Use of the International Classification of Functioning, Disability and Health for elderly care

A utilização da Classificação Internacional de Funcionalidade, Incapacidade e Saúde no cuidado aos idosos

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Abstract

The objective of this study was to identify the scientific production on the International Classification of Functioning, Disability and Health (ICF) and consider the possibilities for its use in elderly care. Methodology: literature review using the keywords/expressions: “Classificação Internacional de Funcionalidade, Incapacidade e Saúde” (International Classification of Functioning, Disability and Health), “Idoso” (Elderly) and “Cuidados de Enfermagem” (Nursing Care) in the Latin American and Caribbean Literature on Health Sciences, Nursing Database and Scientific Electronic Library Online databases. Relevance to the topic under study and date of publication were the selection criteria used. The International Classification of Functioning, Disability and Health may be an important tool in nursing care for older people because its biopsychosocial model allows its use in various ways, such as through its core sets, its biopsychosocial focus on capacity, and its possibilities for comparison with other instruments. It may be used as a main instrument, using all or some of its components, and as a basic tool for research or intervention in a variety of health conditions. The study and appropriate use of the ICF provide new insights regarding health and may guide public policies, and contribute to the development of nursing, health, individual, collective, environmental and especially gerontotechnological interventions.

Keywords: ICF; elderly; nursing care; nursing.

Resumo

Este estudo possui o objetivo de conhecer a produção científica sobre a Classificação Internacional de Funcionalidade, Incapacidade e Saúde (CIF) e refletir sobre as possibilidades de sua utilização no cuidado ao idoso. Metodologia: revisão bibliográfica, utilizando as palavras/expressões-chave: Classificação Internacional de Funcionalidade, Incapacidade e Saúde; Idoso e Cuidados de Enfermagem nas bases de dados Literatura Latino Americana do Caribe em Ciências da Saúde, Base de Dados Enfermagem e Ciência; Eletrônica: Library Online, tendo como critérios de seleção a pertinência com o tema estudado e data de publicação. A Classificação Internacional de Funcionalidade, Incapacidade e Saúde pode ser um instrumento relevante no cuidado de enfermagem aos idosos devido ao seu modelo biopsicosocial permitir a sua utilização de diversas formas, tais como através dos seus componentes, e como instrumento base para pesquisa ou intervenção nas mais variadas condições de saúde. O estudo e uso adequado da CIF poderia nos trazer novas luzes em relação à saúde e pode nortear políticas públicas, contribuir na elaboração de ações de enfermagem, saúde, individuais, coletivas, ambientais e principalmente gerontotecnológicas.

Palavras-chave: CIF; idoso; cuidados de enfermagem; enfermagem.

Resumen

Este estudio ha tenido como objetivo conocer la literatura científica sobre la Clasificación Internacional del Funcionamiento, de la Discapacidad y de la Salud y reflexionar sobre la posibilidad de utilizarla en la atención a las personas mayores. Metodología: revisión de la literatura, usando las palabras / expresiones clave: Clasificación Internacional del Funcionamiento, de la Discapacidad y de la Salud, de la Salud, ancianos y atención de enfermería en las bases de datos Literatura Latinoamericana y del Caribe en Ciencias de la Salud, Base de Dados Enfermagem e Ciência; Eletrônica Library Online y, como criterios de selección, la relevancia del tema estudiado y la fecha de publicación. La Clasificación Internacional del Funcionamiento, de la Discapacidad y de la Salud puede ser una herramienta importante en el cuidado de las personas mayores debido a que su modelo biopsicosocial permite que pueda utilizarse de diversas maneras, como a través de su base fija, de su propuesta biopsicosocial centrada en su capacidad y posibilidad de comparación con otros instrumentos como instrumento principal, utilizando todos o algunos de sus componentes y como una herramienta para la investigación básica o intervención en una variedad de condiciones de salud. El estudio y el uso adecuado de la CIF proporcionan nuevos conocimientos sobre la salud y pueden orientar la política pública, contribuir al desarrollo de las acciones de enfermería, salud, individuales, colectivas, ambientales y en especial de las relacionadas con la gerontotecnología.

Palabras clave: CIF; anciano; atención de enfermería; enfermería.
Introduction

Given the increase of the elderly population worldwide, many research studies in the areas of Gerontology and Geriatrics are being conducted. According to the definition of the United Nations (UN), older people are individuals aged over 65 years who live in developed countries and individuals over 60 years who live in developing countries. Population ageing is a consolidated phenomenon in developed countries which has extended to developing countries. In 2009, according to the National Household Sample Survey (Pesquisa Nacional por Amostra de Domicílios - PNAD), there were approximately 21 million people aged 60 years or more in Brazil, representing a total of 11.3% of the general population. In addition to this, according to the Brazilian Institute of Geography and Statistics (IBGE), the fertility rate was below the population replacement level (Instituto Brasileiro de Geografia e Estatística. Diretoria de Pesquisas. Coordenacao de População e Indicadores Sociais, 2010).

