



The Long-Term Effect of Intensive Education on Patients with First-Ever Ischemic Stroke



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Objective

❖ The purpose of this study was to determine the effect of patient and caregiver education on long-term functional recovery, degree of sequelae, and quality of life in patients with first-ever ischemic stroke.

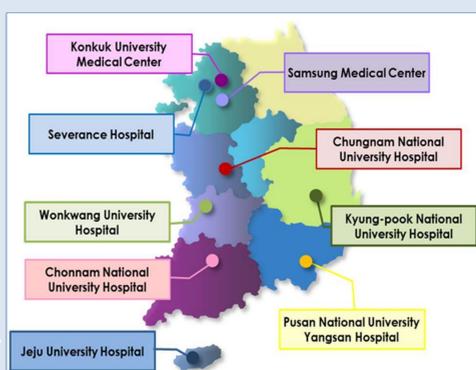
Methods

Design

• a propensity score matched cohort study.

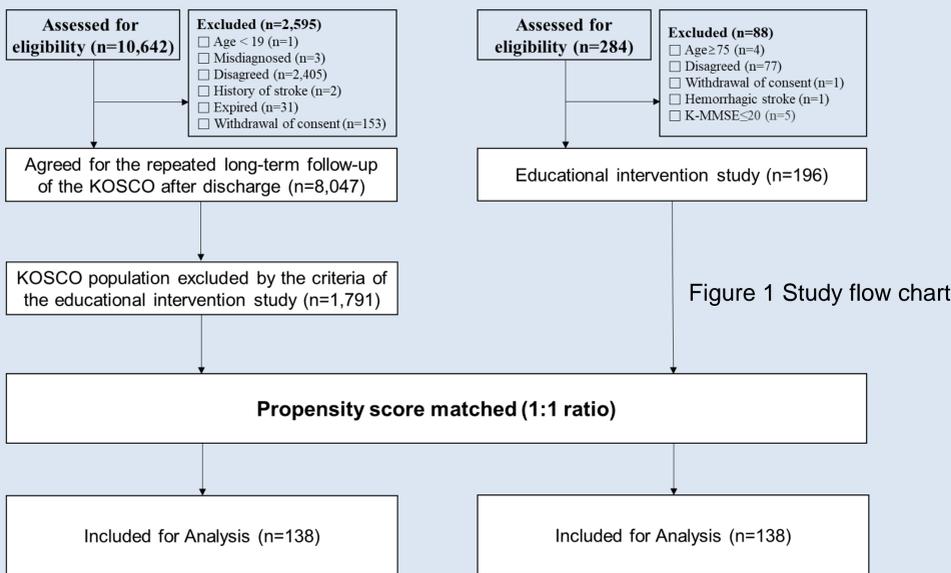
The Korean Stroke Cohort for Functioning and Rehabilitation Study (KOSCO)

- Large multi-center prospective cohort study in 9 hospitals of Korea
- All acute first-ever stroke patients admitted to participating hospitals
- A 10-year, longitudinal follow-up for residual disabilities, activity limitations and quality of life



Subjects of intervention group

Inclusion criteria	Exclusion criteria
1. Onset of symptoms within 7 days	1. Transient ischemic attack,
2. Onset age ≥ 19 years	2. Pre-morbid modified Rankin scale (mRS) of 2 or more,
3. Confirmed by brain CT, MRI, etc.	3. Korean Mini-Mental State Examination (K-MMSE) score of 20 or less,
4. First-ever acute ischemic stroke	4. Progressive or unstable stroke,
5. $1 \leq$ Initial K-NIHSS ≤ 5	5. Existing Neurogenic diseases,
6. Agree to informed consent	6. Existing serious psychiatric diseases,
	7. Serious medical diseases with a lifespan of less than 1 year



Functional evaluation item

- American Speech-Language-Hearing Association National Outcome Measurement System Swallowing Scale (ASHA-NOMS)
- Euro Quality of Life-5D (EQ-5D)
- Functional Ambulation Category (FAC)
- Functional Independence Measure (FIM)
- Fugl-Meyer Assessment (FMA)
- Geriatric Depression Scale (GDS)
- Korean version of Frenchay Aphasia Screening Test (K-FAST)
- Korean version of Modified Barthel Index (K-MBI)
- Korean Mini-Mental State Examination (K-MMSE)
- Korean version of National Institutes of Health Stroke Scale (K-NIHSS)
- modified Rankin Scale (mRS)

Statistical analysis

- Propensity score matching for the group matching
- Generalized estimating equations (GEE) - testing the group \times time interaction of clinical variables. Statistical significance, $p < 0.05$

