

Evidence in Rehabilitation Between Facts and Prejudice

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Trusted evidence.
Informed decisions.
Better health.





Disclosure

Director of Cochrane Rehabilitation

Chief-Editor of the European Journal of Physical and Rehabilitation Medicine
(congress expenses)

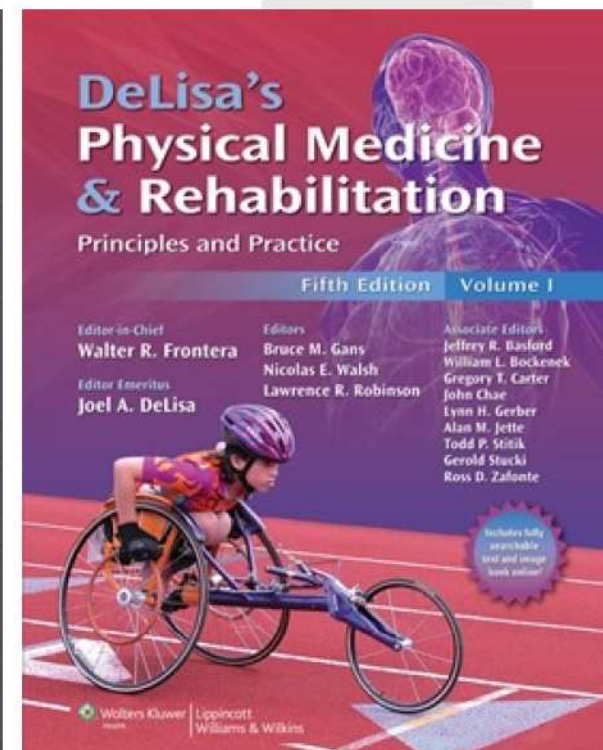
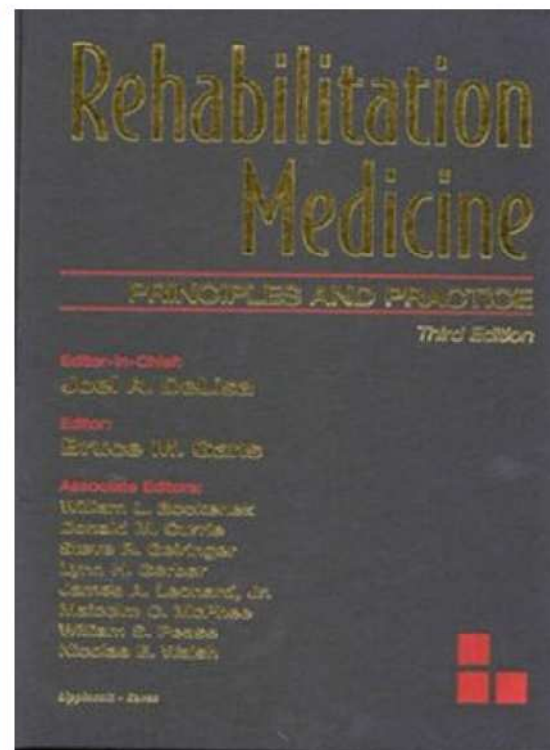
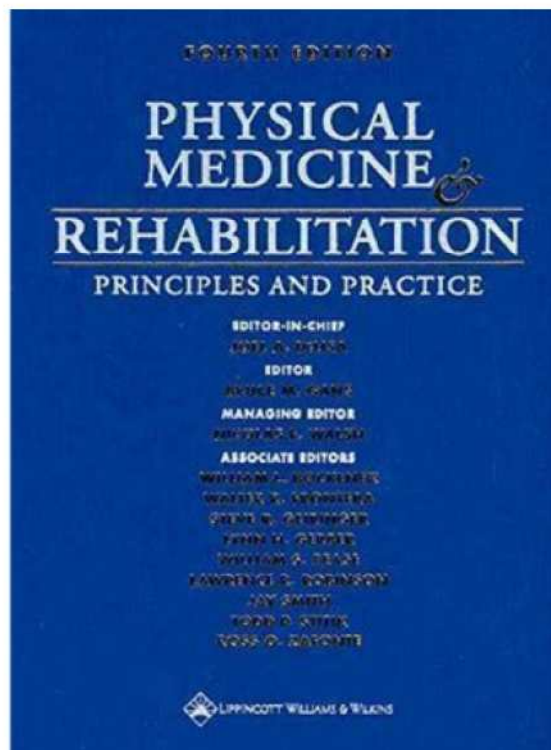
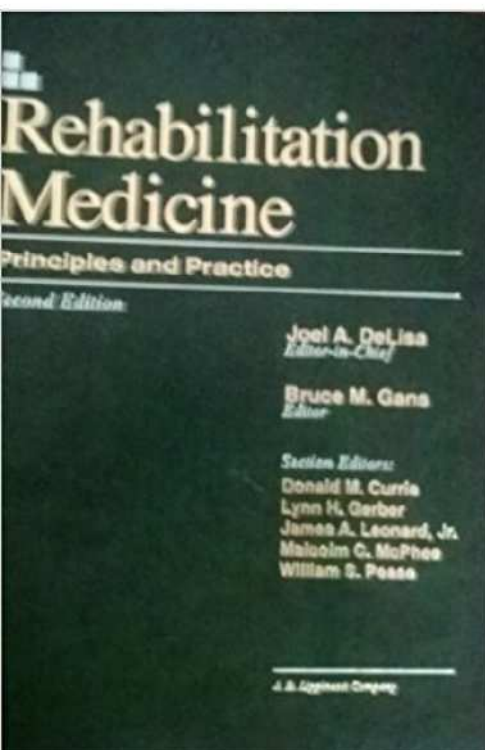
ISICO (Italian Scientific Spine Institute): stock

Medtronic: consultant



1. **Rauch A, et al.** Toward Strengthening Rehabilitation in Health Systems: Methods Used to Develop a WHO Package of Rehabilitation Interventions. **Arch Phys Med Rehabil.** 2019 Nov;100(11):2205-2211.
2. **Negrini S, et al.** Clinical replicability of rehabilitation interventions in randomized controlled trials reported in main journals is inadequate. **J Clin Epidemiol.** 2019 Oct;114:108-117
3. **Levack WMM, et al.** One in 11 Cochrane Reviews Are on Rehabilitation Interventions, According to Pragmatic Inclusion Criteria Developed by Cochrane Rehabilitation. **Arch Phys Med Rehabil.** 2019 Aug;100(8):1492-1498.
4. **Negrini S, et al.** The struggle for evidence in physical and rehabilitation medicine: publication rate of randomized controlled trials and systematic reviews is growing more than in other therapeutic fields. **Am J Phys Med Rehabil.** 2019 Apr;98(4):258-265.
5. **Negrini S, et al.** Cochrane Rehabilitation: 2018 annual report. **Eur J Phys Rehabil Med.** 2019 Apr;55(2):314–8.
6. **Negrini S.** DeLisa Lecture. Evidence in Rehabilitation Medicine: between facts and prejudices. **Am J Phys Med Rehabil.** 2019 Feb;98(2):88-96.
7. **Moretti A, et al.** The Cochrane Rehabilitation eBook: a knowledge translation tool to transfer evidence to different rehabilitation audiences. **Eur J Phys Rehabil Med.** 2018 Aug;54(4):622

DeLisa Lecture



Negrini S. DeLisa Lecture. Evidence in Rehabilitation Medicine: between facts and prejudices.
Am J Phys Med Rehabil. 2018 Aug 28. doi: 10.1097/PHM.0000000000001033.

