SUPPLEMENTARY DIGITAL MATERIAL 2

Discussion of single items of the definition for final users

This Supplementary Digital Material 1 addresses comments raised by participants during the Delphi process that we did not integrate into the current definition. It serves to enhance the understanding of the definition.

In a health care context

"Health care" can be defined as "…a general term comprising services provided to improve health in the general population as well as to cure diseases and relieve symptoms in diseased patients. Health care may denote the organization of services (e.g., private vs public health care), a facility (e.g., hospital or health care center), as well as the actual delivery of care (e.g., to provide health care or to obtain health care)…" (Allebeck 2020). Although this definition is broad and all-encompassing, it outlines what health care is generally about, and it helps to better understand the context of the current definition of rehabilitation. Identifying the context of rehabilitation as health care aims to differentiate it from other contexts, such as the social or educational context.

Some participants commented that the definition should not be limited to health care and should be expanded to also include, for example, social care and education. However, since the current definition is directly related to the work of Cochrane Rehabilitation, whose mission is to promote evidence-informed health decision-making in rehabilitation (1), we focused on health care. In health care, rehabilitation may include social and education elements, but the current definition differentiates between rehabilitation research and research that focuses solely on one of these elements.

Health care is not limited to any specific phase of care but encompasses different settings and the whole care continuum (acute, post-acute, long-term care).

The term "context" should not be confused with the setting. For example, while rehabilitation provided to a person in prison to address health needs is embodied by the current definition, activities in a prison setting to facilitate the reintegration of (ex)prisoners into society are not.

Multimodal

"Multimodal" refers to the application of more than one intervention or of one intervention with more than one component. We define "modality" as any intervention that can be offered as a standalone. "Modality" is not the same as "physical modality", which refers to "instruments used to apply physical external therapeutic forces" (2) or a therapeutic medium such as heat, cold, pressure,

water, light, sound, or electricity (3). A physical modality can be one intervention or one of the components of an intervention.

The inclusion of "multimodal" as an elementary part of the rehabilitation definition stimulated much discussion during the consensus meetings and comments in the Delphi. The main issue was whether interventions provided by a single discipline would be considered rehabilitation based on the current definition. The answer is yes. The definition does not equate "modality" with professional discipline or the professional who conducts the intervention but rather focuses on the intervention. By focusing on the intervention, we avoid the circular logic of the statement "everything that rehabilitation professionals do is rehabilitation". Concentrating on the intervention rather than the discipline or professional also lends the present definition a more inclusive perspective and allows for country/regional and institutional circumstances. This is also the reason for using "multimodal" instead of "multidisciplinary".

For more clarity, we specified that a modality can also be a component of an intervention and that more than one component has to be conducted for the intervention to be considered rehabilitation. For example, hand therapy after surgery that includes the components of heat, stretching and splinting, patient training on exercises to be done at home can be considered rehabilitation. If only one of these components is provided, it does not fit the current definition. This intervention may be done by an occupational therapist or another health professional depending on the country and the health care facility and does not necessarily have to be conducted, although preferable, in a team. Moreover, we added the following inclusion criterium: Involvement of at least one service to address the health care needs of an individual.

Person-centred

There was a unanimous acceptance of including "person-centred" as an element of the current definition of rehabilitation, albeit with some nuances. For example, cultural issues related to person-centredness were raised. In some cultures, e.g. indigenous cultures in the Pacific, many Asian cultures, the family is more dominant than the individual. Furthermore, in the case of persons with severe cognitive problems, the family plays a crucial role in providing information and decision-making on the person's behalf. Thus, the concept of "person-centred" in the current definition, without being explicit, encompasses the (extended) family context. Replacing "person-centred" with "family-centred" may elicit more significant cultural issues. Thus, we decided to keep "person-centred".

In consideration of comments made during the Consensus meetings and Delphi, we elaborated on what "person-centred" takes into account, i.e. the individual's needs, resources, values, preferences and contextual factors.

Collaborative Process

Describing rehabilitation as a process also enjoyed high acceptance. However, a question arose whether the active participation of the patient (and/or family) and rehabilitator(s) in the process should be included in the definition. The last Delphi round addressed this issue. In summary, the participants' comments indicate that active participation of patients/family in the rehabilitation process is desirable, even essential for some, for rehabilitation success. However, many participants indicated that explicitly stating it in the definition may exclude intensive care unit (ICU) patients, coma patients, or those under deep sedation. Concerning small children or those who are conscious but with limited capacity to participate, e.g. with severe disability, have the family as a proxy. Given the results of the last Delphi, we decided to include the active participation aspect not as part of the "process" but instead of "person-centred": Interventions are selected and tailored to an individual's needs and engagement. This specification of the meaning of "person-centred" accounts for the person's active participation while not requiring it, keeping it open depending on the person's health situation.

