

MHADIE Background Document on Disability Prevalence across different diseases and EU countries

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Introduction

MHADIE project (Measuring Health and Disability in Europe: supporting policy development) was funded by the European Commission's Sixth Framework Programme for the period 2004-2008. There were three project objectives:

- (a) to use the model in WHO's International Classification of Function, Disability and Health (ICF) as the structure for analyzing existing general population health surveys and education statistics data;
- (b) to show that the ICF model is adequate for describing and measuring patterns of disability in clinical samples of selected conditions in different countries cross-sectionally and over time as well as feasible and useful in clinical, rehabilitation and educational sectors;
- (c) to produce policy recommendations and guidelines concerning how the existing sources of data can be harmonised with the ICF model.

The rationale for this project was the pressing need to have a common representation of disability across EU countries [1]. In fact, the situation in the early decade of 2000 was very fragmented: countries defined disability (and therefore reported data on disability) in different ways and for different purposes. Some countries defined disability in terms of performance levels in employment or other social activities while others defined it exclusively in medical or rehabilitative terms. In the employment sector specifically, coordinated policy across Europe has been undermined by the inability to collect comparable data about rates of disability and employment.

The proposal of MHADIE consortium was to use the ICF Classification as the reference to describe disability according to a biopsychosocial model: disability is the result of the complex interaction between the person with a health condition, and the environment in which he or she lives [2,3].

According to this background, and with the aim of capturing the complex effect of environmental factors as well as to understand the impact of disability in a population, the impact of the health component must be understood independently of the environmental component. In ICF terms, this means to measure the difference between performance (i.e. what the person is actually able to do in his or her current environment) and capacity (i.e. what the person could do as the result of his or her intrinsic ability).

The aim of this document is to describe briefly the different impact of the environment, and therefore the different degree of limitations in activities and restrictions to participation, across selected health conditions and in different countries.

Methods

A cross-sectional survey was conducted in five countries (Italy, Spain, Czech Republic, Germany and Slovenia) and in different settings: primary care, rehabilitation, research centres. For each disease, specific selection criteria were set. Enrolled patients had a diagnosis of migraine, Parkinson's disease, multiple sclerosis, traumatic brain injury, stroke, bipolar disorder, depression, osteoporosis, low back pain, other musculoskeletal conditions (including chronic widespread pain, rheumatoid arthritis and osteoarthritis).

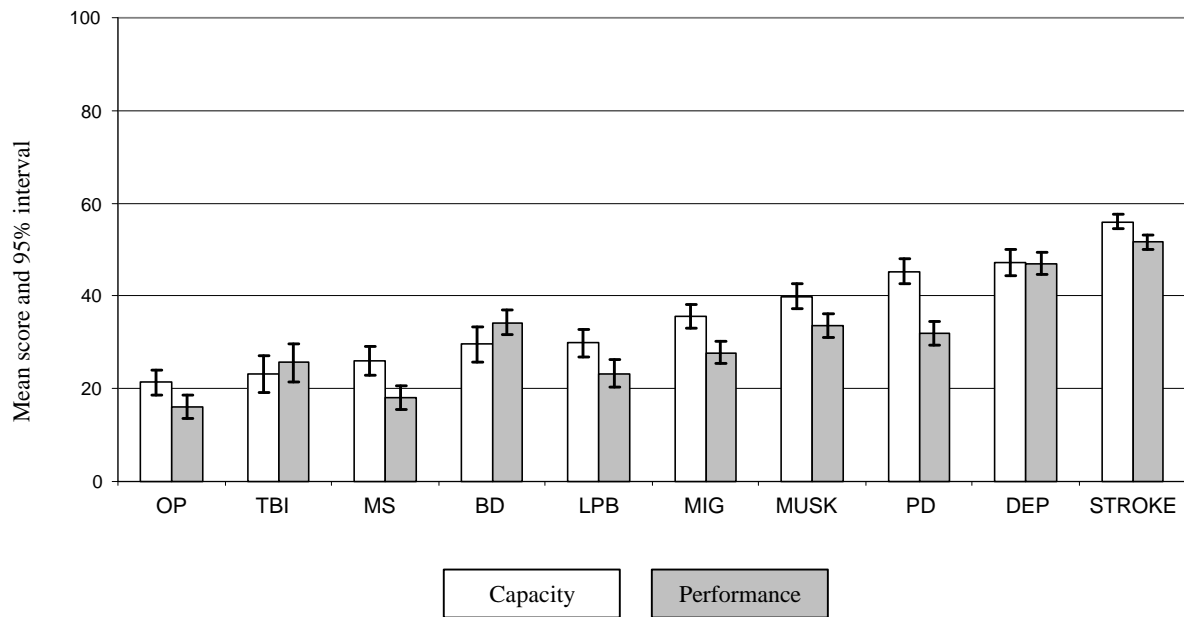
An ICF-based protocol, in which the ICF checklist [4] was used as a common minimum data set, was implemented in each centre and for each health condition, in addition to disease-specific measures. Enrolled patients were adults with a diagnosis corresponding to those under examination, which were able to undergo an individual interview and to sign a research-specific informed consent form. The WHO-DAS II [5] was also employed.