Results

Table 1. Demographics and baseline clinical characteristics

Variables	After propensity score matching		
	Control group (n=138)	Intervention group (n=138)	P value
Age	58.22 \pm 9.81	59.64 \pm 10.42	0.247
Sex (male, %)	67.39	68.12	0.898
Body mass index	24.28 \pm 3.20	24.36 \pm 3.17	0.894
CCAS	4.64 \pm 1.62	4.77 \pm 1.56	0.497
Initial clinical parameters			
ASHA-NOMS	6.71 \pm 0.86	6.50 \pm 1.03	0.062
EQ-5D	0.8274 \pm 0.1820	0.8054 \pm 0.1446	0.313
FAC	3.91 \pm 1.38	3.93 \pm 1.15	0.890
FIM	110.53 \pm 18.04	111.92 \pm 15.10	0.488
FMA	92.00 \pm 19.63	94.23 \pm 9.05	0.227
GDS	5.80 \pm 4.13	5.00 \pm 3.68	0.143
K-MBI	85.46 \pm 18.91	85.33 \pm 15.49	0.950
K-MMSE	27.05 \pm 2.63	27.12 \pm 2.48	0.832
K-NIHSS	1.76 \pm 2.39	1.65 \pm 1.19	0.633
mRS	1.65 \pm 1.27	1.85 \pm 0.98	0.156

Conclusions

❖ Structured and intensive multi-session education for patients and caregivers following a first-ever stroke may have a positive long-term impact on the patient's quality of life and rehabilitation outcomes.

Results

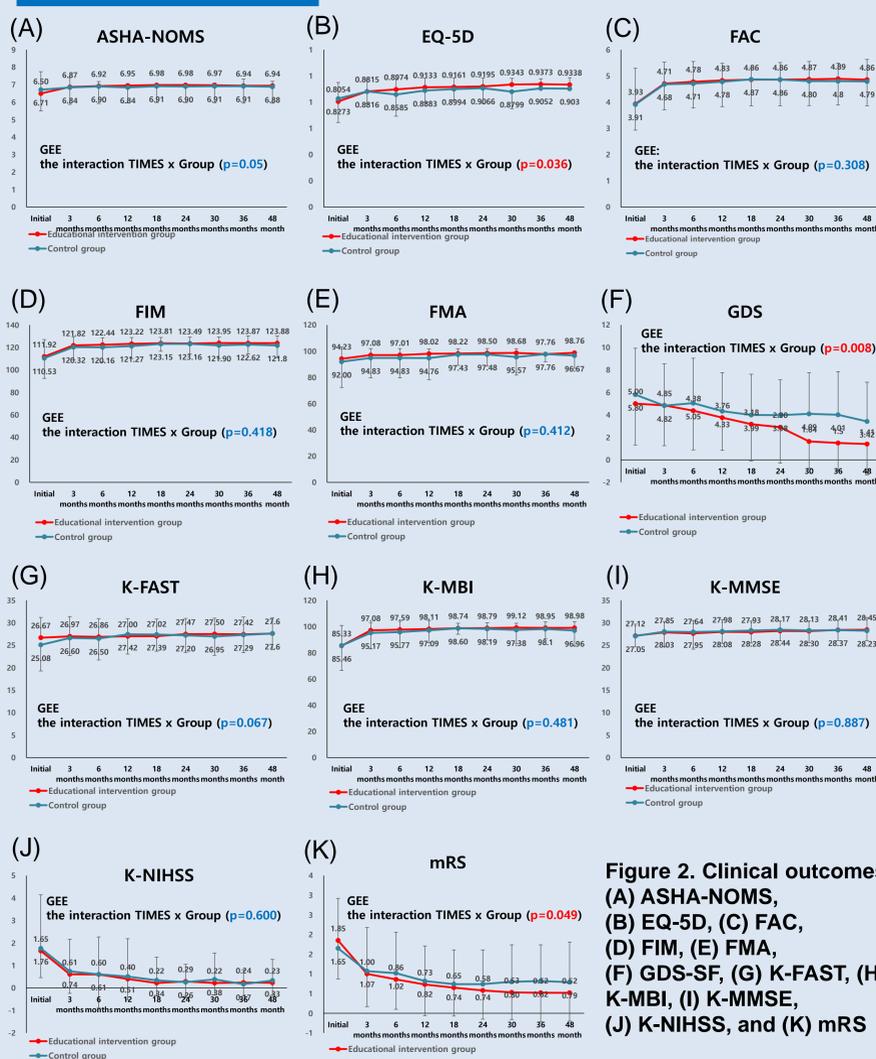


Figure 2. Clinical outcomes (A) ASHA-NOMS, (B) EQ-5D, (C) FAC, (D) FIM, (E) FMA, (F) GDS-SF, (G) K-FAST, (H) K-MBI, (I) K-MMSE, (J) K-NIHSS, and (K) mRS