Rehabilitation for disability – how to do it?

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I have no potential conflict of interest to report
Outline

• Definitions
  • Rehabilitation
  • Functioning, disability
  • Active agency
• Prerequisites for effective rehabilitation
• Examples of evidence-based rehabilitation models
• Take home message
Definitions
What is rehabilitation?

- Rehabilitation is a process of change between a person and his/her environment. The aim is to promote person’s functioning and well-being.

- Focus is on
  - Person’s mastery and self-efficacy
  - Empowerment
  - Influence on environment

- In practice it is restoring, maintaining – AND often slowing down the deterioration of person’s functioning

- It is more than physiotherapy → cognitive, psychological and social rehabilitation
What is functioning?

• Functioning is a person’s ability to manage daily tasks
• Dependent on intrinsic capacity + environmental possibilities
• Functioning can be
  • Physical (ADL, IADL)
  • Psychological (cognition, mood, mastery, well-being)
  • Social (loneliness, social isolation, social activity)

Jette & Badley 2006, Jyrkämä 2007
What is disability?

Pathology → Physiological damages → Activity limitations → Disability

Diseases
- e.g. osteoarthritis
- stroke
- myocardial infarction
- dementia

Risk factors

Personal characteristics, e.g.:
- coping, life style
- Psychosocial resources

Environmental factors:
- Care of diseases, rehabilitation
- Social and physical environment
- Support

Development of disabilities

Nagi → Verbrugge & Jette, Soc Sci Med 1994; See also ICF; WHO 2001
"Catastrophic disability" – e.g. stroke

Sudden loss of functional abilities
→ Effect of rehabilitation is seen fast

Acute rehabilitation using expertise

Natural courses of the disease

Rehabilitation
Progressive disability — e.g. frailty

Progressive disability

→ Effect of rehabilitation is seen slowly

Rehabilitation with ideal adherence
Rehabilitation without good adherence

"Natural course"

Rehabilitation

Physical functioning

TIME
From functioning and disability to active agency

• Functioning is seldom a person’s permanent characteristic – it is dependent on environment, social support, expectations, motivation etc.

• Too often we focus on problems, functional limitations, disabilities – whereas older people show their best in optimistic and resource-oriented rehabilitation

Jette & Badley 2006, Jyrkämä 2007
What is active agency dependent on?

Intrinsic capacity

Demands of physical and social environment

Possibilities?
- technology

What does the person want?
- motivation, needs, priorities

What is expected and demanded?
- Cultural expectations

(Jyrkämä 2007)
Too often the older person is...

• Bystander and passive object for rehabilitation

• We talk about her problems over her using language she does not understand

• Older person does not internalize the goals of rehabilitation – and she should work for the goals!
Prerequisites for effective rehabilitation
Base for effective rehabilitation

- Evidence-based rehabilitation models, geriatric expertise, right target group
- Older person’s motivation
- Patient involvement in goal-setting (Levach et al. Cochrane 2015)
- Older person’s empowerment and support on self-management skills
- Patient centeredness
- Optimism, resource-oriented approach
Target groups

Nursing home

Multimorbid geriatric patients

Independent, home-dwelling elderly at risk

Good functioning, “Third age” Independent, home-dwelling
Examples of evidence-based rehabilitation
Geriatric expertise is effective
Comprehensive geriatric assessment (CGA)

• CGA has been tested in 29 trials evaluating 13,766 participants in nine countries (Ellis et al. 2017)
  • Patients more likely to be at home and alive at 3-12mo (RR 1.06)
  • Postpones nursing home admissions (RR 0.80)

• Complex interventions with expertise in older people tested in 89 trials (n=97984)(Beswick et al. 2008)
  • improves physical function
  • maintains independent living, reduces nursing home admissions

Rehabilitation with expertise in catastrophic disabilities

• Stroke rehabilitation units superior in patient outcomes over usual wards (Stroke trialists collaboration Cochrane 2013)
  • 28 trials (N=5855) → lower mortality in 12mo (OR 0.87)
  • lower odds of death or dependency or admission to nursing home at 12mo (OR 0.79)