Population ageing turns the elderly's health into an important focus of care. Among the changes that occur during this process, reference should be made to physiological changes, such as changes in physical appearance and functional decline, which require adaptation from individuals to preserve their health status. Elderly people’s well-being, as in all age groups, depends on physical, mental, social and environmental factors, among others. Thus, the biopsychosocial model proposed by the International Classification of Functioning, Disability and Health (WHO) may be used to support elderly care.

The ICF, which was developed by the World Health Organization (WHO), takes into account all physical, mental, social and environmental factors, among others. Thus, the biopsychosocial model proposed by the International Classification of Functioning, Disability and Health (ICF) may be used to support elderly care. The ICF, which was developed by the World Health Organization (WHO), takes into account all physical, mental, social and environmental factors, thus being appropriate to guide nursing and health care planning for all age groups, especially the elderly. It consists of a classification of human functioning and disability which systematically groups health-related domains (Organização Mundial de Saúde, 2004). Given this perspective, functional assessment is becoming an essential resource in Gerontology and Geriatrics, as it represents a reference for the definition of strategies and provision of health care (Araújo & Santos, 2012).

The ICF was created to meet the needs that were not covered by the ICD-10, such as the consequences of diseases. The experimental version was published in 1980, under the name of International Classification of Impairments, Disabilities and Handicaps. However, this designation did not fully meet the purpose of the classification. Thus, in 2001, following the revision of its content, it became known as the International Classification of Functioning, Disability and Health (Di Nubila & Buchalla, 2008).

The ICF does not classify people. Rather, it allows for a description of the individual’s characteristics in different areas and the characteristics of the physical and social environment, selecting a group of codes that describes the functioning and participation profile (Fontes, Fernandes, & Botelho, 2010). This classification focuses on people’s capacity, comprising biological, psychological and social factors, and not only on disability-related issues.

Given the possibility of using the ICF to support elderly care, this study aimed to identify the scientific production on the International Classification of Functioning, Disability and Health and determine the possibilities for its use in elderly care.

Methodology

In order to identify the scientific production on the International Classification of Functioning, Disability and Health and the possibilities for its use in elderly care, a search was carried out using the keywords/expressions: CIF (ICF), “Idoso” (Elderly), “Cuidados de Enfermagem” (Nursing Care), “Enfermagem” (Nursing) in the Latin American and Caribbean Literature on Health Sciences (LILACS), Nursing Database (BDENF) and Scientific Electronic Library Online (SciELO) databases. The selection criteria used consisted of the article’s relevance and methodology, as well as the most recent date of publication.

Literature Review

An overview of the ICF

The ICF was designed in 2001 by the World Health Organization to establish a means of communication among health professionals, using a unified and standardised language to identify the impact of diseases, as well as the physical and mental structural changes on the daily life of individuals and population groups (Maeno, Takahashi, & Lima, 2009).
The ICF emerged from the need to cover issues that were not addressed by the International Classification of Diseases (ICD), such as the consequences of diseases. The ICF belongs to the Family of Classifications, which resulted from the perception that a single classification of diseases would not be sufficient to cover all health-related issues (Di Nubila & Buchalla, 2008).

The ICF is divided into two parts, each of them with two components. The first part relates to Function and Disability, and is divided into Body Functions and Structures, and Activities and Participation. The second part covers the Contextual Factors, which are divided into Environmental Factors and Personal Factors (Di Nubila & Buchalla, 2008).

Each component can be described positively or negatively. Positive and negative health aspects are grouped under the terms functionality and disability, respectively. Each component acts and suffers from the action of the others. These interactions are specific, but they are not always predictable and linear. (Campos, Rodrigues, Farias, Ribeiro, & Melo 2012; Fontes, Fernandes, & Botelho, 2010; Lima, Viegas, Paula, Silva, & Sampaio, 2010; Sampaio & Luz, 2009).