Based on the results of the last Delphi, the active participation of both actors of the rehabilitation process - the person and the rehabilitator(s), is reflected in the description of the process as "collaborative". We decided to introduce the term "collaborative", as the current definition considers the whole process rather than only specific phases of care. Even if some patients are unable to actively participate during an early phase of the process (e.g. ICU), they may be able to actively participate at a later phase.

Concerning the rehabilitation cycle as an elaboration of the process, the concept of the rehabilitation cycle (also known as the Rehab-Cycle) (4) is well-known in the rehabilitation community, but not everybody. A rehabilitation cycle comprises sequential phases: the assessment phase (diagnosis of health condition, identification of functioning problems and targets for intervention), goal setting, the assignment phase (planning of interventions to address these targets and corresponding providers of the intervention), intervention phase (conduct of interventions), and evaluation phase (second assessment aimed at identifying goal achievement). The rehabilitation cycle can inform discharge planning or be repeated if needed to optimize functioning.

Capacity

Although related, the term "capacity" in the present description is more nuanced than the general understanding of the English word "capacity" (the ability to do something with regard to people) and reflects the International Classification of Functioning, Disability and Health (ICF) (5) terminology. The ICF describes "capacity" as what a person can do in everyday life with limited or no influence of

environmental factors (EFs). For example, capacity would refer to the extent of difficulty to walk for a person with an amputated leg without the use of EFs such as prosthesis or crutches. As no influence of EFs is unlikely in most situations, we explicitly stated "limited influence" as part of the description of "capacity". Climate and air, for example, are EFs that may influence the capacity of someone with a pulmonary condition but cannot be removed or eradicated. However, one can potentially control air quality or humidify or dehumidify a room to reduce the influence of these factors to a negligible level. Of course, the quantification of "limited influence" is subjective, and this would be important to specify in rehabilitation research to facilitate comparison between studies.

(by addressing body structures, functions, and activities/participation)

This elaboration of the term "capacity" uses the ICF terms "body structures", "body functions", "activities", and "participation" – all components of the biopsychosocial model of functioning in the ICF (5) along with personal factors and EFs. The latter is already mentioned as part of the definition of "capacity" and is further described in the next section along with personal factors (PFs). To help clarify these ICF terms, here is an example in the context of a person living with paraplegia and has pressure sores: body structures would be the spinal cord and areas of the skin, body functions specifically related to pressure sores would be protective functions of the skin, activities could encompass changing and maintaining a body position, caring for the skin, maintaining one's health, and participation could be engaging in work, school, socializing or involvement in other life situations. The specific aspects of functioning that apply depend on the person's situation – underscoring the person-centredness of rehabilitation.

In the Delphi, deleting "body structures" had been suggested. However, we kept this term in the present definition as rehabilitation interventions address body structures in conjunction with the other components, e.g. assessment, fitting and training to use a prosthesis for an amputated lower limb. In this example, body functions like pain, exercise tolerance, gait and protective functions of the skin, as well as activities/participation aspects like walking various distances and on different surfaces, carrying out daily routine, self-care and performing work tasks, may also need to be addressed.

The individual aspects of functioning can be utilized in the rehabilitation process as part of goal-setting in the rehabilitation cycle.

And/or contextual factors related to performance

In contrast to capacity, according to the ICF, the "performance" of a person considers the influence of EFs on what the person does or can do in their usual environment. The present definition also includes PFs in addition to EFs. Although they are both contextual factors, they have to be considered separately. PFs are included in the current definition of rehabilitation as PFs are seen as critical to

understanding how the person engaged in rehabilitation experiences their health condition or disability. Some PFs are reflected in the description of "person-centred", i.e. individual's needs, resources, values and preferences. Although PFs are described in the ICF in general terms, there is no consensus on the definition of PFs nor a classification that identifies items of PFs. Thus, PFs are more difficult to identify than EFs.

EFs are clearly stated in the ICF as the "physical, social and attitudinal environment in which people live and conduct their lives" (5). In the same example of the person with paraplegia pressure sores, EFs could be, among other things, medication or surgery to treat the pressure sores, the patient self-care and transfer training for preventing the worsening of and future pressure sores, the health professional(s) who provide treatment, or the wheelchair cushion.

