

Using the International Classification of Functioning, Disability and Health (ICF) to Improve Understanding of Disability and Functioning

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Abstract: The International Classification of Functioning, Disability and Health (ICF) has been increasingly recognized for facilitating improved statistical data collection, social policy development, and clinical research in disability and health sectors. Many practitioners working in disability and health-related fields as well as government officials and policymakers in multiple countries consider it to be a useful system to better situate disability, health, and functioning. Positively, the ICF's biopsychosocial framework recognizes disability and functioning as the dynamic individual and environment interaction, promoting a more realistic perspective for social workers and related practice-oriented professions such as occupational therapy and speech language pathology. Despite being an integrative model of disability, there are some problematic aspects within the ICF classification that have been raised specifically by advocates within the disability community and educators in disability studies. This article describes the ICF system, its utility, and its overall strengths and weaknesses in promoting a better understanding of disability and functioning.

Key words: WHO, disability classification, social model of disability

Introduction

In 2001 the World Health Organization (WHO) published its International Classification of Functioning, Disability and Health (ICF) that focuses upon health and health related domains. After seven years of testing for cross-cultural applicability in over 50 countries, the ICF was finalized and then endorsed by 191 countries of the 54th World Health Assembly. It is currently available in several official WHO languages including Chinese, English, French, Russian and Spanish; however, it has been translated into over 30 more languages. Diverse stakeholders influenced its overall development including persons with disabilities, professionals across disciplines, researchers, statisticians, educators, insurers, and government officials.

Currently, the multi-purpose ICF is being implemented throughout the world in policy, research, education, and clinical practice. For example, in the United States the American Speech-Language-Hearing Association (ASHA) has used the ICF as the organizing framework for its "person-centered focus on function" series that cover health conditions such as traumatic brain injury, dementia, and several hearing loss and falls (ASHA, 2015). In Sweden the ICF has been demonstrated to be useful in the electronic health record for social service management process among the elderly population (Almborg & Welmer, 2012). And ICF terminology has been incorporated into Japan's comprehensive rehabilitation planning form, a required document for billing of rehabilitation services (Threats, 2015).

Moreover, the ICF has significant potential to become the common global framework for organizing and communicating information on human functioning and disability (WHO, 2001). First, the National Committee on Vital and Health Statistics (2003) recognized the ICF as the only viable candidate for classifying functional status in clinical and administrative records. Secondly, the classification covers a wide spectrum of life domains, which makes it conducive to use across sectors including education, employment, health care, housing, and social services. Finally, a greater number of decision-makers consider the ICF to be the only valid and reliable standard available for worldwide disability data collection and management (Bickenbach, 2011). For example, the United Nations in its *Guidelines and Principles for the Development of Disability Statistics* (2002) recommended to countries to use the ICF in disability measurement as a basis for the definition of the population with disabilities. In the recently published World Report on Disability (2011), the ICF is used extensively and endorsed by not only the World Health Organization but also the World Bank.

The ICF Model or Framework

Within the ICF framework and classification there are both individual and environmental factors, reflecting the increased shift in viewing disability and functioning as the interaction of an individual in his/her unique environment (Bagnato et al., 2011). The National Institute on Disability and Rehabilitation Research (NIDRR) first adopted this new paradigm in its long-range plan in the late 1990s and early 2000s. Sharing this same viewpoint, the Institute of Medicine's report *Disability in America* (IOM, 1991) defined disability as "a gap between a person's capacities and the demands of relevant, socially defined roles and tasks in a particular physical and social environment."

As a positive theoretical step forward, the World Health Organization recognized the incompleteness of two primary models historically referenced in ongoing disability discourse – namely, the medical model (which views disability as part of the person caused by disease, trauma, or other health/mental health condition) and the social model (which emphasizes and politicizes how the environment creates disabling conditions for persons). Bridging these two key disability theories, the WHO developed an integrated model of disability for the ICF system called the "biopsychosocial" model, which describes how people actually live with their health condition influenced by social and environmental components (Bickenbach, Chatterji, Badley, & Ustun, 1999; World Health Organization, 2001).