Data were analysed using a descriptive approach to represent aggregated ICF-based data for the whole Activity and Participation (A&P) dimension. Data were reported using a 0-100 score, in which higher scores represent higher problems' prevalence. Spearman's RHO correlations between WHO-DAS II score and A&P Performance scores were also performed.

Results

Data were collected on 1200 individuals, representing 12 diagnoses, across 5 European countries. Prevalence of problems in performance and in capacity is reported in Figure 1. The *Capacity* scores were worst in patients with stroke, depression, and Parkinson's, while individuals with osteoporosis had the least limitation. In general, *Performance* scores were better than *Capacity* scores, except for individuals with bipolar disorder or traumatic brain injury (TBI).

Figure 1: Prevalence of problems in performance and capacity in selected health conditions



Notes: MIG-migraine, PD-Parkinson's disease, MS-multiple sclerosis, TBI-traumatic brain injury, stroke, BD-bipolar disorder, DEP-depression, OP-osteoporosis, LBP-low back pain, MUSK-other musculoskeletal conditions

Correlations between the WHO-DAS II and ICF-based scores are reported in Table 1. High correlation scores are observed for the majority of health conditions: the overall RHO score was 0.693 (P -value <0.01).

Table 1: Spearman's RHO Correlation between WHO-DAS II and A&P Performance index

Disease	RHO Correlation
Bipolar Disorder	0,879**
Depression	0,721**
Migraine	0,721**
Multiple Sclerosis	0,617**
Other musculoskeletal	0,755**
Parkinson's Disease	NS
Stroke	0,261*
Traumatic Brain Injury	0,714**

* P -value <0.05 ; ** P -value <0.01 ; NS, not significant

Discussion

The application of the ICF model was useful to detect the different impact that health conditions, in interaction with environmental factors, have on persons' functioning and disability levels across

countries. The differences observed in the health conditions' performance and capacity scores are therefore due, not merely to the severity and clinical features of each disease, but also to the effectiveness on different environmental factors: treatments, assistive devices, persons that provide help and assistance, health, labour and social practices and policies.

A wide description of disability such as this, would only be achieved by means of a survey in which several components were taken into account, not merely, as often happens now, by means of surveys that only involve a small set of impairment questions. Purely impairment surveys yield unreliable and invalid disability prevalence estimates that distort policy planning and measurement of the change in functioning produced by interventions. The decrements observed in performance are the effect of both the intrinsic health state (i.e. the capacity score) and the effect of the environment (i.e. the gap between capacity and performance): combining and merging these dimensions assists policy makers in planning appropriate interventions that can fill gaps between capacity and performance, and not relying on *a priori* categories (e.g. blind, deaf or wheelchair users).

Moreover, such an approach was valid in across countries, health conditions and ages: this last factor is a important since ageing is one of the most important factor associated with declines in functioning and is the driving force for projections of magnitude of disability. Finally, since uch of the burden and cost of disease is due to reduced work productivity, the ICF should be used for understanding the nature of the impact of a health condition on the life of a person in domains such as work and the essential determinant of employment, namely education..

Conclusions

MHADIE Project's results allow a broad understanding of how the biopsychosocial model of disability that underlies the ICF could help to monitor disability prevalence from a more realistic, broader perspective, as it makes it feasible to collect data that takes into account not only morbidity but more importantlz the result of the interaction between a health condition and the environment. Beyond this, MHADIE data are demonstrating that an ICF approach to data collection is both valid and reliable enough to be applied to a Europe-wide perspective, beyond aetiology, age and gender.

References

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