**In rehabilitation
there is
no EVIDENCE**

A constant **boulder
on rehabilitation
shoulders**



Overview

Rehabilitation vs other health sectors

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-

Problems with evidence generation in rehabilitation

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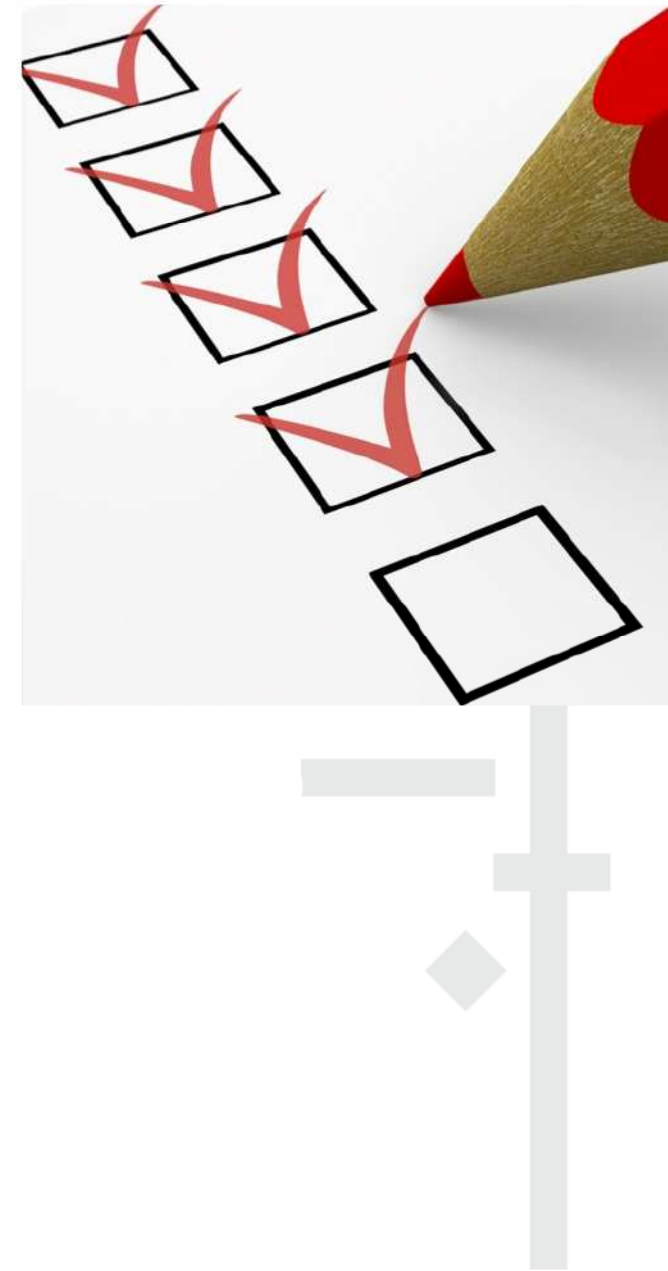
State of research in rehabilitation

-
-

Implementation of EBM in rehabilitation

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Challenges in the implementation of EBM in rehabilitation



Overview

Rehabilitation vs other health sectors

- The *Cochrane Rehabilitation* project: **rehabilitation definition**
- The *Cochrane Rehabilitation* project: **ebook table of contents**

Problems with evidence generation in rehabilitation

- The *Cochrane Rehabilitation* project: **the Replicability of RCTs in Everyday PRM Clinics (REREP)**
- The *Cochrane Rehabilitation* project: **the RCT in rehabilitation checklist (RCTRACK)**

State of research in rehabilitation

- The *Cochrane Rehabilitation* project: **prioritization**
- The *Cochrane Rehabilitation* project with WHO: **Best Evidence for Rehabilitation (be4rehab)**

