

## Guest Editorial

# ICF and Neurorehabilitation

Christina Brogårdh<sup>a,b,\*</sup> and Jan Lexell<sup>a,b</sup>

<sup>a</sup>*Department of Health Sciences, Lund University, Lund, Sweden*

<sup>b</sup>*Department of Neurology and Rehabilitation Medicine, Skåne University Hospital, Lund, Sweden*

On May 2001, the International Classification of Functioning, Disability and Health (ICF) was presented by the World Health Organisation (WHO). The ICF has been developed from the International Classification of Impairments, Disabilities, and Handicaps (ICIDH), which was first published in 1980. Twenty years later, after systematic field trials and international consultation, ICF was endorsed by the 54th World Health Assembly for international use [1].

ICF provides a unified and standard language and serves as a framework for the description of health and health-related states (i.e., disability). It is a complement to the ICD-10 (International Classification of Diseases), where health conditions (diseases, disorders, injuries, etc.) are classified. ICF defines components of health and health-related components of well-being. It is described from the perspective of the body, the individual and society in different components: Body Functions and Structures; Activity and Participation; Environmental Factors and Personal Factors (Fig. 1). ICF systematically groups different domains for a person in a given health condition. Functioning is an umbrella term encompassing positive aspects of Body Functions and Structures, Activity and Participation; similarly, disability serves as an umbrella term for negative aspects, i.e., Impairments, Activity limitations and Participation restrictions (Table 1). ICF also lists environmental factors that interact with all these constructs. In this way, ICF enables the user to record useful pro-

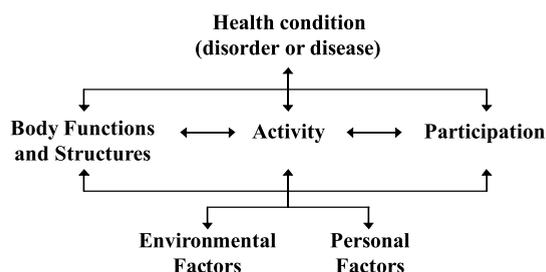


Fig. 1. A schematic presentation of the The International Classification of Functioning, Disability and Health (ICF) and the interactions between the different components.

files of an individual's functioning, disability and health in various domains, and how these interact at all levels. By that, the ICF integrates different perspectives into a bio-psycho-social model, offering a holistic view of an individual, with or without a disease or disability.

As both functioning and disability are associated with health conditions, and are classified in the ICF, clinicians and researchers are encouraged to utilize the ICD-10 and the ICF together. Information about a diagnose and related functioning thereby provides a broader and more meaningful picture of the health of people or populations, which is important for the decision making purposes.

ICF is a multipurpose classification designed to serve various disciplines and different sectors and aims to:

- provide a scientific basis for understanding and studying health and health-related states, outcomes and determinants;
- establish a common language for describing health and health-related states in order to improve

\*Address for correspondence: Christina Brogårdh, RPT, PhD, Department of Health Sciences, Lund University, PO Box 157, SE-22100 Lund, Sweden. Tel.: +46 46 222 18 92; E-mail: christina.brogardh@med.lu.se.

Table 1

An overview of the parts, components, definitions and positive and negative aspects in the International Classification of Functioning, Disability and Health (ICF)

Parts	Functioning and Disabilities		Contextual factors	
Components	Body Functions and Structures	Activity and Participation	Environmental factors	Personal factors
Definitions	Body Functions are the physiological functions of the body systems Body Structures are anatomical parts of the body	Activity is the execution of a task or action by the individual Participation is the individual's involvement in his/her life situation	Environmental factors make up the physical, social and attitudinal environment in which people live and conduct their lives	Personal factors are the particular background of an individual's life and living, and comprise features of the individual that are not part of the health condition or health states
Positive aspects	Functional and structural integrity	Activity and Participations	Facilitators	Not applicable
Negative aspects	Impairments	Functioning Activity limitations Participation restrictions Disability	Barriers	Not applicable

communication between different users, such as health care workers, researchers, policy-makers and the public, including people with disabilities;

- permit comparison of data across countries, health care disciplines,
- services and time;
- provide a systematic coding scheme for health information systems.

Several countries around the world are now using the ICF in a variety of fields, even though there are differences how it has been implemented in clinical practice and in research. Nevertheless, ICF has become a valuable tool to increase communication between different users, to help clinicians to classify the consequences of a disease or disability, and to plan and evaluate different interventions as part of the rehabilitation process.

The expanding use of ICF during the past decade has led to a rapid increase in the number of articles with the ICF, its use and implementation. This thematic issue provides examples of how the ICF can be applied within neurorehabilitation and how the ICF can expand our knowledge of the possibilities that lies within this framework. The articles also highlight certain limitations and challenges with ICF and the need for future research. The authors are all experienced in the area of ICF and have contributed to the knowledge transfer in different disciplines.

In the first paper in this thematic issue, Lexell and Brogårdh describe the use of ICF in the four phases of the rehabilitation process, and specifically the development and use of an ICF based rehabilitation plan, and how the ICF can be implemented into assessment, goal setting, interventions, and evaluation and outcome measurement.

In the second paper, Tempest and Jefferson describe how clinicians from inpatient and community services, can be engaged in the implementation of the ICF within neurorehabilitation. Although ICF is a globally accepted framework, there remains scarce evidence on the process and outcome of implementing the ICF. The authors report how ICF can enhance communication within and beyond the acute stroke service, foster holistic thinking and clarifies team roles.

Raggi and co-workers describe in their first paper how ICF can be used as a framework to collect and interpret data on the extent and variety of disability in neurological conditions. They present which ICF categories that are most commonly reported in persons with different neurological condition.

In their second paper, Raggi et al. explore determinants of severe disability in patients with different neurological conditions. They present how count-based extension indexes can be used to address severe disability, and assess the association between severe disability, sociodemographic and health status information.

In the fifth paper, by Martinuzzi and co-workers, the implementation of the children and youth version of ICF (ICF-CY) is described as a guiding structure in framing the rehabilitation project in a pediatric outpatient clinic dealing with adolescents with cerebral palsy and the complex needs of team members and families. They describe positive experiences on the feasibility of the introduction of ICF-CY language and on the positive response by the stakeholders.

Laxe and co-workers, in the sixth paper, describe the operationalizing of ICF by the development of ICF Core Sets in the rehabilitation of traumatic brain

injury (TBI). By using the most salient categories of the ICF, i.e., as few as possible to be practical but as many as necessary to accurately describe aspects of functioning relevant to persons with TBI, a bank of items addressing functioning for assessment and for defining goals and setting up interventions have emerged.

Activity and participation are two central components of the ICF. However, there has been some debate about their meaning, definitions and use. In the seventh and final paper in this thematic issue, Arvidsson and co-workers discuss how these two terms actually are used with examples from studies of people with intellectual disabilities. They emphasize how interdisciplinary differences regarding understanding of ICF and the concepts of activities and participation may hinder its unifying purpose and confuse the interdisciplinary communication rather than facilitating it.

In summary, this thematic issue intends to present how ICF can be used within neurorehabilitation by giving examples from different areas. All areas in which the ICF can be implemented are by no means covered in this issue, and there are numerous other examples of its use and implementation into clinical practice and research related to neurorehabilitation. It is our hope that these articles will broaden and deepen our knowledge of ICF and may serve as an inspiration for clinicians and researchers in their ambition to develop the use of ICF and for future research.

## Reference

- [1] World Health Organization (2001). *The International Classification of Functioning, Disability and Health (ICF)*. Geneva: World Health Organization.