• Orthopedic geriatric rehabilitation superior over usual care (Bachmann et al. BMJ 2010)
  • Improves phycial functioning
  • Lower risk for nursing home admission (RR 0.72)
  • Lower risk for mortality (RR 0.84)
EXERCISE – FOR EVERYBODY!
Strong evidence

- 121 RCTs on progressive resistance strength training (N=6700) (Liu & Latham Cochrane Database Syst Rev 2009):
  - Improves physical disability (33 trials)
  - Improves functional limitations (24 trials)
  - Improves muscle strength (73 trials)
  - Reduces pain in osteoarthritis

- Multicomponent group exercise reduces falls (N>60 000) (Gillespie et al. Cochrane 2012, Cameron et al. Cochrane 2012)


- Physical activity improves mood (11 trials) (Blake et al. Clin Rehab 2008)

- Effects can be seen in all levels of care and in all subgroups. It is never too late to start.
EXERCISE IN DEMENTIA
**FINALEX trial** (Pitkala et al. JAMA Intern Med 2013)

- Home-dwelling pts with AD, N=210 → 1-year training in 1. groups 2xwk 2. tailored home training 2x/wk 3. control

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**Prevents disability**

- LS mean change from baseline in FIM motor
  - Controls
  - Group rehabilitation
  - Home rehabilitation

**Improves cognition**

- LS mean change from baseline in Clock Drawing test
  - Controls
  - Group rehabilitation
  - Home rehabilitation

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- Prevents disability
- Improves cognition

P=0.022
### Exercise reduced falls

<table>
<thead>
<tr>
<th>Group exercise</th>
<th>Home exercise</th>
<th>Controls</th>
<th>P value</th>
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<tbody>
<tr>
<td>101</td>
<td>83</td>
<td>171</td>
<td>&lt;0.001</td>
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Those with advanced dementia benefitted even more than those with mild dementia.
Psychosocial rehabilitation
Loneliness predicts cognitive decline, disabilities and death...

- **Participants**: lonely older people (RCT; N=235, mean age 80)

- **Intervention**: psychosocial group intervention to empower older people and support their active agency. Facilitation of peer support + group dynamics.
  - 8/group . 1 day/wk for 3 months
  - Contents: art activities, exercise, writing, interaction

- **Results**:
  - More friends, QOL improved,
  - cognition improved

- **Use of health services decreased 34%** (p=0.020)

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Risk of death decreased in 3 years...

Mortality HR 0.39 (95% CI 0.15 to 0.98) P=0.044
Self-management coaching
Self-management groups for dementia couples

• Closed group of 10 people for 3 mo
  • Pts with dementia + spouses separately (=136 couples)

• Caregivers’ QOL improved

• Dementia patients’ cognition improved up to 9 mo

www.ystavapiiri.fi; Laakkonen et al. JAGS 2016
Nutritional rehabilitation
NuAD Trial (Suominen et al. JNHA 2015)

- 99 Alzheimer pts + caregivers randomized into two arms
- Tailored nutrition guidance based on assessments, in home visits, food diaries
- Protein intake increased
- Improved HrQOL
- Less falls
HOW TO DO IT?
T.H.M.
Process of rehabilitation

- CGA
- Measuring I → Validated scales
- Register of aims
- Care of comorbidities, optimizing drugs, minimizing risks
- Devices, Environmental changes, Supporting caregivers
- Involve older person and caregiver
- Multidisciplinary work
- Operations
- Home visit
- Measuring II → Validated scales
- Evaluation of rehabilitation achievements
- New goals
Take home messages

• Both *how* and *what*

• Empower older person and his/her caregiver
  • He/she will set the goals because he/she is doing the work
  • Effectiveness is dependent on patient’s active agency

• Support patient autonomy and active agency, involve family, intervene the environment

• Resource oriented care, optimism

• CGA – expertise

• EBM models + right target group
Thank you!