In the Delphi, there was a suggestion to include "cultural" and "historical" aspects as part of EFs that are more nuanced than what is currently specified in the ICF. Examples of these aspects are cultural heritage like a native language that may be important to people but lost in refugee status. The argument was that such cultural and historical elements are not reflected in the social environment as identified in the ICF. Although there is no specific domain in the ICF dedicated to cultural or historical aspects, there are items in the ICF that address the examples given. A person's refugee status can be operationalized with the ICF entity "human-caused events" such as conflict and wars that disrupts people's everyday lives and "may result in the displacement of people and destruction of social infrastructure, homes and lands". Cultural heritage could be covered to an extent by the ICF entity of "societal attitudes", defined as the "general or specific opinions and beliefs generally held by people of a culture, society, subcultural or other social groups…" (5).

Optimising

As "optimising" in the current definition falls under the PICO component of "Outcome", and this outlines the goal of rehabilitation, we decided to use the wording used by the World Health Organization (WHO) to define the aim of rehabilitation: "… to optimise functioning" (6). As in the WHO definition, "optimising" is coupled with "functioning" as the goal of rehabilitation. Each term is described comprehensively and individually to ensure that both terms are well understood.

The description of "optimising" in the current definition reflects different degrees of optimization [of functioning], i.e. improving, maintaining or limiting decline (changing trajectory in terms of deceleration and/or duration) to cover the varying health situations of persons engaged in rehabilitation or with potential to benefit from rehabilitation. Although desirable, improving functioning is not always the realistic goal of rehabilitation but instead maintaining or limiting decline. For example, geriatric patients whose functioning does deteriorate with age or terminally ill

persons. In such cases, the most realistic goal would be to maintain a good level of functioning as long as possible and limit decline by slowing down the pace of deteriorating functioning.

The description of "optimising" also considers the expected (natural) course of a health condition. For evidence producers, this is important as they aspire to evaluate the actual change in health status due to intervention and want to avoid confounding the results with the expected (natural) course of a health condition.

Functioning

The description of "functioning" is directly derived from the ICF. Essentially, it is the dynamic interaction of the full range of functions and structures of the body, the simple and complex activities that a person performs and the extent the person can participate in life situations in the overall context of their environment. An explanation of these elements can be found in the extensive descriptions of "capacity" and "by addressing body functions, activities and personal factors". Since functioning can be best understood in the backdrop of EFs, we also refer to the description of "contextual factors related to performance above".

It has been suggested that using the term "function" is better than "functioning". We use "functioning" as the term WHO uses pertaining to rehabilitation (6). Furthermore, we wanted to differentiate the overarching goal of rehabilitation from the "functions" of body systems.

Population

Based on the results of the consensus meetings and Delphi study and in consideration of the WHO definition of rehabilitation and the 2020 published *Global estimates of the need for rehabilitation based on the Global Burden of Disease Study 2019* (7), we decided to be inclusive concerning the population of research potentially considered rehabilitation research.

Persons with health conditions

This population encompasses all persons experiencing limitations in functioning due to a disease, disorder, injury or trauma. Health conditions are usually classified using the International Classification of Diseases (ICD) (8). This population is named in the current definition to account for studies that identify the study population as persons with a specific health condition.

Currently experiencing disability

This and the subsequent populations are specified in the current definition to account for studies identifying the study population in terms of disability status, irrespective of aetiology.

According to the World Report on Disability (WRD), there is no consensus on the definition of "disability" (9). Thus, the WRD adopted the understanding of disability from the ICF, i.e.

“impairments, activity limitations and participation restrictions". In other words, disability is on the negative side of the continuum of functioning. It refers to the negative aspects of the dynamic interaction between a person's health condition and contextual factors, specifically the environmental barriers that hinder the person from executing activities and from fully participating in society.

In contrast to the following two disability-related populations, this population includes persons who may be experiencing a disability at the time of data collection but do not have a permanent disability or are not yet determined to have a permanent disability.

Likely to experience disability

This population refers to persons with a health condition who have a risk that the extent of functioning limitation evolves into a disability. These persons are not (yet) determined to have a disability, neither short-term nor permanent.

Persons with disability

This population refers to persons who are determined to have or consider themselves as having a chronic or permanent disability. They are at risk of recurrences or progressive degeneration. They can also be followed-up in time and require rehabilitation e.g. in connection with ageing, new assistive device provision, change in personal goals.

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