Implementation of EBM in rehabilitation

- Knowledge Translation efforts of *Cochrane Rehabilitation*

Some other future solutions for EBM in rehabilitation

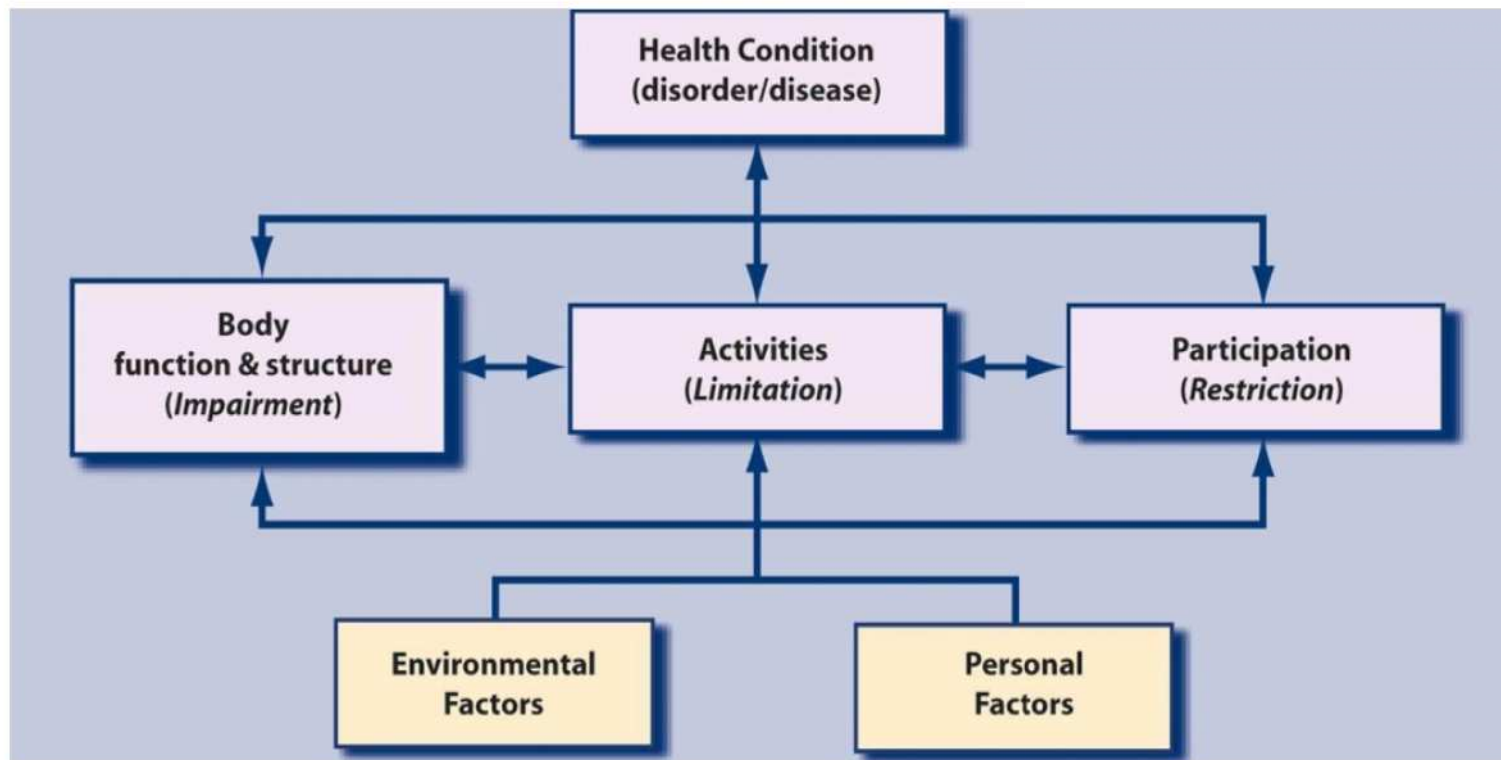




Rehabilitation vs other health sectors

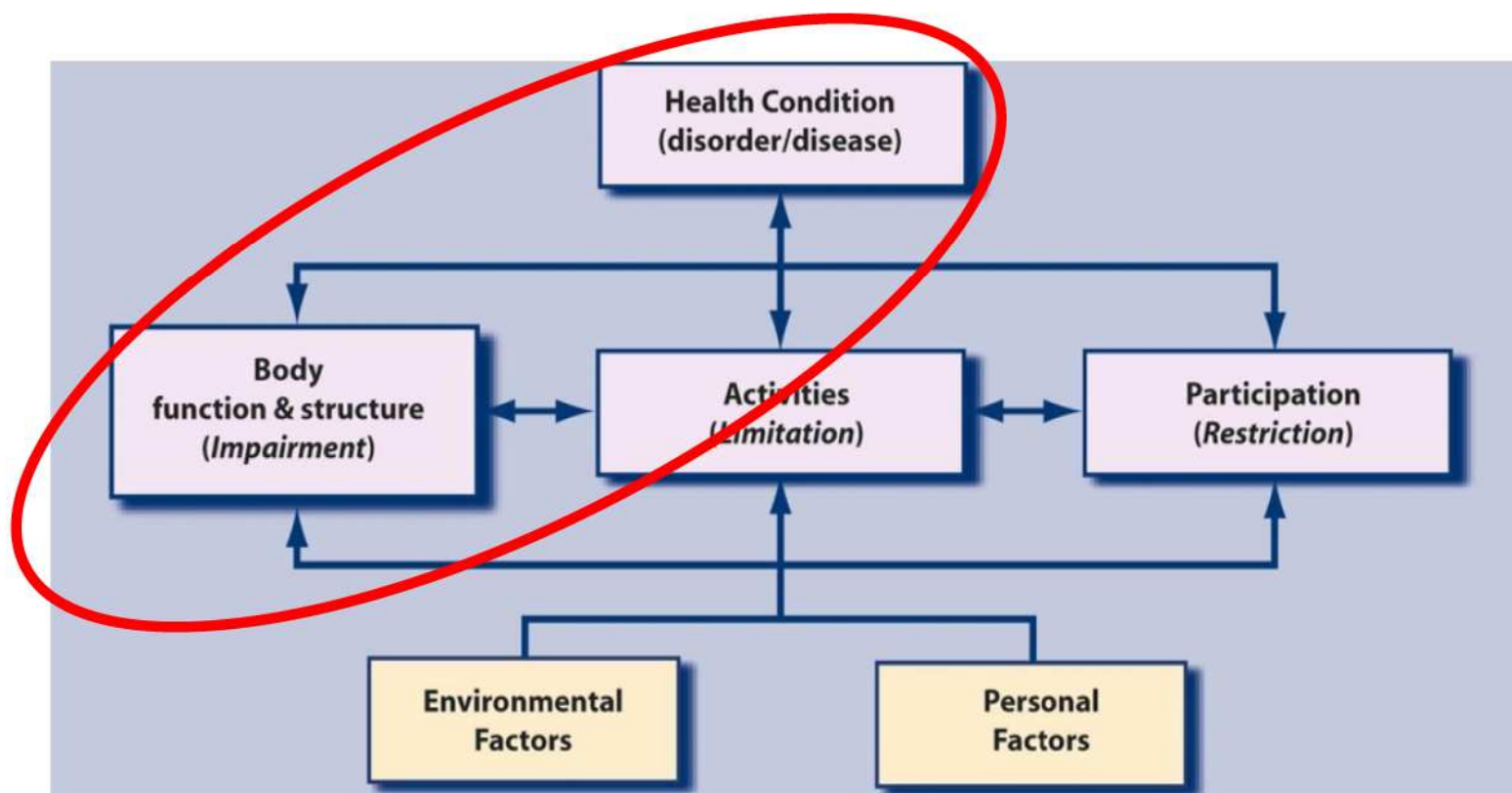
Trusted evidence.
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ICF biopsychosocial model (WHO)



