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SPECIAL REPORT

# INTERNATIONAL CLASSIFICATION OF FUNCTIONING, DISABILITY AND HEALTH: AN INTRODUCTION AND DISCUSSION OF ITS POTENTIAL IMPACT ON REHABILITATION SERVICES AND RESEARCH

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**This paper provides an introduction to the content and concepts of the World Health Organization's new International Classification of Functioning, Disability and Health (2001) and discusses its potential applications in rehabilitation services and research. Great interest has been expressed in the International Classification of Functioning, Disability and Health by its potential users and there is growing evidence that its conceptual framework is consistent with the understanding of functioning both for professionals and for people with disabilities.**

*Key words:* ICF, International Classification of Functioning, Disability and Health, rehabilitation research, rehabilitation concepts, disability studies.

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## INTRODUCTION

This paper provides an introduction to the central concepts of the World Health Organization's (WHO's) new classification International Classification of Functioning, Disability and Health (ICF) (1) and discusses the prospects and dilemmas that the ICF presents in practical rehabilitation work, based on initial experiences in Denmark and the other Nordic countries.

The potential of the ICF theoretical framework seems promising and a large number of countries have expressed interest in the need for such a framework and its relevance to the professional areas of rehabilitation and public health. There is emerging interest in the different aspects of functioning and it seems that the ICF may also support the documentation and evaluation of quality services in rehabilitation. During the past two years a number of papers have been published in which the authors express their interest in the ICF as a common framework for clinical work and for research in rehabilitation (2–6). The framework was developed over a period of time, commencing with the work of Nagi in the 1960s, further conceptualized in the "Disablement model" by Verbrugge & Jette (7), and, also of great importance, the work by Fougeyrollas, addressing the importance of the environment as a major determinant to what Fougeyrollas terms the "Handicap Creation Process" (8).

To my mind, the WHO's approval of the ICF will not only have an impact in the theoretical uniformity of the concepts, but also, and more importantly, may guide member states in their future work in the health sector of population needs in functioning and disability.

The ICF is the result of a revision process based on the ICIDH (9), and has been ongoing during the last decade. "Revision" may not be the right word, as it is actually a new classification, which stands on a different theoretical framework than that of the ICIDH from 1980. The WHO's new classification was approved by the World Health Assembly, as an official member of the WHO Family of Classifications, in May 2001. The "Family of Classifications" launched contains both the ICD and the ICF as the main international classifications of health. From a recent international meeting, held by the WHO in Trieste, Italy in April 2002, the WHO's director general, Dr Gro Harlem Brundtland, likened the ICF to the Swiss army knife, with many tools and possible uses[1].

Since the release of the ICIDH by WHO in 1980, to be used in field trials, there has been continuous discussion between researchers, professional clinicians and the disability movement on both the theoretical conceptualization and the use of the ICIDH. Although the ICIDH was not recognized as an official classification, it has had an impact on development in research and education. The literature on this topic amounts more than 1500 references which can be classified into two main categories: On the one hand, references which are using ICIDH as theoretical framework in different studies, and on the other hand, references of papers, criticizing the idea and concepts of ICIDH, and pointing out the shortcomings of adopting a medical-biological view on disability. Recently, Pfeiffer has debated the need for a classification as such (10, 11). Pfeiffer's view seems to capture the major criticism from people with disabilities, as similar views have been expressed by e.g. European Disability Forum. Pfeiffer emphasize that as long as the conceptual basis of ICF is a medical model, disability issues are getting medicalized. According to Pfeiffer this may be the

[1] Dr Brundtland's speech is available from www.who.int.

