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Current rehabilitation definitions do not allow correct classification of Cochrane Systematic Reviews. An overview of Cochrane Reviews

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Abstract

Introduction. During the first three years of its work, Cochrane Rehabilitation was faced with the challenge of defining the inclusion and exclusion criteria of what is rehabilitation on four different occasions: when we worked on classifying all Cochrane Systematic Reviews (CSRs) for relevance to rehabilitation, when we checked for newly published CSRs, when we started the process to set up the reporting guidelines for the Randomised Controlled Trials Rehabilitation Checklist (RCTRACK) project, and during our collaboration with the World Health Organization for the Package of Rehabilitation Interventions. The aim of this paper is to check how the word "rehabilitation" gets used by researchers in the health field.

Methods. This overview of reviews included all CSRs that used the term "rehabilitation" in the title. They were compared with the authors' judgement (AJ) and with the contents of two main sources: CSRs identified by Cochrane Rehabilitation as relevant to rehabilitation (CRDB), and PubMed MeSH term "rehabilitation". We also performed a content analysis classifying all CSRs by field and type of intervention and checked the internal coherence of the two databases in order to verify whether all CSRs on interventions in a specific rehabilitation field were included in the databases or not.

Results. Out of 14,816 PubMed entries, we analyzed 89 CSRs. We found four reviews that were judged by all classifications as not rehabilitation: they were related to mouth, nutritional, penile and schizophrenia rehabilitation. While CRDB and AJ included 94% and 91% of CSRs respectively, PubMed included only 50%. One CSR about cardiac rehabilitation was excluded only by CRDB and four by AJ. In the 50% CSRs excluded by PubMed, we found that all CSRs on cancer and vestibular rehabilitation, and those on cognitive and neuropsychological interventions, were always omitted, even if all other CSRs on neurological rehabilitation were included.

Conclusion. Our results clearly highlight the need for a comprehensive rehabilitation definition that is able to point out what should be included and excluded from rehabilitation interventions. This will consequently inform all of Cochrane Rehabilitation's work and will serve the wider community of research and rehabilitation.

Introduction

In order for it to be applied appropriately for research purposes, a definition of rehabilitation in health (we will call it clinical rehabilitation hereon, even though there is not a consensus on using this term as such) should be able to provide a clear inclusion and exclusion criteria for what rehabilitation is and what it is not. Moreover, a definition should be understandable and agreed upon by both of those who are in the field and those who are not.

In Cochrane Rehabilitation, we faced the problem of the currently available rehabilitation definitions for the first time when classifying all Cochrane Systematic Reviews (CSRs) as relevant to rehabilitation or not (1). The decision was to include in the Cochrane Rehabilitation database (CRDB) all CSRs deemed relevant to rehabilitation professionals by expert consensus opinion, even with the understanding that the definition used was circular (e.g.: rehabilitation is what rehabilitation professionals do) (1).

In October 2018, a CSR with the title “Penile Rehabilitation for postprostatectomy erectile dysfunction” (2) was published. Since the review dealt only with drugs, Cochrane Rehabilitation considered the usage of the term rehabilitation inappropriate, but also discovered that there was not a definition of rehabilitation to be provided to the authors that allowed to corroborate this thesis. In fact, most definitions use “functioning” improvement as the main classificatory item. Nevertheless, interventions such as drugs to improve the body function “penile erection” (2), or hip prosthesis to improve the function “gait” (1), and the activity “mobility” would not be considered rehabilitation by rehabilitation professionals – the latter also by any other medical specialist.

In 2019, Cochrane Rehabilitation launched the Randomized Controlled Trials (RCTs) Rehabilitation Checklist (RCTRACK) project to develop a new reporting guideline for RCTs in rehabilitation (3). During its work, a Technical Working Group was established to update a systematic review to report guidelines on rehabilitation interventions (4), but has found three new checklists of which two were found problematic: one was on balneotherapy (5) and another on acupuncture (6). Consequently, a discussion on what is a rehabilitation intervention and what it is not started inside the group. The discussion was extended with a

survey into the Executive Committee of Cochrane Rehabilitation, with a rate of inclusion among rehabilitation interventions for balneotherapy and acupuncture of 62% and 54%, respectively.

