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Navigating Rehabilitation: the General Index of Rehabilitation Knowledge developed by Cochrane rehabilitation through a global interprofessional Delphi process

Rehabilitation is defined as a multimodal, person-centred, collaborative process, including interventions targeting a person's capacity and/or contextual factors related to performance with the goal of optimising the functioning of persons with health conditions currently experiencing disability or likely to experience disability, or persons with disability.¹ The complexity of rehabilitation, involving various professionals and disciplines, makes the implementation of evidence-based practice (EBP) particularly challenging.² Despite clinical research shortcomings and barriers in translating evidence into practice, EBP supports clinical decision-making, quality care, priority setting, and healthcare cost management. Knowledge translation (KT) and mobilisation initiatives are essential for making EBP feasible in rehabilitation and should be strongly encouraged.³ Textbooks and evidence synthesis publications aid

clinicians in managing the growing amount of evidence, though there is no universally validated general knowledge rehabilitation index. Rehabilitation textbooks often vary widely, some focusing on assessment and management of specific conditions, while others describe techniques based on anatomy, leading to fragmented perspectives.⁴⁻⁶ To address these issues and promote EBP, Cochrane Rehabilitation, in collaboration with European Bodies of Physical and Rehabilitation Medicine, the University of Campania "Luigi Vanvitelli" (Naples, Italy), and the Polytechnic University of Marche, created an ebook summarising relevant evidence from Cochrane Systematic Reviews (CSRs).⁷ This ebook serves as a practical reference for healthcare professionals, students, health managers, policymakers, and consumers. Aligning with Cochrane Rehabilitation's KT strategy, the ebook provides an accessible approach to evidence-based rehabilitation.⁸ An index was needed to navigate the ebook's contents, but creating one meaningful to all rehabilitation professionals was challenging due to the diverse educational sources. To this aim we structured a multi-stage consensus to develop and validate the first general knowledge rehabilitation index for the ebook. Representatives from the European Bodies and the International Society of PRM (ISPRM) participated, involving over 30,000 PRM physicians and trainees globally.⁹ Each country recruited two rehabilitation professionals, including at least one non-physician, ensuring a multi-professional perspective (Table I). To produce the first draft of the index, one author consulted the following educational sources: Braddom's Physical Medicine and Rehabilitation,⁵ DeLisa's Physical Medicine and Rehabilitation,⁴ and the Encyclopédie Médico-Chirurgicale – Ki-

TABLE I.—Professional and geographical characteristics of the participants involved in the 3 Delphi surveys.

Characteristics	Number of invited professionals	Number of professionals who answered to 1 st survey	Number of professionals who answered to 2 nd survey	Number of professionals who answered to 3 rd survey
Professional profiles: profession				
PT	18	9	9	9
PT assistant	1	1	1	1
Nurse	7	1	1	2
OT	8	2	5	4
Psychologist	9*	4*	5*	3
Orthotist	2	1	0	1
Speech therapist	6*	4*	3*	2
Neuropsychologist	3	1	1	1
PRM physician	47	36	31	37
Total	100	58	55	60
Geographical distribution: continent				
Europe	67	41	37	40
Asia	13	8	8	8
Oceania	1	1	1	1
America	13	6	8	7
Africa	6	2	1	4
Total	100	58	55	60

PT: physiotherapist; OT: occupational therapist; PRM: physical and rehabilitation medicine.

*One participant is both a psychologist and a speech therapist. For this reason, he has been counted twice and the total number of participants reported in the table is increased by one.

