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Defining the principles of musculoskeletal disability and rehabilitation

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A B S T R A C T

Disability is strongly associated with musculoskeletal conditions such as arthritis, low back pain and other soft tissue and joint disorders. The burden of these conditions may become exponentially high in the absence of rehabilitation. To understand disability, the ICF (International Classification of Functioning, Disability and Health) provides the framework to disentangle the different domains that comprise disability. Disability in ICF term is defined as an impairment of the body functions and body structure and limited activity and restricted participation and can be influenced by environmental and personal factors. The ICF can provide the domains of disability pertinent to individuals with musculoskeletal conditions by using ICF Core Sets. Musculoskeletal-related disability is amenable to rehabilitation and there is evidence to suggest the effectiveness of multidisciplinary forms of rehabilitation programs. Community-based programs as an extension of rehabilitation also have evidence to improve clinical and quality of life outcomes in people with musculoskeletal conditions.

Defining disability and rehabilitation

As a pre-requisite to understanding, it is essential that we are first able to define the construct of interest and its attributes or characteristics. This requirement is particularly a challenge in a multi-

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factor and multi-stakeholder field like "rehabilitation" alongside the discussion of health conditions such as those of musculoskeletal in nature which can at times be complex. Defining the construct of rehabilitation is a daunting task particularly given the complexity of rheumatologic and musculoskeletal disorders with rehabilitation as a process just as complex. However, rehabilitation *is married to disability.* Rehabilitation has many characteristics that if understood and captured appropriately and adequately, will benefit the discussion on how to mitigate the effects of disability recognizing that disability also has features that are multifactorial and multi-stakeholder. In understanding and defining disability, we should try to examine the concepts that encapsulate disability that will then inform proper rehabilitation process.

A prerequisite to defining rehabilitation is to first define "disability" (taken within the context of rehabilitation"). In 2001, the WHO (World Health Organization) developed the ICF (International Classification of Functioning, Disability and Health) [1] to serve the purpose of being a reference framework in defining disability from an integrative biopsychosocial perspective. The ICF consists of various interacting components to include body functions, body structure, and activities and participation of an individual that depending on the nature of interaction of these components can lead to functioning (i.e. positive characteristics) or disability (i.e. negative characteristics) of the individual. These interactions can be influenced also positively or negatively depending upon the environment (e.g. environmental facilitator or environmental barrier) and personal factors (Fig. 1). Hence, disability in ICF term is defined as an impairment of body functions and body structure and limited activity and restricted participation which may be associated with common and burdensome musculoskeletal conditions such as arthritis and low back pain. *In essence the ICF can provide those areas (or domains) of functioning and disability pertinent to an individual or to a group of individuals.*

As the entire ICF taxonomy consists of more than 1400 ICF categories or "items", empirically driven ICF Core Sets have been developed to capture only those categories that are relevant to a health condition(s) including musculoskeletal conditions, or setting(s). ICF Core Sets make the ICF practical and feasible to apply. For illustration purpose (see Fig. 2), a collection of common essential categories (i.e. brief version of a Core Set) present in at least 4 out of the six selected musculoskeletal ICF Core Sets: rheumatoid arthritis, low back pain, osteoarthritis, ankylosing spondylitis, osteoporosis, and chronic widespread (including fibromyalgia) [2]. At a glance, the ICF categories relevant to musculoskeletal conditions cover a broad range of functioning domains across body functions (e.g. physical and emotional functions), body structures, and activities and participation (e.g. physical and social relationships and activities, community life participation). These categories were proven to be relevant when assessing and intervening on individuals with the abovementioned musculoskeletal health conditions. Hence, the list of categories (Fig. 2) can be used as a potential pool of domains to field in clinical trials and intervention studies and also clinical care in musculoskeletal conditions. All ICF Core Sets for various health conditions and settings and can be freely downloaded at http://www.

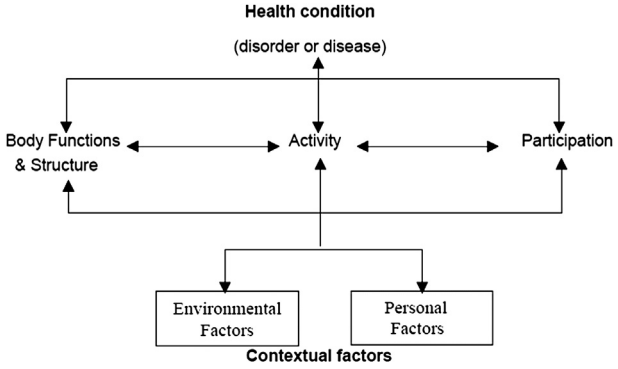

Fig. 1. International Classification of Functioning, Disability and Health (ICF) [1].