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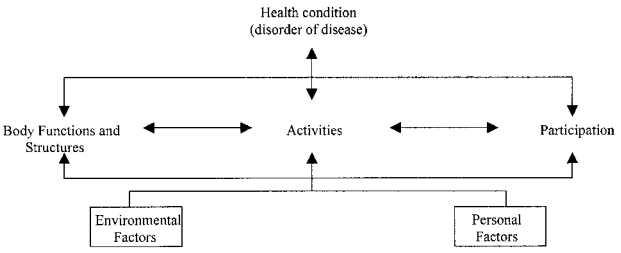


*Fig. 1.* Current understanding of the framework of the ICF. Reproduced by permission of the World Health Organization (WHO) (1).

first step towards eugencics and a 'class-based' evaluation where 'normal' is the standard for measure. He attacks WHO for maintaining stigmatization of people with disabilities. Even in the revised form Pfeiffer express ICIDH-2 (the draft version) as a threat to the disability community (11).[2]

Classifying people with disabilities, in the same way as diseases, does not make sense, but using the classification to obtain systematic information about a person's functioning can provide professionals with relevant information and can guide the selection of interventions. Researchers and planners have an obvious need for operationalization of those conditions we call disability, and for different purposes. The disability movement, however, address the criticism that a classification in this matter may stimulate increased stigmatization, and there is a concern that the classification may be abused in priority setting. The various interests in the same field: researchers, who want scientifically based knowledge, and people with disabilities, who do not want to be "classified", may have negatively impacted on some of the necessary conceptual development and debate.

The distinction between "disability" and "functioning" is not easily made, since there is no fixed limit or a "gold standard" to determine whether a person is disabled. Instead, the concept of disability or malfunctioning, should be seen as relativistic, bound to the current culture and the social context, where people live their lives, and in this context, as it relates to health. Disability must also be seen in the societal context, and can sometimes be described according to existing laws and regulations within the given society.

This issue is far more complicated than a straightforward dichotomous distinction between having a disability or not. This must also be taken into account when scientists try to conceptualize and quantify the malfunctioning, disability or impairment in populations (12, 13).

## FROM ICIDH TO ICF

Even if the ICIDH has described the components of disability on a linear, progressive scale, the understanding of disability is relativistic and multifactoral in its nature. This was not captured by the first version of the ICIDH from 1980, and this issue was a central aspect in the discussions during the 1980s.

The WHO did take this into account during the revision, and has conceptualized the framework of the ICF in line with modern understanding of disability, containing both a medical perspective and a social perspective. As presented in Fig. 1, the framework of functioning is related to aspects of health. The framework is introduced as a *bio-psycho-social* approach to disability, including contextual factors: *environmental factors* and *personal factors*.

Since the first release of the ICIDH, it has been emphasized that disability has to be understood within a social and environmental contextual framework. Studies have been performed in Quebec, Canada, based on the Quebec Classification and the framework "Handicap Creation Process" (8, 14). This work has contributed to the current conceptualization of the environmental impact on actual functioning at the individual level. This conceptualization puts the ICF in line with modern understanding of "disability" and "functioning"; disability not only is a consequence of a health condition, but is also determined by the physical environment, the services available in the society, attitudes and legislation, which are *environmental factors* in this respect.

The overall term in the framework is *functioning,* which covers the components *body functions, body structures, activity and participation. Functioning* is used as the positive or neutral wording and the negative aspect is called *disability. Disability*

[2] The Dutch WHO Collaborating Center has an extensive database on ICIDH literature.

Table I. *Concepts and terminology of the ICF related to components*

| Component | Body functions<br>Body structure | Activity | Participation | Environmental factors |
|---|---|---|---|---|
| Definition | *Body functions* are the physiological functions of body systems (including psychological functions). *Body Structures* are anatomical parts of the body, such as organs, limbs and their components. | *Activity* is the execution of a task or action by an individual. | *Participation* is involvement in a life situation. | *Environmental factors* make up the physical, social and attitudinal environment in which people live and conduct their lives. |
| Negative aspect | Impairment | Activity limitation | Participation restriction | Barriers/Hindrances |