Table 1 presents an overview of these concepts:

Table 1 — Overview of the ICF concepts

<table>
<thead>
<tr>
<th>Components</th>
<th>Part 1: Functioning and Disability</th>
<th>Part 2: Contextual Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Domains</strong></td>
<td>Body Functions and Structures</td>
<td>Environmental Factors</td>
</tr>
<tr>
<td></td>
<td>Body Functions</td>
<td>Life Areas (tasks, actions)</td>
</tr>
<tr>
<td></td>
<td>Body Structures</td>
<td></td>
</tr>
<tr>
<td><strong>Constructs</strong></td>
<td>Change in body functions (physiological)</td>
<td>Capacity/ Executing tasks in a standard environment</td>
</tr>
<tr>
<td></td>
<td>Change in body structures (anatomical)</td>
<td>Performance/ Executing tasks in the current environment</td>
</tr>
<tr>
<td><strong>Positive aspect</strong></td>
<td>Functional and structural integrity</td>
<td>Activities Participation</td>
</tr>
<tr>
<td></td>
<td>Functioning</td>
<td></td>
</tr>
<tr>
<td><strong>Negative aspects</strong></td>
<td>Impairment</td>
<td>Activity limitation Participation restriction</td>
</tr>
<tr>
<td></td>
<td>Disability</td>
<td></td>
</tr>
</tbody>
</table>


The ICF proposes a model of functioning and disability centred on the human daily activity in the real world, changing the focus from disability to functioning, from the context of impairment and that which cannot be accomplished to a perspective of health and possibilities. This is based upon accepting the difference and intervention not only in the patient and the disease, but also the sociocultural patient-context interaction (Maeno et al., 2009; Diniz, Medeiros, & Squinca, 2007).

Since its publication as an experimental version, in 1980, the ICF has been used as a statistical, research and clinical tool oriented towards specific conditions. People have mistakenly believed that the ICF refers only to people with disabilities; however, it refers to all people. The health and health-related states associated with all health conditions can be described using the ICF.

The ICF provides a scientific basis for understanding and studying health determinants, outcomes and health-related conditions; establishes a common language among professionals; permits comparison of data across countries, health care disciplines, services, and time; and it provides a coding scheme for health information systems (Sampaio & Luz, 2009).

The ICF model should be analysed in its social, political and cultural dimensions, thus representing a challenge for all. That is to explore its acceptability, validity and impact on all systems, and particularly explore the potential to redesign more inclusive and equitable policies (Fontes et al., 2010).
The possibilities offered by the ICF result from the interaction of its components. Therefore, it is extremely important that the ICF categories are related to each other by the components, thus corroborating the basic biopsychosocial model of health (Campos et al., 2012). Figure 1 shows this interaction.

![FIGURE 1 – Interactions between the components of the ICF Source: OMS, CIF, 2004.](image)

**ICF: uses and perspectives**

The biopsychosocial model of health proposed by the ICF can be implemented through the practice and participation of different professional areas to strengthen and identify the best possible way to use this complex classification. A strategy to extend the use of the ICF consisted of the design of core sets, which represent the selection of essential items to describe and qualify the search for specific health situations (Maeno et al., 2009). A core set is a list of the ICF categories which includes the fewest possible items for practicality’s sake but enough to be sufficiently comprehensible and effective for a multidisciplinary investigation of a series of patient function problems (Campos et al., 2012).

The ICF core set for low back pain was empirically validated in 29 individuals with nonspecific chronic mechanical low back pain, and 64 ICF categories were considered to be representative. This core set is valid because it demonstrates the whole range of problems that patients with low back pain face (Riberto, Chiappetta, Lopes, & Battistella, 2011). Impairments were found in all the body structures listed in the core set, which confirmed the importance of these categories for the functioning of people with low back pain. In turn, the component Activities and Participation added something new to the assessment of patients’ functioning given that aspects related to daily and professional lives, relationships and the involvement in rehabilitation situations were identified. The roles played by environmental factors in modulating the patients’ functioning were also described (Riberto et al., 2011).

Designing core sets for major health problems in the elderly, such as falls, may be one way to use the ICF as it allows identifying a series of difficulties that these individuals face and the potential for prevention, as well as identifying possibilities for nurses’ interventions.

In a different study, a connection was established between the King’s Health Questionnaire (KHQ) and the ICF to assess patients with urinary incontinence following gynaecologic oncology surgery. Twelve categories were obtained for body functions, none for body structures, twenty-two for physical activities and four for environmental factors, in a total of thirty-eight categories. The authors observed that seven relevant concepts of the questionnaire could not be linked to the ICF given that two were not definable in general health, two in mental health, one in activities and participation, one in personal factors, whereas one was not covered by the ICF (Castaneda & Plácido, 2010). The KHQ offers a basis for therapeutic actions and highlights everyday limitations of social participation, that is, it focuses on issues related to activities and participation, but slightly addresses environmental factors. Therefore, the ICF is considered to be an appropriate tool to classify and measure the various indicators of urinary incontinence as it allows...
knowing the patient through a single document that goes beyond the results obtained using the biomedical model, covering daily life information, social participation and environmental factors. All of these are highly relevant to patients presenting urinary incontinence following gynaecologic oncology surgery (Castaneda & Plácido, 2010).

