Functioning assessment versus conventional medical assessment: a comparative study on health professionals’ clinical decision-making and the fit with patient’s own perspective of health

Hillegonda A. Stallinga
Petrie F. Roodbol
Coby H. Annema
Gerard J. Jansen
Klaske Wynia

Journal of Clinical Nursing 2013; 23(7-8): 1044-1054
Abstract

**Aims and objectives:** To compare a functioning assessment based on the International Classification of Functioning, Disability and Health (ICF) with a conventional medical assessment, in terms of their respective consequences for health professionals’ clinical decision-making and on the fit with patient’s own perspective of health.

**Background:** In chronic diseases, pathogenic-oriented health care falls short in generating all the information required for determining health care provision to improve health. A broader, so-called salutogenic approach, by using the ICF, focussing on how to stay healthy, rather than what causes diseases, seems more appropriate.

Design: A cross-sectional comparative study using data from a randomised controlled trial.

**Method:** Data about patient problems and professional health care activities were collected from a total of 81 patients with severe multiple sclerosis who were randomly assigned to one of two groups: the ICF group, assessed with a functioning assessment ($n = 43$), and the medical group, assessed with a conventional medical assessment ($n = 38$). Data were analyzed statistically using descriptive and inferential statistics.

**Results:** A functioning assessment resulted in registration of significantly more patient problems in the health components ‘participation’ and ‘environmental factors’, as well as significantly more professional health care activities befitting these components. The ICF group had a significant positive correlation between registered problems by health professionals and patients’ self-reported problems whereas the medical group had several negative correlations.

**Conclusion:** A functioning assessment resulted in a care plan which was not only broader and more complete but which also reflected the patients’ self-reported problems more closely than a medical assessment, without a loss of focus on medical problems.

**Relevance to clinical practice:** This study has shown that some health problems remain unnoticed by a medical assessment alone, which is especially important for the chronically ill. A functioning assessment provides a strong foundation for identifying all relevant information related to health.
5.1 Introduction

Historically, communicable, infectious diseases with a high mortality risk have been the main concern of our health care system. Consequently, the medical disease model with its pathogenic orientation has occupied centre stage in the health care system. Together with early medical diagnoses and improved medical technology, this model has resulted in great medical progress in many areas. But, on the other side, this model has also led to an increase of survivors and patients with non-communicable, chronic diseases such as cardiovascular diseases, neurological disorders, diabetes, and cancer.\(^1\)

With the pathogenic model came the definition of health as ‘a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity’.\(^2\) Despite the psychological and social dimensions of this definition, the requirement of a ‘state of complete well-being’ labels persons with chronic diseases and disability as definitively ill. Furthermore, this stringent definition would leave most of us unhealthy for most of the time.\(^3\) Although a disease or disability impacts one’s health, it does not define one’s health.\(^4\) This is why a new definition of health has recently been proposed: ‘health is the ability to adapt and self-manage in the face of social, physical, and emotional challenges’.\(^3\) In this broader, so-called salutogenic view of health, a strong emphasis lies on ‘ability’, which allows for a focus on how to stay healthy,\(^5\) rather than on what causes disease.

Following this concept of health, the central question for health care provision, especially for the chronically ill, can be formulated as follows: ‘How can this person become healthier, while at the same time he stays more or less ill’?\(^6\)\(^7\) A medical assessment that focuses solely on the biological medical aspects falls short in generating all the information required for determining health care provision;\(^8\) moreover, effective health care requires a good fit with patients own perspective of health.\(^4\)

While clinical practice is experiencing a shift from acute disease to chronic disease and the health opinion is broadening its scope to include ‘ability’, clinical practice is still using tools and skills based on the pathological medical model,\(^9\) focusing on diseases and disability.

To describe health, ability, and disability, the WHO has published the International Classification of Functioning, Disability and Health (ICF).\(^10\) The ICF represents the biopsychosocial model, which covers all aspects
of health and well-being operationalized in terms of human functioning in the health components ‘body functions and structures’, ‘activities’, and ‘participation’. Ability and disability are presented in a single spectrum as different manifestations of the same domains of functioning. The ICF complements the International Statistical Classification of Disease and Related Health Problems (ICD-10) which represents the medical model. A dynamic interaction takes place between functioning and disease, as well as between functioning and the ‘environmental factors’ and ‘personal factors’. Using both the medical status (ICD-10) and the status of functioning (ICF) can provide a more complete picture of the patients’ health status and a more solid base for determining individual treatment and health care provision.

Until now, few studies have focused on the added value of using tools and skills centred on the status of functioning. We have found one study that evaluated the use of information on the status of functioning in addition to medical information. They found that adding information on the status of functioning in the health components ‘activities’ and ‘participation’ resulted in a statistically significant difference in scores on assessed work limitations compared with medical information alone. Physicians who used a functioning assessment felt they possessed more relevant information than physicians who had access to only medical information. The results of Spanjer et al. are grounded on a laboratory situation, whereas the physicians’ assessments were based on written patient cases.

Our research is primarily motivated by the discrepancy between the current pathogenic-oriented health care tools and skills and a growing number of chronically ill patients for whom a broader and salutogenic approach seems more appropriate. A general assessment tool is needed in order to acknowledge the views, experiences, and perspectives of the patients themselves and all the multidisciplinary team members involved in the health care process. Due to its general terminology, the ICF can be used in determining health care provision in a multidisciplinary health care process. Concurrently, the ICF terminology also reflects discipline-specific terms relevant for discipline-specific health care in the subsequent phases of the health care process.