nésithérapie et rééducation fonctionnelle.⁶ Moreover, we examined web-based resources, such as PM&R Knowledge NOW^{®10} (American Academy of Physical Medicine and Rehabilitation, Rosemont, IL, USA) endorsed by the American Academy of Physical Medicine and Rehabilitation (AAPMR) and international core curricula produced by the international PRM bodies and scientific societies, such as the ISPRM and the UEMS PRM Board.¹¹⁻¹³ We considered population-based (rehabilitation issues in conditions mainly affecting paediatric and geriatric patients) and health conditions-based (musculoskeletal, neurological and cardiorespiratory disorders, and cancer) criteria. The index was then revised by the leading authors before being submitted for the consensus process. The subsequent multi-professional consensus process involved a three-round e-Delphi procedure. We organised the three rounds of voting using a web-based platform (SurveyMonkey, SurveyMonkey Inc., San Mateo, CA, USA) to develop specific questionnaires. The first e-Delphi round consisted of votes and suggestions for changes to the structure and content of the initially proposed version of the index, along with the development of an updated version to be voted and discussed in the second e-Delphi round. The second e-Delphi round proposed queries about the priority of including each chapter as essential for the index. The third e-Delphi round included questions about the participants' agreement with the chapters' contents and related suggestions about each chapter. Three leading authors discussed each addition/change/removal suggested by one (or more) participants and then resubmitted for approval to the participants in the following round. We sent the invitations to participate in the survey to 65 countries, and 39 (60%), from five continents agreed, with one hundred rehabilitation professionals eventually participating in the consensus process. Table I shows the distribution of participants according to their profession and geographic characteristics, as well as their participation in the three e-Delphi rounds. Fifty-eight participants answered to the first survey, 55 to the second and 60 to the third. We report the details of the eDelphi process in Supplementary Digital Material 1 (Supplementary Table I-III). The first draft of the index consisted of nine chapters, 147 subchapters, 68 paragraphs and 40 subparagraphs. After the first e-Delphi round, participants proposed to add four chapters (internal medicine, psychi-

atric health conditions, sports medicine, and rehabilitation interventions in terms of prevention). Moreover, they suggested modifying the chapters' titles to make them consistent with each other. Most participants in the second eDelphi round agreed on including all chapters with two exceptions (Rehabilitation approach to internal medicine and psychiatric health conditions) (Figure 1). As a result of the three e-Delphi rounds, the index includes 13 chapters and 461 topics, divided in four different levels as follows: 140 paragraphs at the first level (*e.g.*, 1.1.), 203 subparagraphs at the second (*e.g.*, 1.1.a.), 105 subparagraphs at the third (*e.g.* 1.1.h.i.) and 13 subparagraphs at the fourth (*e.g.*, 1.2.d.ii.i.) (Supplementary Digital Material 2: Supplementary Text File 1). The current letter describes the multi-professional process that led to the creation and validation of the general knowledge rehabilitation index as an appropriate index to summarise the evidence contents regarding rehabilitation. The index serves the Cochrane Rehabilitation ebook, and it might be a useful tool for producing future educational resources. The development went through a consensus involving experts in the rehabilitation field worldwide. The Cochrane Rehabilitation ebook summarises relevant evidence of rehabilitation interest included in CSRs, and it is a practical resource allowing clinicians, students, consumers, and health managers to access evidence easily.⁷ Identifying a comprehensive and user-friendly index is one of the main educational purposes of all disciplines, and it is particularly important for the rehabilitation field. Indeed, rehabilitation requires a multiprofessional approach that addresses several needs of both people with very different health conditions and their caregivers. Therefore, educational resources in this context should deal not only with medical aspects but, more specifically, with all functioning issues for any health condition. The definition of the general knowledge rehabilitation index was necessary to ensure that the Cochrane Rehabilitation ebook be as exhaustive as possible on the current available evidence in the field to cover the educational and clinical needs of the rehabilitation world. This index will contribute, firstly, to cataloguing the existing CSRs of rehabilitation interest. Secondly, according to the Cochrane prioritization process, to identify the research fields not or less covered by CSRs, to meet end users' needs, and optimising resources.¹⁴ Moreover, the index will contribute to cataloguing the