Table II. *Overview on domains in the ICF Classification, 2001*

| Body functions and body structures | Activities and participation | Environmental factors |
|---|---|---|
| *Body functions* | | |
| 1. Mental functions | 1. Learning and applying knowledge | 1. Products and technology |
| 2. Sensory functions and pain | 2. General tasks and demands | 2. Natural environment and human-made changes to the environment |
| 3. Voice and speech functions | 3. Communication | 3. Support and relationships |
| 4. Functions of the cardiovascular, haematological, immunological and respiratory systems | 4. Mobility | 4. Attitudes |
| 5. Functions of the digestive, metabolic and endocrine systems | 5. Self-care | 5. Services, systems and policies |
| 6. Genitourinary and reproductive functions | 6. Domestic life | |
| 7. Neuromusculoskeletal and movement related functions | 7. Interpersonal interactions and relationships | |
| 8. Functions of the skin and related structures | 8. Major life areas | |
| | 9. Community, social and civic life | |
| *Body structures* | | |
| 1. Structures of the nervous system | | |
| 2. The eye, ear and related structures | | |
| 3. Structures involved in voice and speech | | |
| 4. Structures of the cardiovascular, immunological and respiratory system | | |
| 5. Structures related to the digestive, metabolic and endocrine systems | | |
| 6. Structures related to the genitourinary and reproductive systems | | |
| 7. Structures related to movement | | |
| 8. Skin and related structures | | |

has changed meaning from ICIDH to ICF, from being *an individual's attribute of limited activities* to currently being the *negative aspect* of *functioning*. It is not only one dimension of functioning, but is part of the overall concept.

Table I provides a basic overview of the definitions of the components of ICF as a framework. It should be observed that this is not the structure of the classification. *Body functions, body structures, activity and participation* constitute one part of the classification and the other part is made up by *contextual factors*, both *environmental factors* and *personal factors*, although the personal factors are not classified, but are part of the conceptual framework.

The *components* of ICF are structured in *domains and categories*. Table II gives an overview of the domains within the components. Additionally it is possible to detail the categories, and all are included to the second level, as from the domains, and for body functions especially, there are categories on third level, as from component level.

As the conceptual framework is meant to be understood in a dynamic and not a linear way, the concept has changed as from a causal linear relation between the components to a dynamic, interactive framework, wherein all components are related and influence one another (15) (see Fig. 1).

In the introduction of the ICF, the use and meaning of qualifiers are introduced. The central message is that one generic, ordinal scale with five steps is suggested as being applicable to all categories in the classification. In addition to the five steps, it is possible to register information as "unspecified" and "not applicable". Through field trials in Denmark, practitioners have identified problems with use of the qualifiers suggested in the ICF, as the generic scale cannot be applied in all categories (Dahl, unpublished observations). This may originate in the obvious statement that the categories are of different character and nature and, as a consequence, may need different types of rating scales for measures. This issue needs further study and development in the coming years, as well as studies mapping existing instruments into ICF categories.

## ADVANCES, LIMITATIONS AND SHORTCOMINGS

*"The title International Classification of Functioning, Disability and Health is confusing. One may think that we have to classify Functioning and Disability and thereafter classify health. Health is one of the terms added recently by the WHO, and it has caused much confusion and a lot of reactions from those involved in the process. Preferably, the title should state the scope of the classification and thereby avoid misunderstandings, as to the content. In most theories of health and ill health, functioning and disability are central ingredients of health and should not be disentangled."*[3]

This statement by Dr Nordenfelt, seems, to my mind, to

[3] Oral presentation at the 2nd Nordic Baltic conference by Dr Lennart Nordenfelt, University of Linköping. The presentation can be obtained from www.nordclass.uu.se.

capture the central problem with the title of the published classification.

Late in the revision process Activity (A) and Participation (P) were put into a joint list, as they are the same component, and in the annexes to the classification, several suggestions are made for use of A and P. Several coding guidelines are also suggested in the annexes. If different coding strategies are used in national data sets, there is no possibility for comparing data across countries. Uniform coding conventions are an important prerequisite for maintaining high data quality, This is seen as a major problem, which should be addressed in further studies, in addition to the question as to whether the use of different coding guidelines gives the same output in statistics and records.

There is no agreement among users whether the domains in the component Activity and Participation, are *either activity or participation* or *activity and participation*. As a result of this, some countries are developing their own distinctions of Activity and Participation (16).

The conceptual framework of the ICF identifies that a majority of outcome measures, used in clinical rehabilitation and research reflect *body functions, body structures, and activity*, as these components often are major areas in medical rehabilitation. The Quebec User Evaluation of Environmental Factors measures the impact of the environment. Measuring *participation* may be a challenging task, and the WHO have developed WHO-DAS II, which will be released in 2002. WHO-DAS II is a measure of aspects of functioning, and the conceptual background is the ICF.[4]

From my own experiences with the Danish field studies and discussions with Nordic colleagues there seems to be a strong consensus on the suggested conceptual framework among professionals working in the field of rehabilitation, in the health sector as well as in the social sector. To my mind still more studies need to be done in order to make the ICF operational for practical use.

