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HEALTH INDICATORS ABOUT FUNCTIONING AND DISABILITY

Os indicadores de saúde sobre o funcionamento e a incapacidade

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Abstract

The International Classification of Functioning, Disability and Health was established in 2001 and has, as one of its objectives, to generate information about the functioning and disability on populations. However, the complexity of its structure hinders the application. Thus, some simplified models are being used. From the use of these models, this paper suggests that the ICF data can be analyzed according to statistical formulas already used in morbidity and mortality. Then, it was possible to develop seven functioning indicators that could be used in the diagnosis of situational feature of a region, a city, a state or a country.

Descriptors: functioning, disability, diagnosis.

Resumo

A Classificação Internacional de Funcionalidade, Incapacidade e Saúde foi criado em 2001 e tem como um de seus objetivos, para gerar informações sobre a funcionalidade e incapacidade nas populações. No entanto, a complexidade da sua estrutura dificulta a aplicação. Assim, alguns modelos simplificados estão a ser utilizados. A partir do uso desses modelos, o presente trabalho sugere que os dados da ICF podem ser analisados de acordo com as fórmulas estatísticas já utilizadas na morbidade e mortalidade. Em seguida, foi possível desenvolver sete indicadores funcionamento que poderiam ser usados no diagnóstico da característica situacional de uma região, uma cidade, um estado ou um país.

Descritores: funcionalidade, incapacidade, diagnóstico.

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Introduction

The creation of the International Classification of Functioning, Disability and Health (ICF) in 2001 had, as one of its main bases, the objective to control the situation of functioning and disability at populations, as a statistical tool. Such control may be able to drive health policy (WHO, 2003).

However, to be possible, it is necessary that professionals be able to use ICF safely and assertively. The establishment of an information system to analyze data coming from the ICF may be the lowest hurdle for control over the functionality and population inability (Francescutti, et al, 2009). The execution of other steps that precede the creation of this system is presented as the main barrier (Araujo, 2013).

The first step to be implemented, as the literature clearly indicates, is the insertion of the conceptual model of functioning and disability of WHO in professional practice, in political practice and academic practice. The multidimensional model does not deny the existence of a linear model, but the reverse is true. Currently, the training of health professionals institutions still teach the execution of the linear model for clinical practice and for determining the political and social guidelines. It is necessary, in principle, that the content of ICF be included in undergraduate and graduate.

Examples of the linear model are present in the clinical practice, as in the publication of "core sets" according diseases (Riberto, 2011). Even that contextual factors (Brasileiro, et al, 2009) are considered, the starting point in these cases remains certain disease and disabilities are still considered as consequences of diseases (Vall, et al, 2011). On the other hand, from a statistical standpoint, the "core sets" represent another difficulty because they lead the classifier using different ICF categories, according to the related disease. This makes it possible to compare data only from people with the same illnesses, preventing the comparison of the state of functionality of people with different diseases, making a possible incomplete information system.

The disclosure of the classification and the teaching of the WHO model of functioning shape, then the first step in the ICF become a statistic tool for generating information about functioning and disability (Krieger, 2001).

Secondly, another step to be implemented is the complexity of the classification. Many researchers have been developing ways to operationalize the instrument (Escorpizo, et al, 2005). The high complexity of classification is at the same time, something essential for generation of information consistently and complicating its use by demanding long time to the classifier (Rauch, et al, 2008).

This second barrier seems to be incompatible with the first. In principle, the resolution of giving up one of them could be a viable way. However, it is possible to facilitate the use of CIF strongly without disobeying a multidirectional model functionality. One way is the use of summaries with key categories for information systems, as well as presented in Annex 9 of the ICF itself (Cieza, et al, 2005).

To date, some other ways of using the ICF were proposed by authors from different countries, such as classifying only changed categories (WHO, 2003), creating summaries of CIF by disease, by area, by occupation, by objective, application through "CheckList" or through instruments of assessment (McDougall, et al, 2010). Despite the large number of publications on the ICF compared with other reference classification, the International Statistical Classification of Diseases and Related Health Problems (ICD), little is discussed about the use of this epidemiological classification. Whatever the most effective way to use the ICF, this must be compatible with the generation of statistical information on functionality (Francescutti, et al, 2011). But getting support of professionals who use the ICF and ensure the feasibility of the instrument is essential to success in using the tool.

The objective of this work was considering the use of tools that facilitate the use of the ICF, such as summaries with key categories for information systems, create health indicators related to human functioning. The state of human functioning, which can also be understood as a “stage of functional health”, when transformed into codes and indicators can give visibility to the needs and details that are not seen by the usual indicators of morbidity and mortality.