The ICF model asserts that disability frequently starts with some health condition that likely leads to impairments, which in turn contributes to activity limitations and participation restrictions all influenced by contextual factors (environmental and personal factors). Figure 1 depicts the ICF conceptual framework and the basis for its overall classification system. The ICF is organized into multiple domains expressed along a continuum of functioning to disability. Functioning is the umbrella term for all body functions and structures, activities and participation (execution of a task or activity by an individual) and participation (involvement in a life situation). Disability is the umbrella term for impairments (loss or abnormality of body function or structure), activity limitations (difficulties individuals may have in executing activities), and participation restrictions (problems individuals may experience in involvement in life situations).

Key ICF Components

The ICF classification is divided into chapters addressing approximately 484 body functions, 294 body structures, 382 activities and participation items, and 253 environmental factors. There are domains encompassing all body functions and structures (see Table 1), ranging from mental functions to voice and speech functions as well as structures for movement and skin related structures. For the Activities and Participation component, there are nine primary domains including: (1) Learning & Applying Knowledge, (2) General Tasks and Demands, (3) Communication, (4) Movement, (5) Self Care, (6) Domestic Life Areas, (7) Interpersonal Interactions, (8) Major Life Areas, and (9) Community, Social & Civic Life.

Contextual factors are recognized as an important component in the ICF in terms of environmental factors and personal factors. While there is a section on the environment, personal factors were not included in the classification due to wide variability globally. Personal factors include variables such as age, race, gender, education, social background, psychological assets, lifestyle habits, and upbringing (WHO, 2001). This has been identified as a weakness of the classification and an area for future work, possibly another main section of the ICF.

For the environment section, there are five main chapters including: (1) Products and technology, (2) Natural environment and human made changes to the environment, (3) Support and relationships, (4) Attitudes, and (5) Services, systems and policies. Certainly, the inclusion of an entire section on the environment is more aligned with a social model of disability and makes the ICF more attractive to those who support such a social model. Interestingly, qualifiers in the ICF allow the simultaneous identification of both barriers and facilitators within a person's environmental context. Being able to identify and increase the positive facilitators while decreasing or removing the negative barriers is critical for facilitating change in the lives of persons with disabilities and their families. Environmental changes include such aspects as legislative reform, building modification, capacity building, and technological developments.

Positive Changes from ICIDH to ICF

Unlike its predecessor, the International Classification of Impairments, Disabilities and Handicaps or ICIDH (WHO, 1980), which received much criticism by the disability community, the ICF reflects multiple changes in line with more recent paradigm shifts around the meaning of functioning and disability as previously discussed. The ICIDH was considered too linear in nature where the health condition automatically leads to impairments, disability, and handicaps without variation. It is well established that persons with disabilities may function without difficulty in certain life domains due to assistive technology, personal support, and other factors. More positively, the ICF presents an interactive, dynamic framework of disability and functioning that accounts for such realistic variation in the lived experience among persons with disabilities. And neutral terminology has been used in the ICF unlike the previous version that included negative terms such as "handicap."

In addition, the ICIDH emphasized heavily the individual as the locus of intervention without equal emphasis on the environment as the target for change. Now, the ICF views disability beyond a medical or biological dysfunction and recognizes the social aspects contributing to disability (Van Hove et al., 2012). By including policies, programs and services in its environmental section within the classification, the ICF provides a mechanism to identify strategies for intervening at an organizational or systems level and removing constraints or barriers that disabled individuals in their communities (Saleeby, 2007).

As another positive development, the ICF also addresses the needs of children and youth through the ICF-CY, or the International Classification of Functioning, Disability and Health for Children and Youth. Published by the World Health Organization in 2007, this version addresses developmental aspects of childhood from birth to age 17 with specialized domains such as play. Due to its comprehensive nature addressing children and youth issues, the ICF-CY is particularly useful to understand functioning in children and youth and facilitates the identification of potential interventions (Simeonsson, Leonardi, Lollar, Bjorek-Akesson, Hollenweger & Martinuzzi, 2003). Like the ICF, the ICF-CY recognizes the impact of the environment (social and physical factors) on individual functioning and disability in conjunction with a person's health condition. This supports a more social model of disability, which considers disability the result of society, rather than a person's impairment or difference.