## POTENTIAL IMPACT FOR FUTURE REHABILITATION SERVICES AND RESEARCH

From personal experience in discussions, teaching and ongoing studies, it seems that the theoretical framework makes sense for both professionals and disabled people. The discrepancies in views between professionals and people from the disability movement are similar to those expressed by Pfeiffer (11). In the Nordic countries there are several studies underway, either implementing the framework in rehabilitation settings, or doing research with the ICF as the theoretical framework. Wade may be right when he states that the major advances in rehabilitation are on the conceptual level, rather than in improving quality of interventions (6). The conceptualization can be seen as the first step in improving the quality of rehabilitation. The use of common terms within the team allows the formulation of goals for rehabilitation, which are identifiable and meaningful to all involved, and enables professionals to record interventions and outcomes in a standardized professional language within a uniform framework.

Different areas of rehabilitation will certainly have different needs for documentation and assessment, and it is likely that special versions of the ICF will be developed for use in specific areas.

## CONCLUSION

The WHO has provided a classification on functioning, which is strongly needed for many purposes within the health area. For the first time, a classification has been officially launched and recommended for official use in the UN member states. The framework of functioning is seen to be a great leap forward, compared with the original ICIDH classification. However, some central aspects of the classification still need further development and research, especially those qualifiers suggested here. The ICF is seen as a promising input for the future development of rehabilitation services and research.

## REFERENCES


1. ICF International Classification of Functioning, Disability and Health. Geneva: World Health Organization; 2001.
2. Dahl TH, Vik K. Is ICIDH-2 important and useful for occupational therapy and occupational therapists? Irish J Occupat Ther 2000; 30: 40–48.
3. Grimby G, Smedby B. ICF approved as the successor of ICIDH. J Rehabil Med 2001; 33: 193–194.
4. ICIDH-2 International Classification of Functioning and Disability, Beta-2 Draft. Üstün TB, editor. [Beta 2 draft]. Geneva: World Health Organization, 1999.
5. Gray DB, Hendershot GE. Applying outcomes research to disability and health. The ICIDH-2: developments for a new era of outcomes research. Arch Phys Med Rehabil 2000; 81 (suppl 2): S10–S14.
6. Wade D. Recent advances in rehabilitation. BMJ 2000; 320: 1385–1388.
7. Verbrugge LM, Jette AM. The disablement process. Soc Med Sci 1994; 38:1–14.
8. Fougeyrollas P. Documenting environmental factors for preventing the handicap creation process: Quebec contributions relating to ICIDH and social participation of people with functional differences. Disabil Rehabil 1995; 17: 145–153.
9. International Classification of Impairments, Disabilities and Handicaps. A manual of Classification relating to the consequences of disease. Geneva: World Health Organization, 1980.
10. Bickenbach JE, Badley EM, Chatterji S. A reply to David Pfeiffer, 'The ICIDH and the need for its revision'. Disability & Society 1998; 13: 829–831.
11. Pfeiffer D. The devils are in the details; ICIDH-2 and the disability movement. Disability & Society 2000; 15:1079–1082.
12. Murray C, Lopez A. Global burden of disease. Boston: World Health Organization, 2000.
13. Helander E. Prejudice and dignity. An introduction to community-based rehabilitation. New York: United Nations Development Programme, Division for Global and Interregional Programmes, 1992.
14. Fougeyrollas P. The Handicap Creation Process – how to use the conceptual model. ICIDH International Network 1991; 4.
15. Bickenbach JE, Chatterji S, Badley EM, Üstun TB. Models of disablement, universalism and the international classification of impairments, disabilities and handicaps. Soc Sci Med 1999; 48: 1173–1187.
16. Development of mutually exclusive lists for activities and participation: WHO International Classification of Functioning, Disability and Health. Ottawa: Canadian Institute of Health Information, 2001.


[4] Information on WHO-DAS II can be obtained at www.who.int/classification/icf.