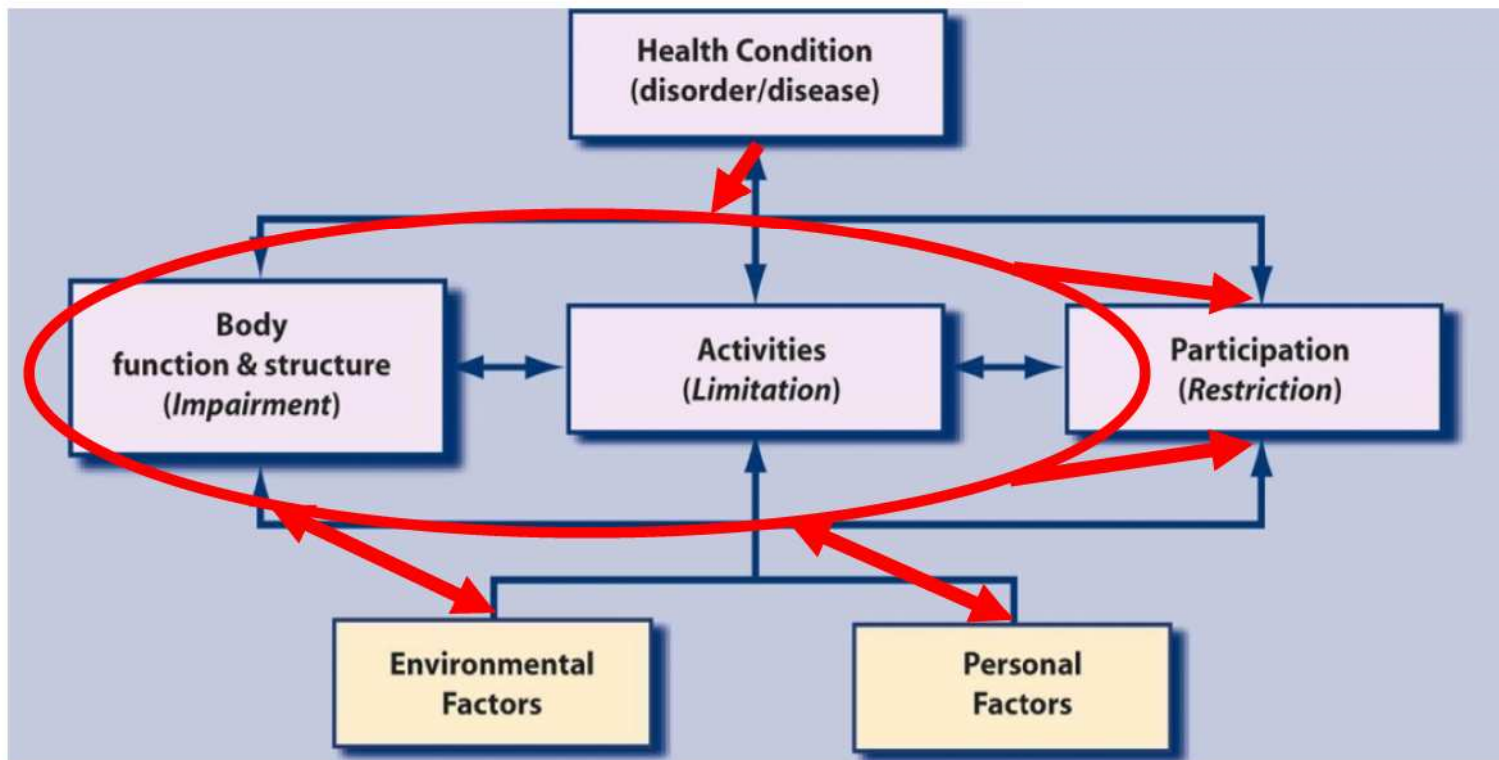
International Classification of Functioning, Disability and Health
World Health Organization 2001

«Classical» medicine



European Physical and Rehabilitation Medicine Bodies Alliance. White Book of Physical and Rehabilitation Medicine (PRM) in Europe. Chapter 3. A primary medical specialty: the fundamentals of PRM. 3rd Ed. Eur J Phys Rehabil Med 2018 (54): S1

Rehabilitation



European Physical and Rehabilitation Medicine Bodies Alliance. White Book of Physical and Rehabilitation Medicine (PRM) in Europe. Chapter 3. A primary medical specialty: the fundamentals of PRM. 3rd Ed. Eur J Phys Rehabil Med 2018 (54): S1

Core concepts of rehabilitation

	Classical medicine	Rehabilitation
Overall approach	Disease oriented	Person/functioning oriented (holism)
Diagnosis and prognosis	Medical	Functional and medical
Treatments	One modality at a time	Multimodal
Morbidities	Single	Multiple
Professional approach	Individual	Multi-professional team

Academia Médica Europea de Rehabilitación
Fédération Européenne de Médecine Physique et de Réhabilitation
Unión Europea de Médicos Especialistas
(Asociación multidisciplinaria de Medicina Física y de Rehabilitación)

LIBRO BLANCO
DE MEDICINA FÍSICA Y DE REHABILITACIÓN

EL PAPEL DE LA MEDICINA FÍSICA Y DE
REHABILITACIÓN EN LA ATENCIÓN
GLOBAL DE LA PERSONA LESIONADA Y
SUS CONSECUENCIAS EN CUANTO A LA
FORMACIÓN DE LOS ESTUDIANTES Y DE
LOS MÉDICOS ESPECIALISTAS



Edición y con el patrocinio de:
Universidad Complutense de Madrid
Prof. Antonio de Pascual y Álvarez y Prof. Juan de Dios



European Physical and Rehabilitation Medicine Bodies Alliance. White Book of Physical and Rehabilitation Medicine (PRM) in Europe. Chapter 3. A primary medical specialty: the fundamentals of PRM. 3rd Ed. Eur J Phys Rehabil Med 2018 (54): S1

Rehabilitation has specific challenges for EBM that must be faced





Cochrane Rehabilitation project: Rehabilitation definition

Aim

To provide a definition that proves to be valid not only internally but also externally

Trusted evidence.
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Penile rehabilitation for postprostatectomy erectile dysfunction

Cochrane Systematic Review - Intervention | Version published: 23 October 2018

<https://doi.org/10.1002/14651858.CD012414.pub2>



View article information

Yiannis A Philippou | Jae Hung Jung | Martin J Steggall | Stephen T O'Driscoll | Caitlin J Bakker | Joshua A Bodie
| Philipp Dahm

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Key results

We found that the men who used these medicines on a scheduled basis may have had similar self - reported erections and quality of erections (based on questionnaires they filled out) as men who took no medication regularly or

Background

It does not exist a definition of rehabilitation worldwide recognized

World Health Organization defines rehabilitation as «a set of interventions designed to optimize functioning and reduce disability in individuals with in interaction with their environment»

This and other definitions have some shortcomings:

- The ability to clearly and consistently **differentiate** rehabilitation from “non-rehabilitation”
- The **acceptance** from all major stakeholders
- There is evidence that **rehabilitation is a whole** and not a “set of interventions”, being the sum more than the individual interventions

Methods

The project will follow three sequential phases:

- **Collection** of world definitions
 - Direct questions to Scientific Societies multiprofessionally about their own definition and definitions in use in their Country
- **Expert Consensus Meeting** (February 2020)
- A **Consensus** will be achieved through a Delphi process **within** the world of rehabilitation
- A **Consensus** will be achieved through a Delphi process **outside the world of rehabilitation**





Cochrane Rehabilitation project: ebook table of contents

Aim

To identify a table of contents of rehabilitation topics
as a reference for our ebook

Starting point: Books & Educational curricula

CHAP 1: Rehabilitation approach to **Pediatric** health conditions

CHAP 2: Rehabilitation approach to **Geriatric** health conditions

CHAP 3: Rehabilitation approach to **Musculoskeletal** health conditions

CHAP 4: Rehabilitation approach to **Cardiovascular and Pulmonary** health conditions