Increasing Support of the ICF

As the result of these and other changes, the ICF has increasingly become more favorable among persons with disabilities, family members of persons with disabilities, and professionals with and without disabilities working in disability and health related fields. In fact, many persons with disabilities as well as representatives from disability organizations including Disabled Peoples International, European Disability Forum, and Inclusion International influenced the ICF development process.

As indicated by Rachel Hurst (2003) in her capacity as the representative of the World Council of Disabled Peoples' International (DPI) to the ICIDH revision process:

“Use of the environmental factors within the ICF will ensure appropriate policies, systems and services for health care and support, provide measurable indicators for health status and sustainable development and underpin the recognition that disability is a human rights issue.”

Positively, the ICF has been officially accepted as a social classification by the United Nations and it has been recommended for use as a standard data collection mechanism to help enforce the monitoring requirement in conjunction with the CRPD (Bickenbach, 2011). Although the ICF is not explicitly mentioned in both the Standard Rules on the Equalization of Opportunities for Persons with Disabilities and the Convention on the Rights of Persons with Disabilities, its conceptual foundation is reflected in these key United Nations documents (Cieza & Stucki, 2013). Specifically, the UN recognizes disability as the dynamic interaction of the person within his or her environmental context. In the CRPD Preamble, disability is defined as

the “interaction between persons with impairments and attitudinal and environmental barriers that hinder their full and effective participation in society on an equal basis with others.”

Why Use the ICF?

With its emphasis upon functional status, the ICF can provide more meaning beyond diagnosis alone about the actual experiences of persons with various health conditions. Consider the impact on the person who exhibits symptoms but cannot get treatment due to the lack of formalized diagnosis. For most insurance companies, a diagnosis is a requirement to access coverage for necessary health care, treatment, and social services. This is a drawback in using a diagnosis-based reimbursement system. On the contrary a system that takes into account functional status information would determine eligibility for services based on documented limitations in a person’s activities or restrictions in his/her participation. The impact on a person’s life is a more realistic gauge for generating benefit determination.

The ICF provides a mechanism to account for these situations that are becoming more and more common in clinical practice. Not only for social workers, but related health professionals experience issues where diagnosis is not possible or not substantiated; yet, the person must receive some immediate intervention, rehabilitation, or treatment. The biopsychosocial model of the ICF broadens the perspective of disability and allows the examination of individual, environmental, medical, and social influences on functioning and disability to be examined (Kozstansjek, 2011).

Assessment that is multi-dimensional including information about the person (medical and social histories) as well as the environments (home, work, school, and community) is reflected in the ICF. Although the ICF itself is not an assessment tool, there are instruments based on the ICF or cross-walked to the ICF. And the ICF allows for a description of functioning in clinical (standardized) and everyday (realistic) environments, which is extremely important for all persons with or without disabilities.

Furthermore, there is a need for reliable and comparable data on the health status of persons along with functioning and disability, which the ICF classification provides. The ICF provides a mechanism to collect disability data at national and international levels to better inform policy development. Not only must data collection be possible across various countries, but information must be collected and comparable across disciplines and population groups. The ICF conceptual framework has been recommended as the basis for measuring disability in the United Nations Statistics Division's publication, entitled "Guidelines and Principles for the Development of Disability Statistics" (United Nations, 2002). According to Jelsma (2009), the ICF has already made a major impact on the way in which data concerning disability are conceptualized, collected and processed.”

Conclusion

With its comprehensive system including the environment, the ICF provides a conceptual framework and classification for understanding both the causes and consequences of disability on the functioning of individuals. The nature of this information is extremely useful in developing appropriate mechanisms to reduce or alleviate barriers to functioning (Saleeby, 2011). For example, a comprehensive assessment based on the ICF can be used to identify key information about a person's life including his or her body functions and structures, activities and participation, and environmental barriers and facilitators. Information that is identified through the process can be used immediately to initiate intervention or treatment regardless of whether a formal diagnosis has been made by a relevant health professional. Therefore, the ICF as a comprehensive, integrated model holds great potential for promoting individual and social change (Howard, Nieuwenhuijsen, & Saleeby, 2008).