Establishing a connection between the ICF and instruments which are already used by nurses in elderly care, such as the Katz Basic Activities of Daily Living Scale that measures functional capacity through standardised instruments used to assess the elderly’s performance in Activities of Daily Living, would be useful to assess the component Activities and Participation. On the contrary, the Mini Mental State Examination (MMSE), which is an instrument that assesses orientation, memory, language and gnosis, praxis, executive function and visual-spatial function, may represent an important ally when addressing the component Body Functions in the elderly.

Zarante, Franco, López, and Fernández (2010) used information from a database and assessed congenital malformations according to their level of severity and the use of prognosis-modifying treatments. The scale was based on the ICF and was proposed by an Institute of Human Genetics in Colombia, the country of origin of the study. According to the ICF, a malformation is an impairment of body structure which may not produce capacity limitations or performance problems.

A similar study was conducted on how to use the ICF, which focused on patients with spinal cord trauma resulting from road traffic accidents who applied for benefits on account of the injuries incurred. The ICF was used to define these patients’ degree of disability (Brito, 2011). Disability is characterised as the result of a complex relationship between an individual’s health condition, the personal factors and the external factors that represent the circumstances in which the individual lives. Thus, different environments may impact differently on an individual with a given health condition (Organização Mundial de Saúde, 2004).

In order to promote the health and autonomy of patients with neurological lesion spastic sequel, the study of Machado and Figueiredo (2009) proposed a fixed support cover-hands prototype based on assistive technology to assist in the mobilisation and transfer of patients autonomously from their caregivers (from bed to wheelchair and wheelchair to bed). The authors point out the importance of drawing up strategies centred on the ICF components of body structures, activities and participation, and environmental factors to bring about patients’ potential personal factors and the appropriate intervention of home caregivers.

Additionally, considering people’s need for autonomy, cases of tetraplegic men were analysed. ICF aspects were identified in their speeches which could be applied to caring for these individuals to reduce dependence from their caregivers in all activities of daily living (ADLs). The major limitation identified concerned the activities and participation domain due to the impairment of body functions (Machado & Scramin, 2010). The ICF is highlighted as a health care planning tool due to its comprehensiveness. When health care is planned as a whole, based on ICF domains, it allows for the recovery of patients’ autonomy, as this occurs through small functional gains accomplished on a daily basis.

The ICF in elderly care

The ICF is an extremely relevant instrument in elderly care since it allows the health team to assess the older person as a whole. The ICF takes into account his/her capacities and limitations and is based on a common language that is shared by different areas of knowledge. It also enables the implementation of interdisciplinary care to encompass the needs and adaptation of the elderly person to the living conditions imposed by age.

Campos et al. (2012) compared instruments of sleep, cognition and function assessment [Pittsburgh Sleep Quality Index (PSQI), Mini Mental State Examination (MMSE) and Barthel Index (BI)] of stroke patients with the ICF core set for patients with the same pathology to standardise rehabilitation diagnoses, among other things. The comparison allowed concluding that Environmental Factors play an important role in the functioning of stroke patients, both as facilitators and barriers, and need to be carefully assessed. Special attention should also be given to personal factors as
they may deal with strategies that aim at changing the environment. Personal factors are the particular background of an individual’s life and living, and comprise features of the individual that are not part of a health condition or health states. These factors may include gender, race, age, physical condition, lifestyle, habits, upbringing, coping styles, social background, education, profession, experience, overall behaviour pattern, character style and all other characteristics that may play a role in disability at any level. Personal factors are not classified in the ICF because of the large social and cultural variance associated with them, but which users may incorporate in their applications of the classification (Organização Mundial de Saúde, 2004).

Nickel et al. (2009) evaluated the occupational performance of individuals with Parkinson’s Disease (PD). The authors correlated data on these individuals’ occupational performance (obtained through the Canadian Occupational Performance Measure - COPM) with the ICF components. The authors observed that the performance problems obtained using the COPM were related to the component Activities and Participation of the ICF. The most substantial change related to the community, social and civic life, since the elderly under analysis complained about it, thus confirming it as an important form of occupation. The most compromised activities were: Community, Social and Civic Life; Mobility; Personal Care; Domestic Life; and Learning and Applying Knowledge. The health model proposed by the ICF, together with the application of the COPM, proved to be effective, thus allowing for a correlation between body functions and structures, environmental and personal factors, and difficulties in performing activities (Nickel et al., 2009).