In 2019, another case came from the Cochrane Rehabilitation collaboration with the World Health Organization (WHO) rehabilitation programme to extract evidence relevant to rehabilitation in order to produce the Package of Rehabilitation Interventions (7). Among the considered groups, there was one that was dealing with rheumatoid arthritis. The goals of rheumatoid arthritis management are to control pain and disease activity, prevent joint damage, protect and enhance function and improve health status and quality of life through pharmacological, non-pharmacological and surgical interventions. During the work of the group, the question about what rehabilitation of rheumatoid arthritis includes was raised, such as whether to include only non-pharmacological interventions, or to include some pharmacological treatments as well, such as systemic analgesics and local pharmacological medical treatment directed at symptomatic joints? First, it was decided to include only non-pharmacological interventions. However, during data extraction of other health conditions such as stroke and spinal cord injury, some health professionals found it necessary to include some medical treatments (e.g. spasmolytic drugs) among rehabilitation interventions as they had impact on functioning. Consequently, the issue was discussed in the rheumatoid arthritis group again, and it was decided to include systemic medical treatments for symptom control (analgesics and NSAIDs) and local intra-articular injections (corticosteroids and others) among rehabilitation interventions as they improved functioning. Nevertheless, not all the participants felt comfortable with this decision.

These four cases raised the need of an inclusion and exclusion criteria to define interventions as rehabilitation in the health context. The primary aim of this paper is to check how the word “rehabilitation” is used in the health field by looking at the best evidence synthesis as represented by the CSRs. Secondarily, we also aimed to verify the internal coherence of two existing classifications (CRDB and PubMed).

Methods

Design

Overview of systematic reviews.

Papers selection

On December 24th, 2019, we searched PubMed for all CSRs published in the Cochrane Database of Systematic Reviews from inception. Inclusion criterion was the presence of the term "rehabilitation" in the title; exclusion criteria were editorial, updated or withdrawn CSR.

To classify all retrieved CSRs as "rehabilitation" or not, two authors independently classified each CSR in the following categories (author's judgement - AJ):

1. Clinical rehabilitation interest or not
2. Clinical rehabilitation intervention or not. For this category, we decided to include the following topics into the rehabilitation interventions: provision of technological aids, prosthesis and orthosis; virtual reality; studies of setting for rehabilitation; goal definitions for rehabilitation. We excluded interventions usually provided for other purposes, such as yoga or acupuncture, from rehabilitation interventions.

Any disagreement between the authors was solved by discussion and/or involving a third author.

Data analysis

We performed a content analysis of all CSRs, where the authors classified each retrieved CSR according to its field/intervention by discussion and consensus. This classification was compared to two other major classifications:

1. Cochrane Rehabilitation database (CRDB), according to the tagging methodology described by Levack et al. (1), and published in the Cochrane Rehabilitation website (8);

2. PubMed, according to the MeSH term ”rehabilitation“, whose definition is “Restoration of human functions to the maximum degree possible in a person or persons suffering from disease or injury”. In the MeSH Tree, this definition is a branch after the terms “Therapeutics” (3rd level), “Health Services” (4th level), “Physical and Rehabilitation Medicine” (5th level) and “Aftercare” (6th level) (9).

For each classification we compared the included and excluded CSRs to see if each field/intervention was managed coherently or not: such as if CSRs on one specific field/intervention were all included or all excluded, whether the choices were considered coherent; and if they were incoherent, whether some CSRs were included or excluded.

Results

We analyzed 89 CSRs out of 14,816 PubMed entries, and 139 papers with the term rehabilitation in the title (Figure 1). We found that all classifications (AJ, CRDB and PubMed) considered four reviews as not rehabilitation (Table 1). They were related to mouth (10), nutritional (11), penile (2) and schizophrenia (12) rehabilitation. Another review was excluded only by CRDB (13) since it was related to exercises for cardiac rehabilitation, and all the other CSRs on the same topic had been included in the CRDB. This is an example of a choice that was judged incoherent. Four reviews included by CRDB have been excluded by AJ since the provided interventions were not considered rehabilitation: two were about acupuncture (14, 15), one was about anabolic steroids (16) and one was about yoga (17). All other CSRs were judged in the same way by CRDB and AJ.

While CRDB and AJ included 94% and 91% of CSRs, respectively, PubMed included only 50% as rehabilitation. In PubMed, two fields (cancer and vestibular rehabilitation) were coherently excluded. The only field coherently included by PubMed was the neurological one, even if CSRs were not considered rehabilitation in all cases where cognitive and neuropsychological interventions had been applied. All other fields were not judged coherently by PubMed.

Discussion

This paper shows that 5% of CSRs with the term rehabilitation in the title (and consequently considered by the author of the CSR as "rehabilitation") are coherently considered not of rehabilitation interest by AJ, CRDB, and PubMed (2,10,12). We also found some incoherence in the classification proposed in the CRDB, but this was up to 40% in PubMed. Since PubMed represents a more general researchers view about what rehabilitation is, this last datum is particularly relevant. These results are in agreement with the difficulties in defining the inclusion and exclusion criteria faced by Cochrane Rehabilitation (1,3,7).