References

- Almborg, A.H., & Welmer, A-K. (2012). Use of the International Classification of Functioning, Disability and Health (ICF) in social services for elderly in Sweden. *Disability and Rehabilitation*, 34 (11), 959-964.
- American Speech-Language-Hearing Association (2015). *Person-centered focus on function*. Retrieved from <http://www.asha.org/slp/icf/>
- Bagnato, M.J., Abreu del Carmen, M.; Suárez, A., Durán, C. Falero, B., Bianchi, D., Luzardo, M., & Conti, P.P., (2011). Women with disabilities living in poverty: The case of Uruguay. *Review of Disability Studies: An International Journal*, 7(1), 6-18.
- Bickenbach, J. E. (2011). Monitoring the United Nation's Convention on the Rights of Persons with Disabilities: Data and the International Classification of Functioning, Disability and Health. *BMC Public Health*, 11(Suppl 4), S8, 1471-2458. doi:10.1186/1471-2458-11-S4-S8
- Bickenbach, J. E., Chatterji, S., Badley, E. M., & Ustun, T. B. (1999). Models of disablement, universalism, and the international classification of impairments, disabilities and handicaps. *Social Science and Medicine*, 48, 1173-1187.
- Centers for Disease Control and Prevention (2015, August). Disability and health. Retrieved from <http://www.healthypeople.gov/2020/topics-objectives/topic/disability-and-health>
- Cieza, A., & Stucki, G. (2008). The International Classification of Functioning, Disability and Health: Its development process and content validity. *European Journal of Physical and Rehabilitation Medicine*, 44, 303-313.
- Howard, D., Nieuwenhuijsen, E., & Saleeby, P. (2008). Health promotion and education:

- Application of the ICF in the US and Canada using an ecological approach. *Disability & Rehabilitation*, 30 (12-13), 942-954.
- Hurst, R., (2003). The international disability rights movement and the ICF. *Disability and Rehabilitation*, 25(11-12), 572-576.
- Institute of Medicine (1991). *Disability in America: Toward a National Agenda for Prevention*. Washington, DC: National Academy Press.
- Jelsma, J. (2009). Use of the International Classification of Functioning, Disability and Health: A literature survey. *Journal of Rehabilitation Medicine*, 41, 1-12.
- Kostanjsek, N. (2011). Use of The International Classification of Functioning, Disability and Health (ICF) as a conceptual framework and common language for disability statistics and health information systems. *BMC Public Health*, 11(Suppl 4): S3
- Lollar, D. (2002). Public health and disability: Emerging opportunities. *Public Health Reports*, 117, 131-136.
- National Center on Vital and Health Statistics (2003). *Classifying and reporting functional status*. Washington, DC: Department of Health and Human Services.
- Simeonsson, R., Leonardi, M., Lollar, D., Bjorck-Akesson, E., Hollenweger, J., & Martinuzzi, A. (2003). Applying the International Classification of Functioning, Disability and Health to measure childhood disability. *Disability and Rehabilitation*, 25 (11-12), 602-610.
- Threats, T. (2015). Communication disorders and the ICF. Retrieved from <http://www.asha.org/uploadedFiles/slp/AboutICFandCD.pdf>
- United Nations (2001). *Guidelines and Principles for the Development of Disability Statistics*. United Nations Publication, Sales No. E.01.XVII.15. New York: Author.
- Van Hove, G., De Schauwer, E., Mortier, K., Claes, L., De Munck, K., Verstichele, M., Vanderlinderen, C., Leyman, K., & Thienpondt, L., (2012). Supporting graduate students toward “A Pedagogy of Hope”: Resisting and redefining traditional notions of disability. *Review of Disability Studies: An International Journal*, 8(3), 45-54.
- Welch Saleeby, P. (2007). Applications of a Capability Approach to disability and the ICF in social work practice. *Journal of Social Work in Disability and Rehabilitation*, Volume 6 (1&2), 217-232.
- Welch Saleeby, P. (2011). Classifying and reporting functional status in social work settings using the International Classification of Functioning, Disability and Health. *Health and Social Work*, 36(4), 303-306.

World Health Organization (1980). *International Classification of Impairments, Disabilities and Handicaps (ICIDH)*. Geneva: World Health Organization.
 World Health Organization (2001). *International classification of functioning, disability and health*. Geneva: Author.

World Health Organization (2007). *International Classification of Functioning, Disability and Health - Children and Youth version (ICF-CY)*. Geneva: Author.