It becomes essential to design and promote activities which strengthen the social reintegration of elderly people, helping them to improve their cognitive functions. To this end, joint efforts are needed from professionals in health and other areas who have a direct or indirect influence on the elderly’s health conditions. The ICF proposes a new paradigm of functioning and disability that can be used as a multidisciplinary care model (quispe Mendoza e Faro, 2009).

Faria, Saliba, Teixeira-Salmela, & Nadeau (2010) compared hemiparetic individuals with and without history of falls based on all ICF components, that is, body functions and structures (quadriceps muscle torque of the paretic side and geriatric depression scale), activity (gait speed) and participation (through the Nottingham health profile and stroke-specific quality of life scale). Similarities were found between hemiparetic individuals with and without history of falls within the domains of body functions and structures, and activities and participation, thus suggesting that the environmental contextual factors could act as potential differentiators.

Lima et al. (2010) analysed the existing interrelationships between the ICF domains, describing the functioning and disability process from the individual’s perspective. The authors found that social support facilitated the functioning process, minimized impairments and allowed the performance of a higher number of activities, in addition to promoting social participation. Therefore, it is evident that a given context, which represents a set of environmental factors, may interfere with the body functions and structures in a positive or negative way, thus contributing to functioning or disability. Hence, providing support and opportunities for the elderly to participate in social activities may help to keep active interactions and reduce the risk of falls. Environmental factors make up the physical, social and attitudinal environment in which people live and conduct their lives. These factors are external to the individual and may have a positive or negative effect on a person’s performance as a member of society, on that person’s capacity to perform actions or tasks and on their body function or structure (Organização Mundial de Saúde, 2004).

Environmental factors are classified in the ICF according to two different levels: the individual and societal levels. Individual environmental factors include the physical and material aspects of an individual’s immediate environment (e.g. home, workplace, school), as well as the direct contact with others, such as family, acquaintances, peers and strangers (Organização Mundial de Saúde, 2004). Societal factors include formal and informal social structures, services and overarching approaches or systems in the community or culture that have an impact on individuals. This level includes organizations and services related to the work environment, community activities, government agencies, communication and transport services, informal social networks, laws, regulations, rules, attitudes and ideologies. An
environmental factor may be a barrier either because of its presence or absence, and the consequences of these factors on the lives of individuals are varied and complex (Organização Mundial de Saúde, 2004).

Some environmental factors deserve special attention from nurses and other professionals involved in elderly care, for instance, products or substances for personal consumption, general products and technology for personal use in daily living and for employment, design, construction and building products and technology of buildings for public and private use, and health-related services, systems and policies. The impact of these factors, acting both as facilitators and barriers on the elderly’s health status, can prevent from or predispose an impairment or activity limitation to becoming a participation restriction (Quintana, 2013).

The biopsychosocial model of health proposed by the ICF is a relevant support for nursing care since a wide range of possible applications in elderly health emerges from the interaction between its components.

**Conclusion**

Nurses and other professionals involved in elderly care benefit from a wide range of possible uses of the ICF, namely through its core sets; the proposal for a biopsychosocial focus on capacity and possibilities; as a research guide; for comparison with other instruments or as a main instrument; using all or some of its components; and as a basic tool for conducting research with subjects diagnosed with certain diseases.

The ICF needs to be widely applied both in research and clinical practice. However, there is a lack of studies using it specifically in elderly nursing care. Nonetheless, the studies discussed in this literature review present many possibilities for future strategies that may be implemented in this population, while considering its specificities. The use of the ICF in clinical practice and research makes it possible to analyse all components involved in the functioning and human disability process, thus promoting comprehensive and patient-centred approaches.

This review enhances nurses and other health professionals’ knowledge on the ICF and its use in elderly care, since new possibilities for action may emerge from the discussion of relevant studies on this topic. In addition, the adequate use of the ICF provides new insights regarding health and may guide public policies and offer solutions for elderly health-related issues.

It is important to think about nursing care while addressing the ICF as a relevant instrument in view of its potential to contribute to the development of nursing, health, individual, collective, environmental and especially geronto-technological interventions. Based on the abovementioned considerations, this literature review is expected to contribute to research, education and outreach activities, particularly those directed to design strategies based on the ICF and aimed at the provision of nursing care to the elderly.

**References**