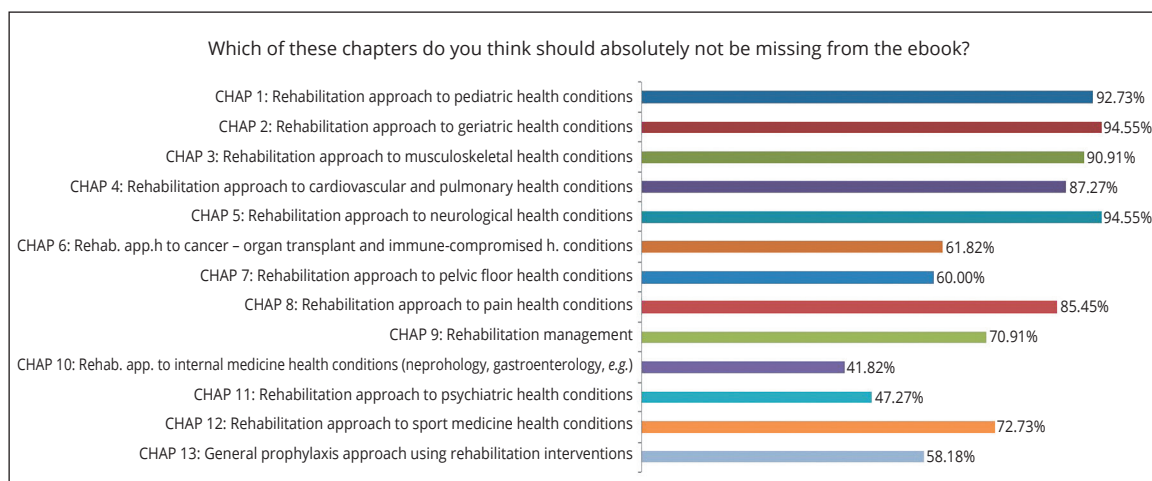


Figure 1.—Percentages of participants' agreement with the inclusion of each chapter in the General Index of the Rehabilitation Knowledge.

contents of the CSRs tagged by Cochrane Rehabilitation to define if and how much the latter cover the clinical needs in the field. Compared to the indexes of the educational resources used for the development of the first draft of the general knowledge rehabilitation index, the final version is structured according to age-related (chapters 1 and 2) and disease-related (chapters 3-8 and 10-11) concepts, also including dedicated chapters to management strategies (*i.e.* 9, 13) and sports medicine (chapter 12) aiming to embrace key issues in the rehabilitation field. The main limitation in the production and definition of our index is that the first version was based on an arbitrary proposal from four PRM physician authors which was then discussed and improved with the replies to the three e-Delphi rounds. Other limitations are represented by the disproportion between the number of physicians and other rehabilitation professionals who had been invited and contributed to the surveys, and the panel selection process and the geographical disparity among the invited participants, mainly based in Europe. Despite these limitations, it should be underlined that the consensus process resulting in the definition of the general knowledge rehabilitation index was based on a reliable methodology, considering the advantages of the Delphi method, such as controlled feedback that allows participants to reassess initial judgments as well as the involvement of health professionals worldwide that guarantee geographic dispersion thus reducing manipulation due to group dynamics.¹⁵ However, additional changes could be made in future updates to promote a worldwide and interprofessional consensus on the general knowledge rehabilitation index. The general knowledge rehabilitation index production comes from a comprehensive analysis of the indexes of the most relevant and reliable international educational tools about rehabilitation and the core curricula of competencies of PRM physicians. The validation of the index in well-structured chapters was defined through a consensus among rehabilitation professionals worldwide. This tool allows the rapid and easy consultation of the summarised evidence on rehabilitation, addressed to stakeholders (clinicians, medical or other health professional students, policymakers and rehabilitation healthcare managers, patients and caregivers) in the Cochrane Rehabilitation ebook. It could also facilitate identifying the unmet needs, guiding the prioritisation process. The latter is crucial to ensure that available resources for clinics are addressed to the areas of interest for rehabilitation. Moreover, it might become a useful framework for producing educational material in rehabilitation.

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Conflicts of interest

The authors certify that there is no conflict of interest with any financial organization regarding the material discussed in the manuscript.

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Authors' contributions

Francesca Gimigliano, Antimo Moretti, Carlote Kiekens, and Stefano Negrini have given substantial contributions to the study conception; Chiara Arienti contributed to the study design; Stefano G. Lazzarini and Joel Pollet contributed to the data acquisition; Stefano G. Lazzarini and Claudio Cordani contributed to the data analysis; Antimo Moretti, Maria Gabriella Ceravolo and Claudio Cordani contributed to the data interpretation; Antimo Moretti, Stefano G. Lazzarini, and Claudio Cordani contributed to the manuscript draft, Francesca Gimigliano, Joel Pollet, Chiara Arienti, Maria G. Cervaolo, Carlote Kiekens and Stefano Negrini revised it critically. All authors read and approved the final version of the manuscript.

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Supplementary data

For supplementary materials, please see the HTML version of this article at www.minervamedica.it

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