26.18 (26.22)		0.014*
DSF	0.82	0.82		0.000
TMT-A	Total: 33 (28.32, 71.23)	Total: 42.1 (26.5, 46.2)		0.477
TMT-B	Total: 110 (64, 130)	Total: 77 (44.12, 107.26)		0.534
CEUQ	6.7 ± 2.1	10.1 ± 2.1		0.000
EQ-5D-5L	0.75 (0.42, 0.81)	0.81 (0.56, 0.86)		0.114
EQ-VAS	Total: 60 ± 25.69	Total: 61.8 ± 29.60		0.771
SIS-Q	2.68 (2.01, 3.35)	2.70 (2.01, 3.35)		0.000
SIAGS	Current Performance: MCI 1 (0.5, 1)	1 (0.0, 0)		0.157
Latent Capabilities	MCI 1 (0.5, 1)	0 (0, 0)		0.157
MSI	Stroke: 58 ± 25.30	71.3 ± 22.13		0.124

*p<0.05. Values, mean ± standard deviation. *Indicates significant difference between pre- and post-intervention. MCI: Mild Cognitive Impairment; DSF: Digit Span Forward; TMT-A: The Trail Making Test-A; TMT-B: The Trail Making Test-B; CEUQ: Cognitive Evaluation Unit; EQ-5D-5L: EuroQol Group-5D; EQ-VAS: EuroQol Group visual analog scale; SIS: Self-efficacy scale; SIAGS: Social Assessment of Daily Living; MSI: Modified Index of

(The overall quality of product: 4.00 ± 0.67
*p<0.05. Values, mean ± standard deviation;

• This research was supported by a grant of the Korean Health Technology R&D Project through the Korea Health Industry Development Institute (KHIDI), funded by the Ministry of Health & Welfare, Republic of Korea (Grant number: RS-2024-00263587).

2024 추계 대한재활의학회

Predictive Value of Cognitive Function and ALT for Functional Ambulation Gain in MCA Stroke Patients

P-36	Predictive Value of Cognitive Function and ALT for Functional Ambulation Gain in MCA Stroke Patients
Name Jeon ¹ , Taeksoo Jeong, Doo Young Kim ¹	
¹ Department of Rehabilitation Medicine, International St. Mary's Hospital/Catholic Kwandong University College of Medicine, Incheon 22711, Korea	
Introduction	
• Stroke is a leading cause of disability, significantly impacting mobility. Effective rehabilitation depends on accurate predictors of recovery. Recent studies suggest both cognitive function and certain initial laboratory biomarkers, such as aspartate transaminase (ALT), could be crucial for predicting recovery outcomes. This study investigates how cognitive function and ALT levels can predict functional ambulation improvements of middle cerebral artery (MCA) stroke.	
Participants	
• This retrospective study analyzed 87 patients who experienced a first-time middle cerebral artery (MCA) stroke and began rehabilitation within 30 days of their stroke, between June 2016 and June 2023 at a university hospital. Key covariates such as age, National Institutes of Health Stroke Scale (NIHSS), Barthel Index (BI), Mini-Mental State Examination (MMSE), and low-magnitude amylase transaminase (ALT) levels were considered. The total study population was 87 individuals, of whom 53 were men.	
Outcome Variables	
• The primary outcome was whether the patient achieved functional ambulation, measured using the Functional Ambulation Categories (FAC) scale, after short-term rehabilitation. A FAC score of 3 or higher indicated functional ambulation.	
Data Analysis	
• To identify predictors of ambulation recovery, multivariate binary logistic regression was used. Covariates like comorbidities, stroke type, lesion size, balance, and cognitive function were factored into the model.	
Results	
• Comparison of General Characteristics and Group Outcomes (Table 1)	
• The study found that individuals who did not achieve functional ambulation were older (69.4 vs. 61.2 years, $p = 0.004$) and had lower initial BBS and MMSE scores compared to those who regained ambulation ($p < 0.001$). Men were more likely to regain ambulation than women ($p = 0.033$). Extent of stroke and lesion size were associated with post-ambulation outcomes ($p < 0.001$). Among 32 participants with aphasia, all had functional hemiparesis, but aphasia incidence showed no significant difference between groups.	
Table 1. General Characteristics and Functional Ambulation After Subacute Rehabilitation	
Table 2. Binary Logistic Regression for Predicting Functional Ambulation	
Conclusion	
• Extremely low ALT levels, indicative of frailty, significantly predict poor recovery in MCA stroke patients. This study underscores the importance of routine biomarkers and cognitive assessments in enhancing prognostic accuracy and tailoring rehabilitation strategies to improve patient outcomes.	

*p<0.05. Values, mean ± standard deviation. **p<0.01. ***p<0.001. ****p<0.0001. *****p<0.00001. BI: Barthel Index; BBS: Barthel Index Scale; NIHSS: National Institutes of Health Stroke Scale; MMSE: Mini-Mental State Examination; ALT: Aspartate Transaminase; FAC: Functional Ambulation Category.

• This research was supported by a grant of the Korean Health Technology R&D Project through the Korea Health Industry Development Institute (KHIDI), funded by the Ministry of Health & Welfare, Republic of Korea (Grant number: RS-2024-00263587).

CORE COMPETENCIES

임상연구 전문 역량

다기관 임상시험 운영

데이터 관리

IRB · CRIS 관리

임상시험 문서 관리

대상자 모집·관리

학술 논문 작성

연구비 집행·관리

학회 발표

AI & 디지털 헬스케어

AI 활용
ChatGPT · Claude 등

디지털 치료제
임상연구 경험

디자인·협업 도구
Figma · Workspace

문현 분석
AI 기반 리서치