CHAP 5: Rehabilitation approach to **Neurological** health conditions

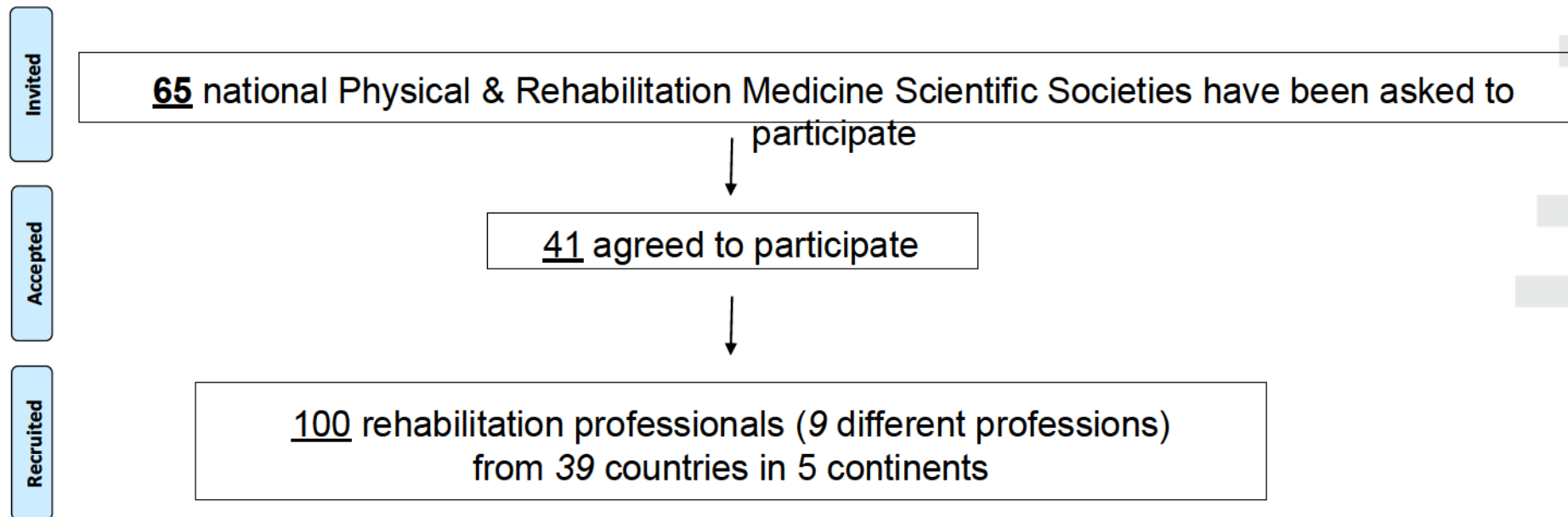
CHAP 6: Rehabilitation approach to **Cancer- Organ Transplant and Immune-compromised** health conditions

CHAP 7: Rehabilitation approach to **Pelvic floor** health conditions

CHAP 8: Rehabilitation approach to **Pain** health conditions

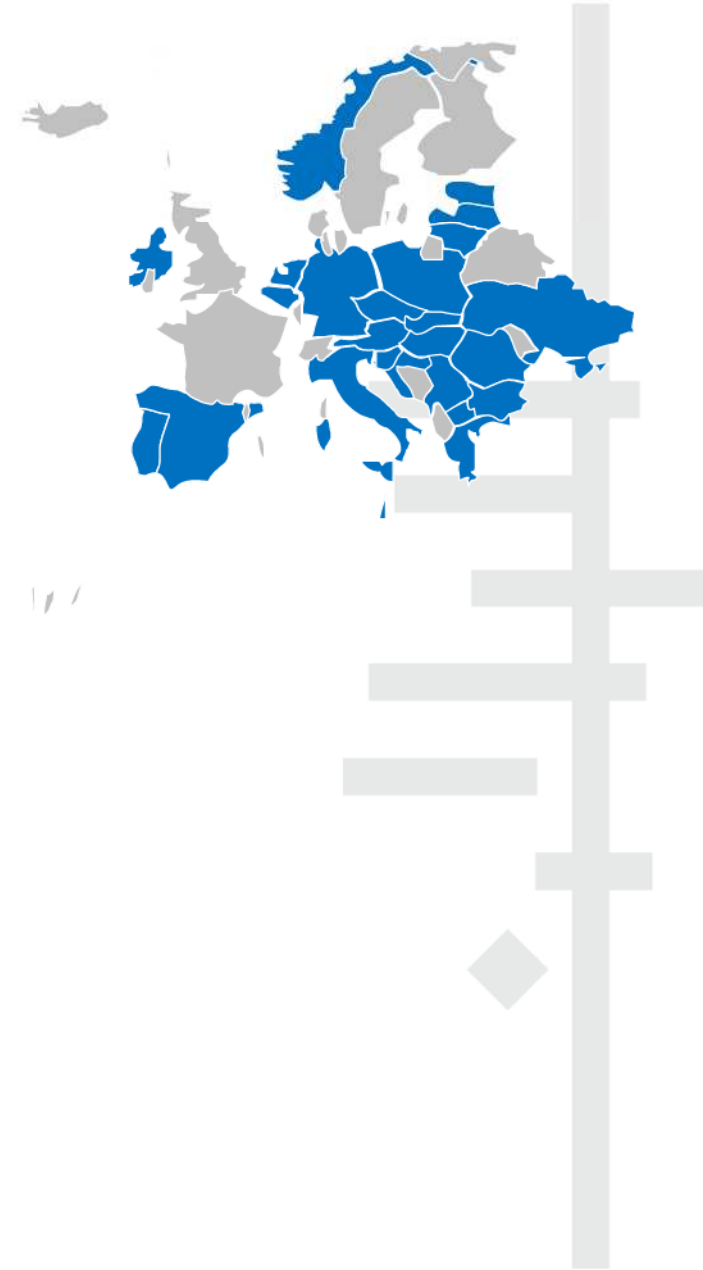
CHAP 9: Rehabilitation **management**

Participants



Participant countries: 26 Europe

- Austria
- Belgium
- Bulgaria
- Croatia
- Czech Republic
- Estonia
- FYROM
- Germany
- Greece
- Hungary
- Ireland
- Italy
- Latvia
- Lithuania
- Malta
- Montenegro
- Norway
- Poland
- Portugal
- Romania
- Russia
- Slovakia
- Slovenia
- Spain
- The Netherlands
- Ukraine