Methods

To create indicators of functionality based on the ICF codes, we got formulas commonly used in epidemiology for generation of indicators of morbidity and mortality (Campos, 1993). Assuming that the use of ICD generates data that can be statistically analyzed to generate indicators of morbidity and mortality, we considered that the use of ICF could generate treatable data statistically in order to create indicators of functioning and disability.

Results

After analysis of the context and following a few classic examples of Epidemiology, we suggest seven indicators:

- Prevalence of disability;
- Prevalence of disability / functionality under other conditions;
- Incidence of disability;
- Incidence of return to functionality after failure;
- Risk to disability;
- Chance for returning to functionality;
- Percentage of population with the "functional health stage" coded.

The tables below present the indicators using the ICF categories as examples:

Table 1 - Functioning indicators

(1) Prevalência de incapacidade

$$\frac{\text{d4.88}}{\text{total}} \times 100 = \text{prevalence}$$

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(2) Prevalência de incapacidade/funcionalidade segundo outras condições

$$\frac{\text{d4.88}}{\text{total}} \times 100 = \text{prevalence, getting e1+8}$$

$$\frac{\text{d4.88}}{\text{total}} \times 100 = \text{prevalence, getting e1+0}$$

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(3) Disability incidence

$$\frac{\text{d4.88}}{\text{time}} = \text{incidence}$$

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(4) Incidence of returning to functionallity after failure

$$\frac{\text{d4.08}}{\text{tempo}} = \text{densidade de incidência}$$

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(5) Risk to disability (use disability incidence - di)

$$R = 1 - \frac{1}{2{,}71^{\text{di.delta(t)}}} = \text{risk to disability}$$

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(6) Chance for returning to functionallity (use incidence of returning to funtionallity after failure - irfaf)

$$R = 1 - \frac{1}{2{,}71^{\text{irfaf.delta(t)}}} = \text{chance for returning to funtionallity}$$

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(7) Percentage of population with the "functional health stage" (fhs) coded

$$\frac{\text{People with the "fhs" coded}}{\text{Population}} \times 100 = \text{percentage of population with the "fhs" coded}$$

Discussion

The codes used in the formulas are just examples. Each indicator can be calculated separately, even considering that the same patient has several categories with a qualifier different from "0". The category used in the example (d4) means "mobility".

In these examples, the prevalence of disability calculation takes into account codes having a qualifier different from "0" and indicates some difficulty in performing the activity specified. It can be applied to the entire study population or according to the environmental factors involved. In the examples, there is "e1 + 8", which means "with products and technologies as facilitator" and "e1 + 0", which means "without products and technologies as facilitator". A sample of 3.000 people, with 300 to any identified failure, we can calculate the prevalence mode below:

300(dxxx.88) x 100 = 10%
3000

In the case of the Incidence of Disability, the calculation takes into account the monitoring of a particular group that initially has no functionality problem identified. When a change appears, we have a "case". If we follow a group of people and we have 25 cases of any functionality change, taking the sum of the follow-up results in 20.816 weeks, we can calculate the incidence density with the way down:

25 = 0.0012 dxxx.88 / week
20,816 weeks

The same formula can be used to calculate the impact of return to functioning. However, in this case, consider the treatment time after the occurrence of failure determined. So if we have 25 treatments finished over a period of time (sum of the duration of treatment for all patients in care) of 7.746 days, we have the following calculation:

25 = 0.0032 dxxx.00 / day
7746 days

From the moment that the incidence rates of disability and return to functionality are known, it is possible to calculate the risk of disability and the chance to return the functionality in a certain place for a certain population.

Using the examples above, the risk of failure would be 7% in that sample after 60 days, while the chances of return of functionality would be 18% after 60 days, as calculated below:

Risk = 1 - 1 = 0.07 or 7%

0,0012x60
2.71

Chance = 1 - 1 = 0.18 or 18%

0,0032x60

2.71

The use of 2x2 tables, considering the influence of the environment on the performance of activities, allow the use of other statistical tools, such as tests of homogeneity, confidence interval and standard deviation. When it is necessary to use samples, these features help to give visibility to potential outcomes in the whole population.

An information system can calculate and compare rates of recovery of the functionality of different services, and from that, knowing which there is a greater chance of high for a particular case.

A comparison of the "functional health stage" of the populations (Madans, et al, 2011) according to the presence of diseases and contextual factors may help us to determine actions about the environment so that we can improve the functionality and prevent disability.

The information system can collect data from different sources, not only in healthcare, but also through population surveys, through school forms or periodic examinations of workers (Viacava, 2002).

The last indicator refers to the proportion of people with the "functional health stage", whereas the objective is to classify the situation 100% of the population.

Conclusion

By ICF it is possible to create formulas that details presentation of the situation of functioning and disability in a population, irrespective of the proportion of people with illness or disability, as indicators of functionality covering the entire population of any location. We must consider the use of the formulas of existing indicators for knowledge of the state of morbidity and mortality.

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