

# Developing evaluation items for doctors in prescribing rehabilitation sports for persons with disabilities

: Focusing on physical, hearing, visual disabilities and brain lesions

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## Purpose

- This study is to select an evaluation items which necessary for doctors to write a prescription(doctor's note) to determine whether and to what extent a person with disabilities can perform rehabilitation sports(RS).

## Evaluation purpose

1. Assessment of **current health status** for RS participants
2. **Risk assessment** and classification
3. Identification of health status changes pre and post exercise and **suggestions for future plans**

## Evaluation target

- Persons with disabilities and those who are expected to become disabled within a certain period because it is difficult for them to fully recover from an injury or disease (by Act on guarantee of right to health and access to medical services for person with disabilities article 15)

## Subjects

- According to the status of registered disabilities by the Ministry of Health and Welfare, **the top four types of disability were selected.**

Physical disabilities (45.8%) > Hearing disabilities (15%) > Visual disabilities (9.6%) > Brain lesions (9.5%)

**Assessor** Doctors

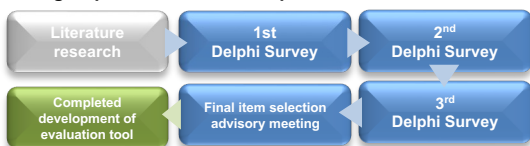
## Methods

### Delphi survey

- A Delphi Survey is a series of questionnaires that allow experts to develop ideas about potential future developments around an issue
- A **panel completed 3 rounds of Delphi survey** (Item Content Validity Index, I-CVI values of 0.7 or less were selected as risky items for deletion)
- Panel were composed of **29 doctors with 7 different specialist** (physiatrist, cardiologist, endocrinologist, otolaryngologist(audiology), oculist, psychiatrist, etc)

### Advisory meeting: Focus Group Interview, FGI

- The **FGI was conducted** using in-depth group interviews with a sample of doctors for each specialty.
- For FGI, **29 doctors** were divided into **5 groups**, and each **group consisted of 4-8 experts.**

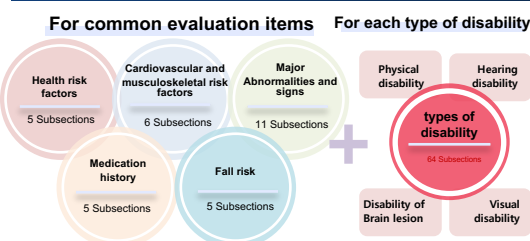


## Results

- Common evaluation items** and evaluation items for **each type of disability** are divided
- Common evaluation items are divided into **5 SECTIONS**
  1. Health risk factors
  2. Cardiovascular & musculoskeletal risk factors
  3. Major Abnormalities and signs
  4. Medication history
  5. Fall risk

+ **Each type of disability**
- The developed evaluation tool is divided for **doctors and participants**

## Classification of evaluation sections



## [For common evaluation items]

### STEP 1.

**Common Assessment**

- Health risk factors
  - Gender and age, Physical activity, Anamnesis, Body Mass Index, Health behavior knowledge
- Cardiovascular and musculoskeletal risk factors
  - Hypertension, Diabetes mellitus, Arrhythmia, Coronary artery disease, Heart failure, Osteoporosis
- Major Abnormalities & Signs
  - Cyanosis, Level of dyspnea & chest pain, Heart throbbing, Dizziness, Unregulated Hypertension, Hypertonia, Hypoglycemia, Decubitus, Range of motion
- Medication history
  - Beta blockers or alpha blockers, Hypertension medicine(except beta blockers) Diabetes mellitus, Inhalant, Antiplatelet agent, Anticoagulant
- Fall risk
  - History of falls within 6 months, Sense of balance, Gait disturbance, Visual impairment: double vision & low vision, History of fainting

## [For each type of disability]

### STEP 2.

**Physical disability**

- Amputation of upper and lower extremities
- Joint disorder of lower extremities
- Functional impairment of Upper & lower extremities
- Spinal disorder
- Deformity-related disabilities

**Hearing disability**

- Hearing aid
  - Worn / not worn
- Cochlear implant
  - Worn / not worn
- Degree of hearing loss
  - unable to hear at a distance of 40cm or more, unable to hear loud sounds in the ear
- Communication disorder
- Impaired balance function
  - time to stand on one foot with eyes closed

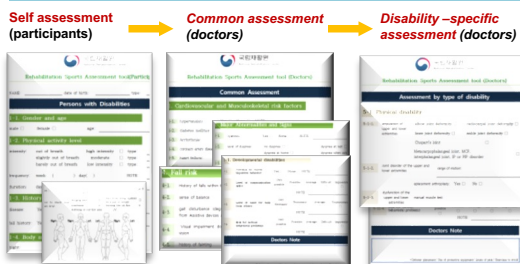
**Visual disability**

- Visual acuity
  - Best corrected visual acuity
  - Narrowed visual field
    - peripheral vision loss/ scotoma
- Presence of diplopia
  - within 20 degrees of fixation/ in the periphery

**Disability of brain lesion**

- Joint Range of Motion for affected side upper & lower limb
  - shoulder, elbow and forearm muscles, wrist, hip joint, knee, ankle
- Manual Muscle Test for affected side upper & lower limb(Grade0-5)
- Modified Bethel Index, MBI
- Neglect of one side of the body
- Language and communication impairment
- Deep brain stimulation, DBS
- Language and communication impairment
- Autonomic nervous system dysfunction

## Assessment tools



## Conclusion

- By developing a rehabilitation sports assessment tool for doctors, it is **possible to make evidence-based decisions** about who can safely participate in RS and to what extent.
- Ultimately, it is **possible to improve the quality of life of disabled people** by providing an appropriate and effective RS program.

## Acknowledgement

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