World Health Organization and World Bank (2011). *World Report on Disability*. Geneva: World Health Organization.

ICF CONCEPTUAL FRAMEWORK

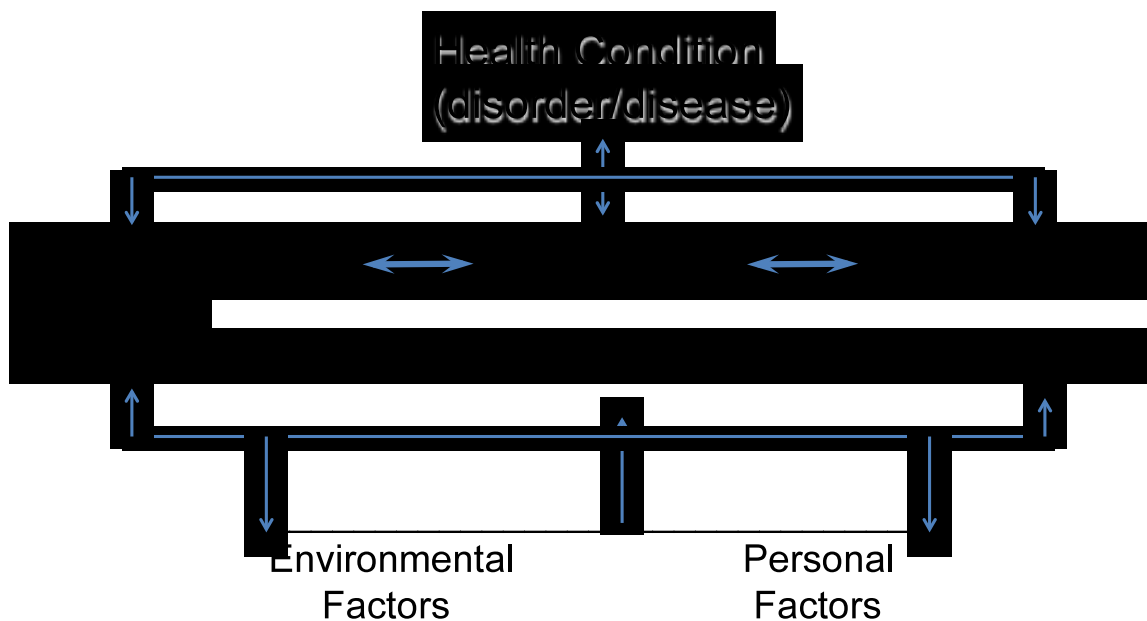


Figure 1. ICF Conceptual Framework (WHO, 2001)

Figure 1 The ICF Conceptual Framework Health Condition; Body Function/Structure; Activities; Participation; Environmental & Personal Factors

Table 1. ICF Body Functions and Structures

Mental Functions	Structures of the Nervous System
Sensory Functions and Pain	The Eye, Ear and Related Structures
Voice and Speech Functions	Structures involved in Voice and Speech
Functions of the Cardiovascular, Haematological, Immunological and Respiratory Systems	Structure of the Cardiovascular, Immunological and Respiratory Systems
Functions of the Digestive, Metabolic, Endocrine Systems	Structures Related to the Digestive, Metabolic and Endocrine Systems
Genitourinary and Reproductive Functions	Structure Related to Genitourinary and Reproductive Systems
Neuromusculoskeletal and Movement-Related Functions	Structures Related to Movement
Functions of the Skin and Related Structures	Skin and Related Structures

Summary of Table 1 entitled *Body Functions and Structures*. This table has two columns. The column on the left in descending order reads: Mental functions; sensory functions and pain; voice and speech functions; functions of the cardiovascular, hematological, immunological and respiratory systems; functions of the digestive, metabolic, endocrine systems; genitourinary and reproductive functions; neuromusculoskeletal and movement-related functions; functions of the skin and related structures. The column on the right lists: structures of the nervous system, the eye, ear, and related structures; structures involved in voice and speech; structure of the cardiovascular immunological and respiratory systems; structures related to the digestive metabolic and endocrine systems; structure related to genitourinary and reproductive systems; structures related to movement; skin and related structures.