Participant countries: 13 world wide

5 Asia

- China
- Israel
- Malaysia
- Pakistan
- Turkey

4 Americas

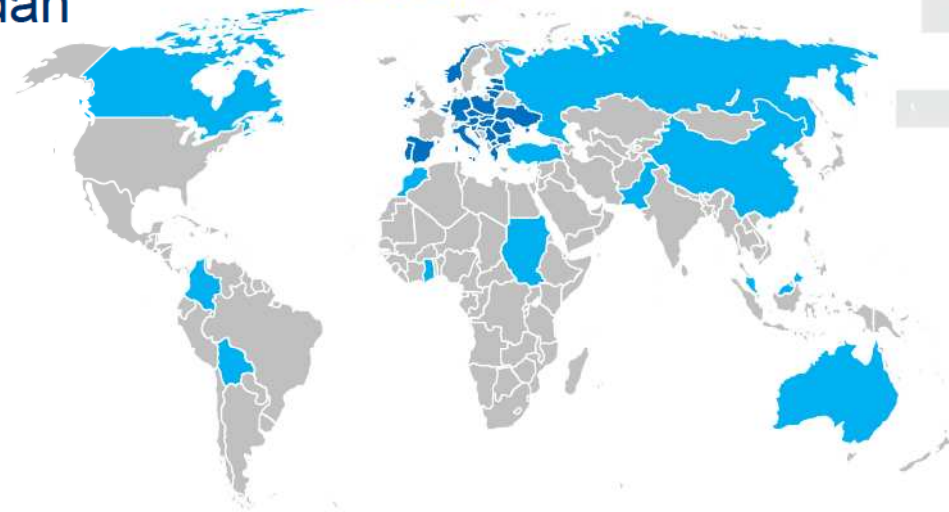
- AMLAR
- Canada
- Colombia
- Paraguay

3 Africa

- Ghana
- Morocco
- Sudan

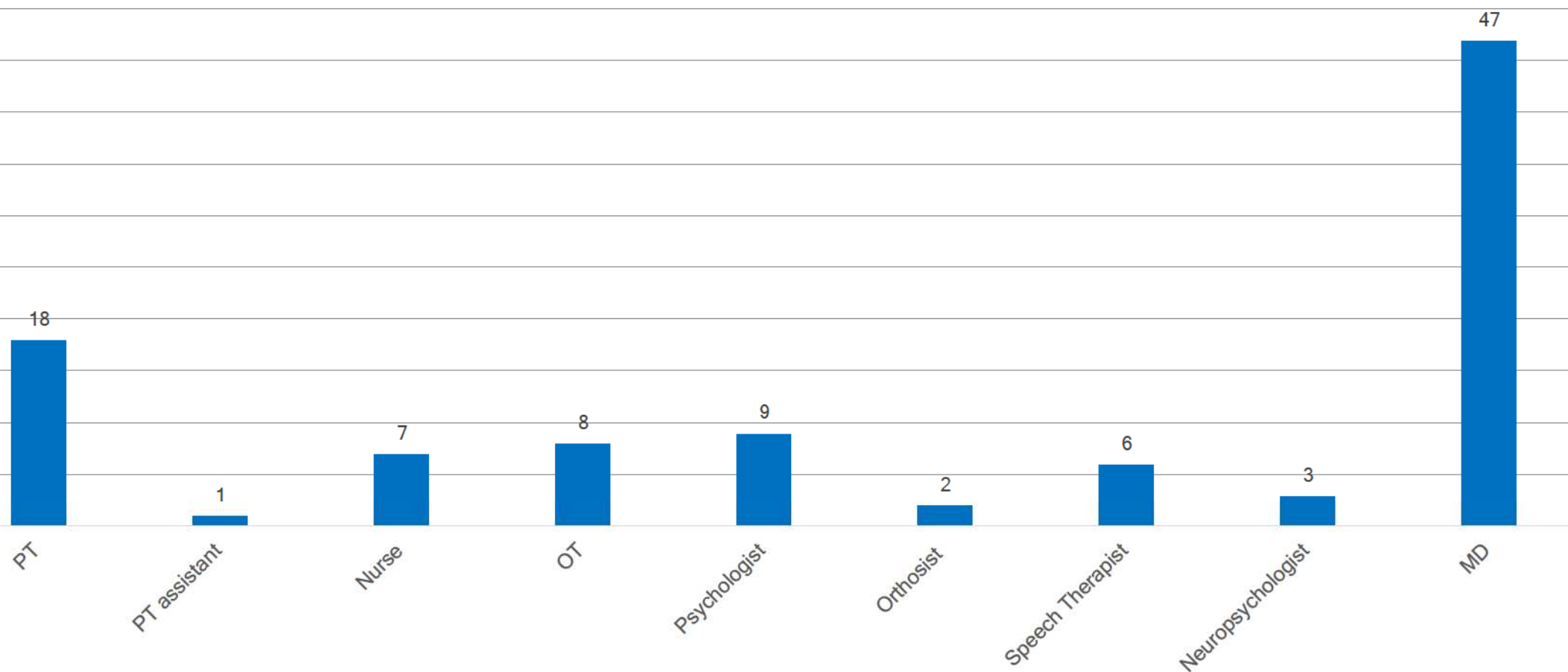
1 Oceania

- Australia



■ European countries
■ Extra-European countries

Profession distribution



Surveys

First Survey: validation and modification of the *index*.

- 58% response rate
- Addition of four chapters to the original nine and of several items to each chapter;

Second Survey: rating of the *importance of each chapter*.

- 55% response rate
- Neurological and Musculoskeletal are the most rated chapters

Third Survey: final *approval of the index*

- 60% response rate
- Some additional items added



13 Chapters: Rehabilitation approach to ... health conditions	Paragraphs	Reviews
Musculoskeletal	24	294
Neurological	28	246
Pain	16	134
Cardiovascular and Pulmonary	4	79
Internal medicine	9	4
Cancer- Organ Transplant and Immune-compromised	6	34
Pelvic floor	7	42
Psychiatric	6	20
Sport medicine	1	5
Pediatric	5	74
Geriatric	6	55
Rehabilitation management	8	47
General prophylaxis approach using rehabilitation interventions	6	25





Research problems in rehabilitation

Trusted evidence.
Informed decisions.
Better health.



Categories of problems in rehabilitation research

Design (2)

Patients selection (5)

Assignment and randomization (5)

Blinding (7)

Interventions (3)

Attrition, follow-up and protocol deviation (6)

Outcomes (3)

Statistical analysis (8)

Conclusions (4)

Others (11)

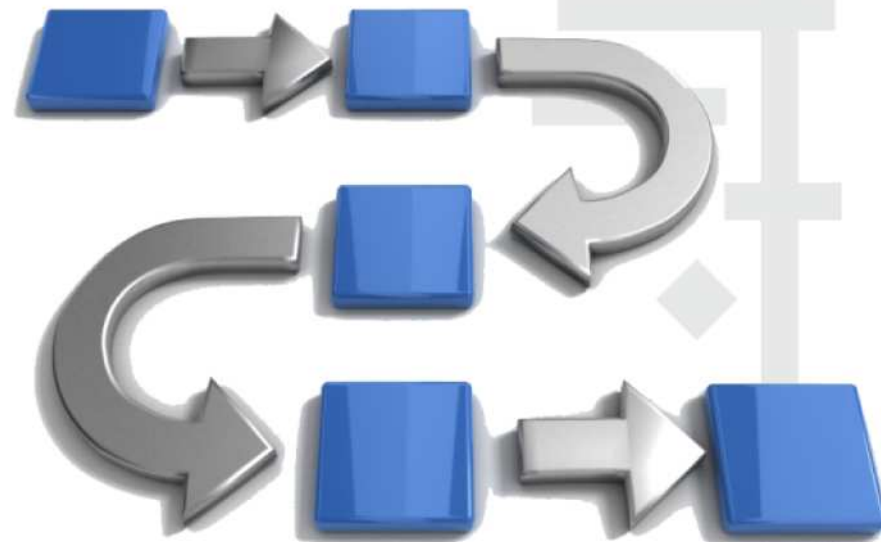
Rehabilitation process

Personal factors

- **Team**: multi-professional and interdisciplinary
- **Therapists'** competency and convincement
- **Patients'** convincement, compliance and adherence to treatment

