

Research priorities in rehabilitation

Definition of Physical and Rehabilitation Medicine

- ▶ is the primary medical specialty responsible for the prevention, medical diagnosis, treatment and rehabilitation management of persons of all ages with disabling health conditions and their co-morbidities, specifically addressing their impairments and activity limitations in order to facilitate their physical and cognitive functioning (including behavior), participation (including quality of life) and modifying personal and environmental factors
- ▶ Rehabilitation is a set of measures that assist individuals who experience, or are likely to experience, disability to achieve and maintain optimal functioning in interaction with their environments”.

Aims of the rehabilitation in the 2030 vision of WHO



- to remove barriers and improve access to health services.
- to strengthen and extend rehabilitation, habilitation, assistive technology, assistance and support services, and community-based rehabilitation.
- to strengthen collection of relevant and internationally comparable data on disability and support research on disability and related services.



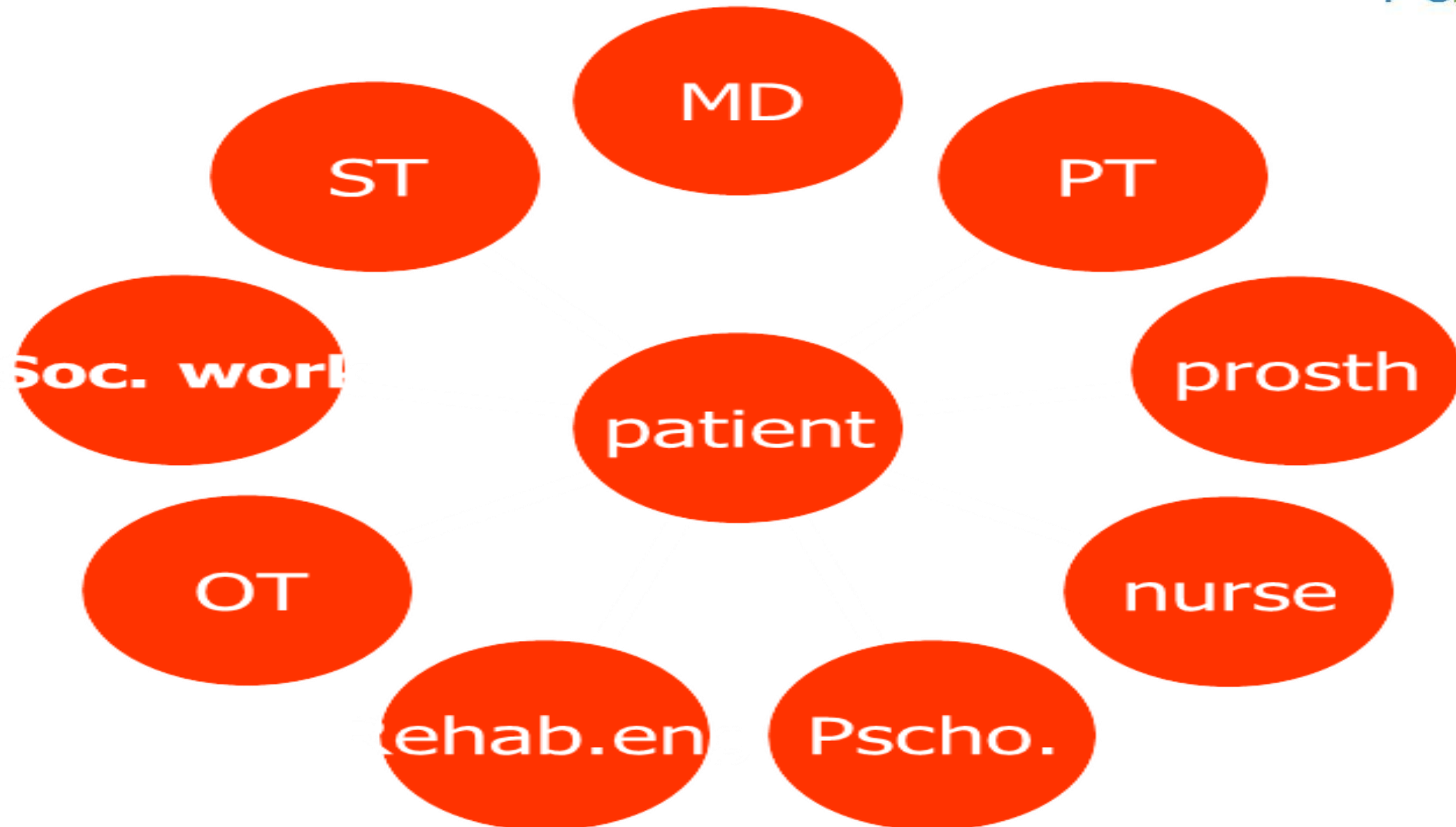
Approaches in rehabilitation



- ▶ Approach to reduce disability
- ▶ Approach to acquire new skills and strategies through which the impact of disability can be reduced
- ▶ Approach to help alter the environment, both the physical and social environment, so a disability carries with it as little handicap as possible.