The problems we found in terms of what is rehabilitation and what are rehabilitation interventions are worth a discussion. Whist it is well known that for schizophrenia the term rehabilitation is commonly used in psychiatry, the same is not true for mouth, penile and nutrition interventions. Nevertheless, there was a consensus in excluding all of them from the field of clinical rehabilitation. It should be noted that the perspective adopted in this paper, but also by Cochrane Rehabilitation in developing the CRDB, is to exclude rehabilitation focusing on psychiatric impairments, but not rehabilitation "for people with mental health conditions that is oriented towards outcomes at the level of activity and participation (e.g. return to work)" (1). This points out to the clear need for a definition to be applied in general for research purposes, and specifically in Cochrane. This is highly relevant for all the work of Cochrane Rehabilitation.

When it comes to rehabilitation interventions, the cases of acupuncture, yoga, Tai-chi, Pilates or other exercises approaches raise the issue of when and if these exercises/techniques, which are normally used for other purposes such as general fitness or entertainment, can be considered a part of rehabilitation. Nevertheless, the same could be true for virtual reality and other technological interventions, but even for prosthesis/orthosis/hearing aids, the question is: what are the boundaries of defining an intervention as a rehabilitation intervention beyond what is considered a tradition and/or "what a rehabilitation professional does" (1)? Again, a clear definition of when an intervention should be considered a rehabilitation intervention or not is needed.

During the discussions held by the Cochrane Rehabilitation Executive Committee about what defines rehabilitation interventions and the use of its term in the "cases" of balneotherapy (5) and acupuncture (6), several main comments were raised about its definition, which were: 1. It depends on the context and the intended outcomes of the interventions (e.g. part of the Committee said that rehabilitation is a process and not a set of interventions); 2. It can vary from country to country, and it can be considered as a cultural issue; and 3. It should be considered if single interventions are adjuvant, or part of a rehabilitation programme, and/or prescribed by a rehabilitation physician (e.g. acupuncture used to manage pain post-surgery vs pain due to spinal cord injury in order to facilitate improvement in function). Nevertheless, a consensus was not reached.

The major limitation of this study comes from the impossibility to rely on a coherent definition of rehabilitation and "clinical rehabilitation" to classify the identified CSRs. which led us to decide on a consensus among the authors, but this is obviously subjective. This consensus for example led to exclude "rehabilitation for schizophrenia impairments" from clinical rehabilitation. The judgement of coherence of the different databases is also subjective and consensus based. Nevertheless, these limitations confirm the hypothesis of the study: there is a need to produce a definition of rehabilitation for scientific and research purposes.

Conclusion

Our results clearly highlight the need for a comprehensive rehabilitation definition that is able to point out what should be included and excluded from rehabilitation interventions. This will consequently inform all of Cochrane Rehabilitation's work and will serve the wider community of research and rehabilitation.

All authors read and approved the final version of the manuscript.

Authors' contribution:

All the authors conceived the paper and its methodology, corrected the manuscript and contributed to the discussion. SN drafted the paper with contributions of AK and CA, SGL and MP collected the data, SN elaborated the data.

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Figures and tables

Figure 1. Flow-chart of study selection

Table 1. Cochrane Systematic Reviews (CSRs) with the word "rehabilitation" in the title included in the Cochrane Rehabilitation database (CRDB) (1), classified by PubMed Mesh Term "rehabilitation" (PubMed) and judged by the authors (AJ) of rehabilitation interest or on rehabilitation interventions. All CSRs have been analyzed by topic and intervention: choices were judged coherent if all the reviews on the same topic/field had been excluded/included, otherwise they were judged incoherent.

		Cochrane Systematic Reviews			
		Included	**Excluded**	**Contents of excluded reviews**	
Classification of rehabilitation				*Coherent choices*	*Incoherent choices*
Cochrane Rehabilitation database (CRDB)		84 94%	5 6%	Topic: mouth, nutrition, penile, schizophrenia	Intervention: Cardiac rehabilitation for stable angina
PubMed Mesh term "rehabilitation" (PubMed)		45 50%	44 50%	Topic: mouth, nutrition, penile, schizophrenia, cancer, vestibular Intervention: anabolic steroids	Topic: cardiac, musculoskeletal, pulmonary, rehabilitation settings and goal definitions Intervention: cognitive and neuropsychological, multidisciplinary/biopsychosocial, provision of aids, prosthesis and orthosis
Authors' judgement (AJ)	Rehabilitation interest	85 95%	4 5%	Topic: mouth, nutrition, penile, schizophrenia	
	Rehabilitation interventions	81 91%	8 9%	Intervention: acupuncture, anabolic steroids, yoga