Technical factors

- Low precision description (terminology and vocabulary)
- The Usual Therapy factor
- Multi-modal approach





Usual therapy (UT): the black box

Methods

- Systematic Review
- RCTs on rehabilitation for **lower limb after stroke** (2006-2016)

Results

- 86 papers (out of 1582): 9% **did not describe** the usual care group
- **64 different combinations of interventions** included in the UT groups
- 53 proposed only once, 8 twice, 3 in 3 papers (twice by the same group)
- **No correlation with quality of the paper**
- Gait training in 52%, balance in 51% of papers (in different combination), all the others less than 30%
- 18 different adjectives and 18 different nouns used to define UT
- In 2 articles 3 different definitions used, in 7 articles 2 different definitions

Usual therapy (UT): the black hole



Methods

- Systematic Review
- RCTs on rehabilitation for **lower limb after stroke** (2006-2016)

Results

- 86 papers (out of 1582): 9% **did not describe** the usual care group
- **64 different combinations of interventions** included in the UT groups
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Multimodal approach

Different treatments provided together

Same treatments combined differently by different teams



Multimodal approach

Different treatments provided together

Treatments combined differently by different teams

Their combination gives the final result



Rehabilitation research methodological problems requires better understanding





Cochrane Rehabilitation project: **The Replicability of RCTs in Everyday PRM Clinics (REREP)**