Rehabilitation team



Types of Rehabilitation team

Multidisciplinary team

- Various professionals evaluate & treat the patient separately
- Each discipline has his specific goals
- Each discipline has his specific plans
- Patient progress is communicated through documentation and at team meetings
- The Sum ($1+1=2$)

Interdisciplinary team



- Professionals evaluate patient separately then they share assessment and draw goals later at meeting
- Goals of each discipline is then coordinated into a unified plan through the synergistic interaction of the team
- All Team participates in problem-solving and decision-making
- The sum ($1+1=>2$)



Transdisciplinary team

- Designed through cross-training of members & procedures to allow overlap of responsibilities among disciplines
- This overlap allows flexibility in problem-solving & give closer interdependence of members
- Leadership may differ for each patient
- Discipline with extensive involvement with patient may become the case manager and coordinate team efforts

OUTCOME MEASUREMENT IN REHABILITATION

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An Outcome Measure is a qualitative or quantitative measurement of outcome.

- generally in response to a rehabilitation intervention in the context of physiatry
- will be referred to as Rehabilitation Measure of Outcome (RMO) in this article.



- RMOs are vital to the practice of evidence-based medicine, and can be understood in the context of the World Health Organization International Classification of Functioning, Disability and Health, (WHO ICF).

Uses of RMOs:

- They help track changes in functioning at an individual as well as population level.
- They establish a common language that can be understood by all rehab professionals, patients and families, as well as insurance companies that influence health provision.

- They help provide feedback for improving clinical rehabilitation interventions, as well as answering research specific questions.
- While clinician-assessed measures focus on changes in impairments and activities, patient-reported outcome measures (PROM) help focus on how well the aforementioned domain improvements translate into participation.¹

Functional Independence Measure (FIM) scale as example of RMO:



- The most studied and validated rehabilitation outcome measure
- used in Inpatient Rehabilitation Facilities
- It was developed in 1987 by UDSMR to address the limitations of the Barthel Index.
- It is a global measure of the Burden of Care (BoC),
- assessing 13 motor and 5 cognitive tasks, on a:
- 1 (Dependent) to 7 (Independent) ordinal scale, with scores ranging from 18 (lowest) to 126 (highest).



Rehabilitation and research

Introduction

- Science and research in Physical and Rehabilitation Medicine (PRM) is relatively young, like the specialty, and have some peculiar challenges and specificities

Scientific research has been increasing over the past - mainly related to:

- biomedicine and technology,
- clinical practice with observational follow-up studies,
- randomized controlled trials (RCT)
- methodological studies, especially on outcome measurements

Importance of research PRM

- The field of competence for PRM requires the development of a strong scientific base for a broad range of distinct but related scientific fields
- Research is steadily growing and general knowledge of the human being increases.
- With shrinking resources, research should focus on how to do the same (or even better) procedures with less expenses
- EBM

Priorities of research topics in rehabilitation

- **Neurosciences:**

- traumatic brain injuries (TBI)
- Stroke
- Spinal cord injuries (SCI)

- **Health technologies**

•Selected topics after stroke andTBI



What are the best ways to improve cognition after stroke?

[Cognition: the function of processing information and applying knowledge. Functions include processes requiring thought and intelligence, such as attention, perception, learning, memory, comprehension, judgment and decision making

What are the best ways of helping people come to terms with the long term consequences of stroke?

What are the best treatments to improve balance, gait and mobility, including physiotherapy, gait rehabilitation, visual and auditory feedback, electrical stimulation, different types of ankle foot orthoses [splints] and electromechanical assisted gait training?



- What are the best ways to help people recover from aphasia?
- Improving function of upper limb after stroke?
- Uses of robotics for spinal cord injury Rehabilitation?
- Assistive technology in improving quality of life for people with disability.
- Robotics for improving function for people with disability.

Challenges for the future

- An ethical issues
- Public health with the demography of chronic diseases, the development of ageing-related impairments
 - a scientific one, with the development of the medical scientific knowledge
 - a technological one, demonstrated by the increasing use of imaging and research laboratories
 - an economic one, with the increase of the health expenses

• Thank you