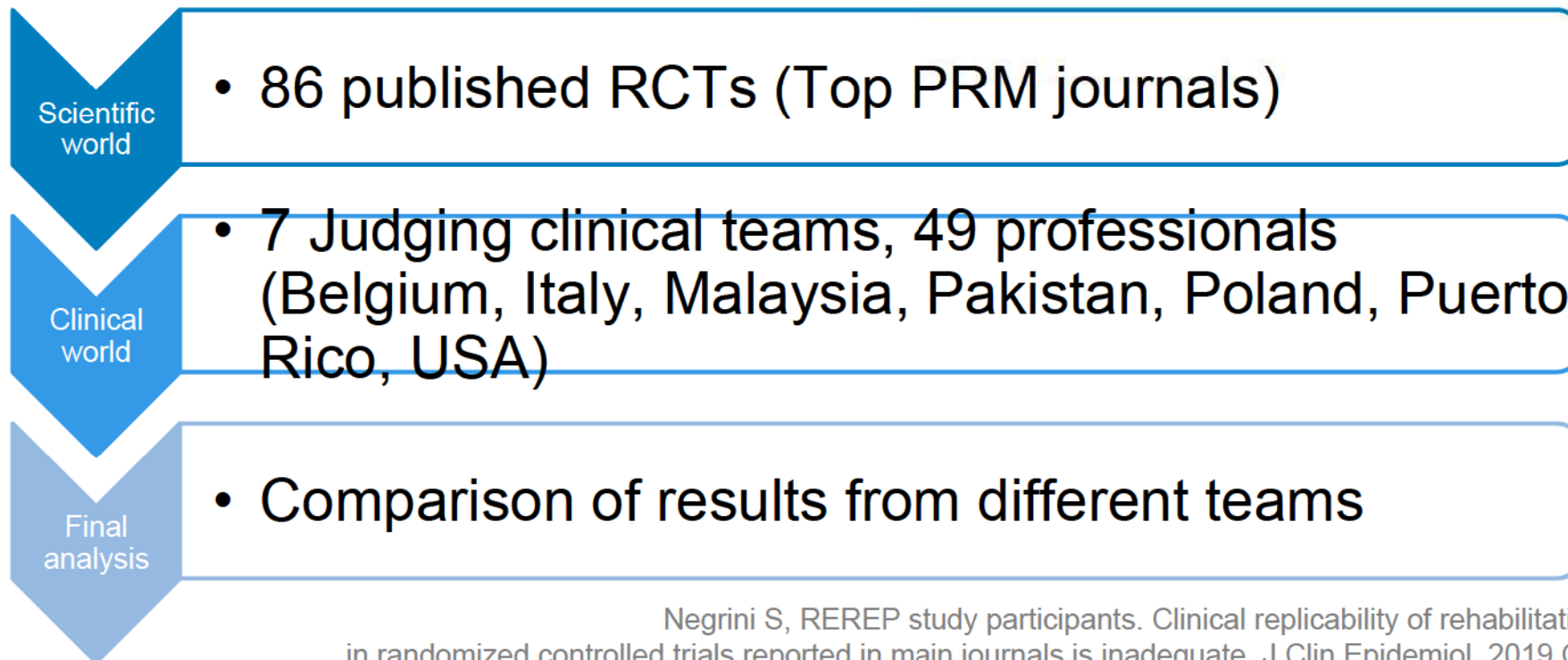
Aim

To check the clinical replicability of RCTs in
rehabilitation

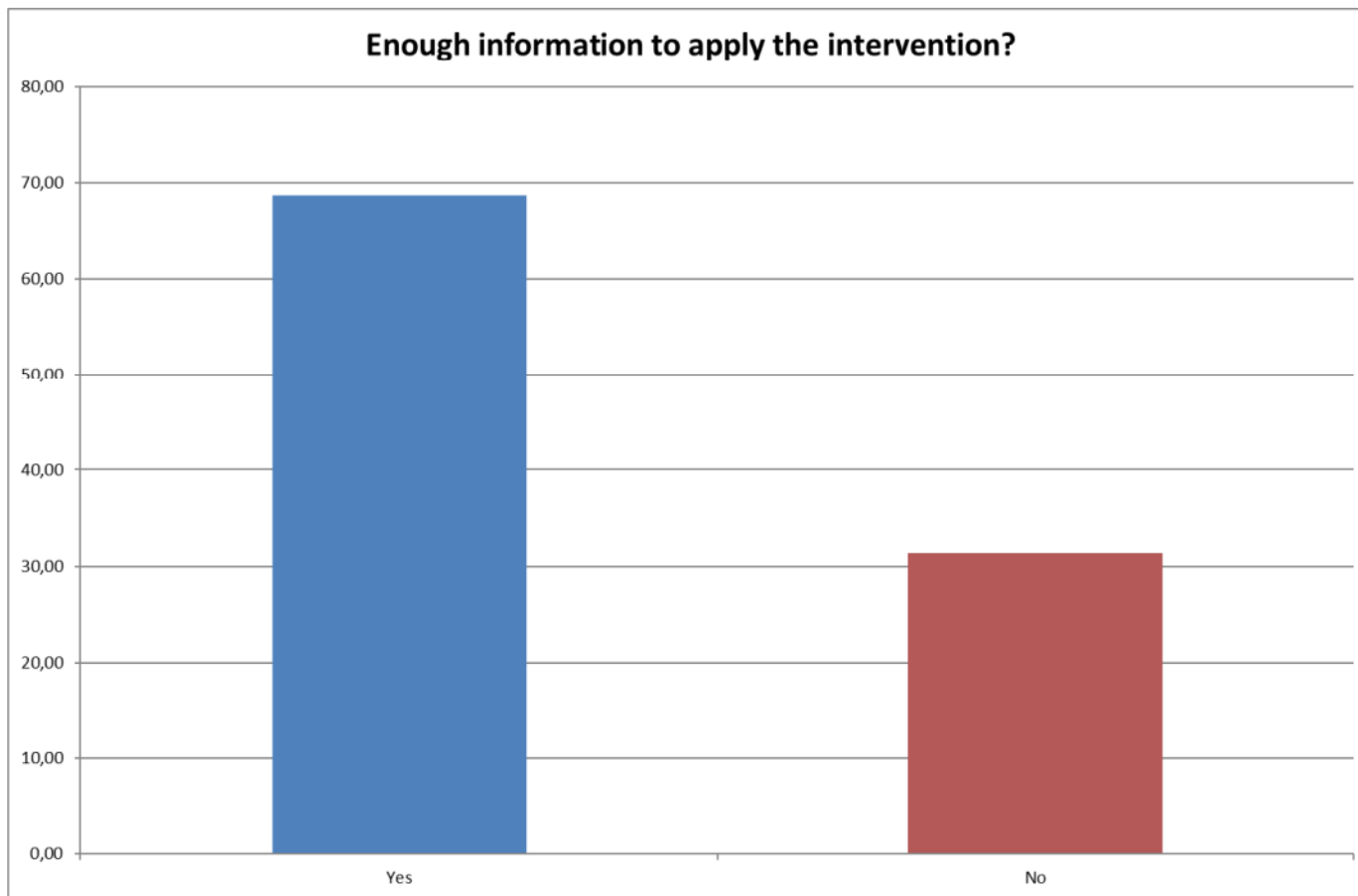
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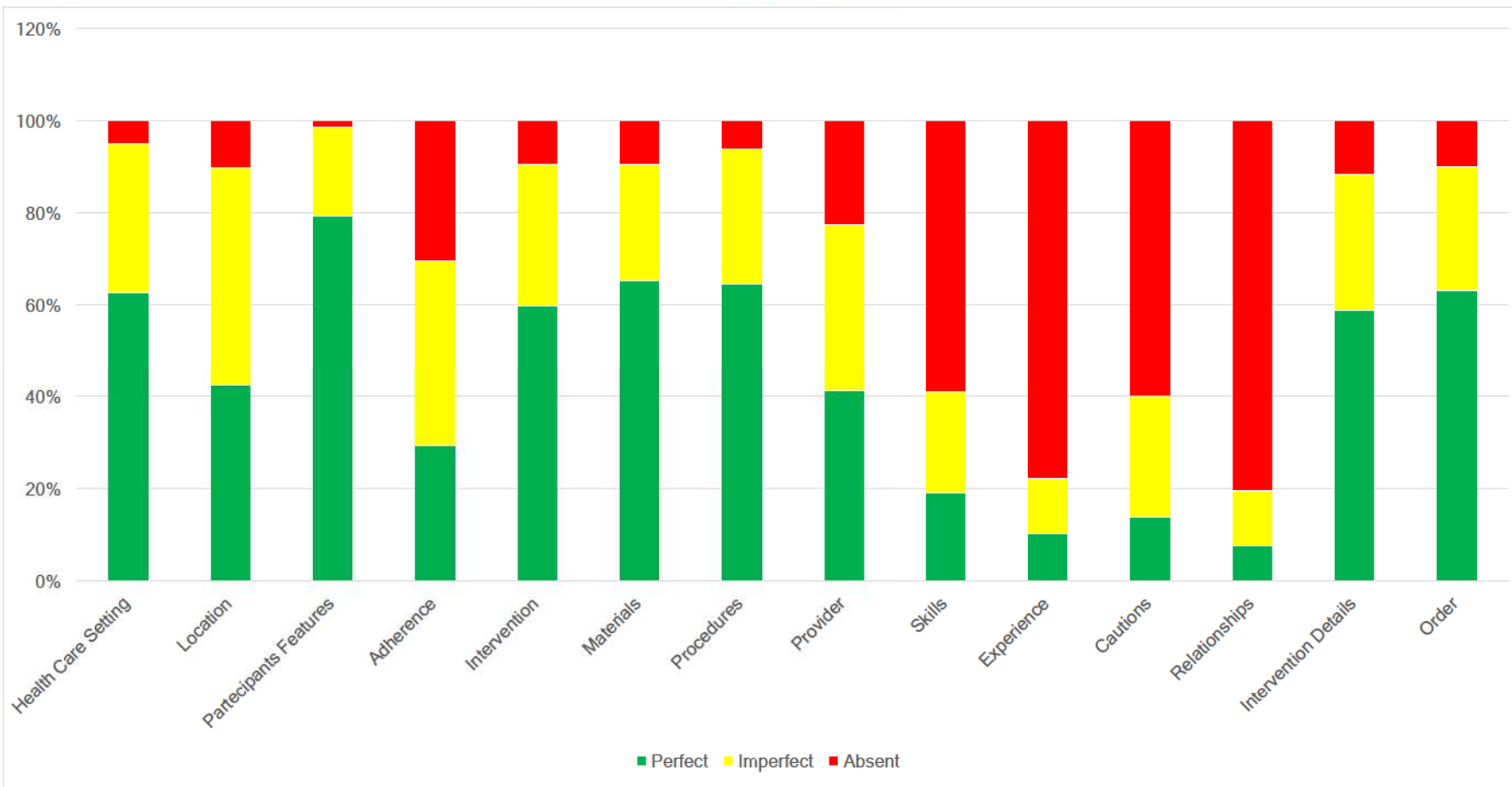
The Replicability of RCTs in Everyday PRM Clinics – the REREP Study



Negrini S, REREP study participants. Clinical replicability of rehabilitation interventions in randomized controlled trials reported in main journals is inadequate. J Clin Epidemiol. 2019 Oct;114:108-117



Negrini S, Arienti C, Pollet J, Engkasan JP, Francisco GE, Frontera WR, Galeri S, Gworys K, Kujawa J, Mazlan M, Rathore FA, Schillebeeckx F, Kiekens C; REREP study participants. Clinical replicability of rehabilitation interventions in randomized controlled trials reported in main journals is inadequate. J Clin Epidemiol. 2019 Oct;114:108-117



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