We conducted our study in order to explore a status of functioning tool as a general assessment tool. The purpose was to examine the differences between a functioning assessment (ICF) and a conventional
medical assessment in terms of their respective consequences for health professionals’ clinical decision-making and the fit with patient’s own perspective of health.

5.2 Methods

5.2.1 Study design
The current cross-sectional comparative study is a secondary analysis of data from a randomised controlled trial. The randomised controlled trial was conducted to examine the effects of a Dutch patient advocacy case management model compared with health care as usual applied to patients with severe multiple sclerosis (MS). The study protocol of the randomised controlled trial has been published. In the randomised controlled trial, patients were randomly assigned to one of two groups: experimental (in this study the ICF group) or control (in this study the medical group). Patients in the ICF group received case management from a nurse practitioner who used the ICF functioning assessment. Patients in the medical group received care as usual from a neurologist who used the conventional medical assessment. The current study focuses on a comparison between the two types of assessment based on health professionals’ clinical decision-making and on the fit with patient’s own perspective of health. Clinical decision-making is defined operationally as the number and kind of patient problems and professional health care activities registered in patient records by health professionals as a consequence of the assessment. Patient’s own perspective is defined as a severity score on the self-report functioning assessment tool completed by patients. The fit is expressed by the correlation between the frequency of the health problems registered by the health professionals and the severity score of the self-reported problems. In contrast to previous studies that used data based on laboratory research, we used data from a randomised controlled trial. Consequently, our results are grounded in actual clinical practice.

5.2.2 Participants and procedure
Patients with MS known to the MS Centre of a university hospital in the north of the Netherlands were invited to participate in the randomised controlled trial. The inclusion criteria for eligible patients were to be diagnosed with
severe MS, living independently in the community and at least 18 years old. To define the severity of the MS, the neurological classification system Expanded Disability Status Scale (EDSS) was used. The EDSS is a commonly used medical measure instrument for MS with a scoring scale ranging from 0 (no problem) to a maximum score of 10 (death due to MS). The severity of MS in this study was defined as having a score ranging from 4.5 to 8.5. A score of 4.5 indicates experiencing some mild neurological dysfunctions and being able to walk about 300 meters without aid or rest. A score of 8.5 indicates having severe neurological dysfunctions and being mostly restricted to a wheelchair. The EDSS score was assessed by the neurologist and registered in the patient’s medical record. All eligible patients with the diagnosis MS and a suitable EDSS score ($n = 227$) were invited to participate in the study. Informed consent to participate in the study was given by 102 patients with MS. Between respondents and nonrespondents, there were no differences in age ($t$-test $p$-value 0.332) and gender (chi-square test $p$-value 0.374).

After the inclusion criteria were checked, a total of 99 patients were included and randomly assigned to the ICF group or the medical group. To control for the characteristics of the participants, the following blocking variables were included in the randomization process: wheelchair dependency (yes/no), having a partner or caregiver (yes/no), educational level (low/middle/high level), having children living at home (yes/no), and performing paid work (yes/no). The computerized randomization program assigned 51 patients to the ICF group and 48 patients to the medical group. Sample size calculations were targeted on a relevant clinical change in quality of life, the primary outcome measure. If each research group would consist of 30 subjects, a power of 0.82 would be reached.

At the start of the study, both groups (the ICF group and the medical group) were asked to answer background questions and to complete the self-report functioning assessment. The background data are shown in Table 5.1. There were no significant statistical differences between patients in the ICF group and in the medical group; they all had similar background characteristics, similar disease related variables, and similar self-reported states of functioning (Table 5.2). During the study, patients in both groups were lost to follow-up for similar reasons (admission to a nursing home, death). Ultimately, 43 patients in the ICF group and 38 patients in the medical group completed the study and were included in the analysis.
See the flow diagram of the study in Figure 5.1.

Table 5.1 Background data of the patients.

<table>
<thead>
<tr>
<th>Variable</th>
<th>ICF</th>
<th>Medical</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>43</td>
<td>38</td>
<td>81</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female (%)</td>
<td>26 (61)</td>
<td>25 (66)</td>
<td>51 (63)</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean (SD)</td>
<td>54 (11.6)</td>
<td>57 (11.3)</td>
<td>56 (11.4)</td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married / in partnership (%)</td>
<td>35 (81)</td>
<td>29 (76)</td>
<td>64 (79)</td>
</tr>
<tr>
<td>Children</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes (%)</td>
<td>35 (81)</td>
<td>32 (84)</td>
<td>67 (83)</td>
</tr>
<tr>
<td>Mean (SD)</td>
<td>2 (1.3)</td>
<td>2 (1.1)</td>
<td>2 (1.2)</td>
</tr>
<tr>
<td>Educational level</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary school (%)</td>
<td>8 (19)</td>
<td>3 (8)</td>
<td>11 (14)</td>
</tr>
<tr>
<td>Secondary/vocational school (%)</td>
<td>22 (51)</td>
<td>20 (53)</td>
<td>42 (52)</td>
</tr>
<tr>
<td>High school/ University (%)</td>
<td>13 (30)</td>
<td>14 (37)</td>
<td>27 (33)</td>
</tr>
<tr>
<td>EDSS (scale: 0–10)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean (SD)</td>
<td>6.3 (1.4)</td>
<td>6.6 (1.3)</td>
<td>6.5 (1.3)</td>
</tr>
<tr>
<td>Years since MS diagnosis</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean (SD)</td>
<td>14.8 (6.9)</td>
<td>15.8 (8.1)</td>
<td>15.3 (7.5)</td>
</tr>
</tbody>
</table>

Table 5.2 Severity scores of the self-reported functioning assessment at the start of the study.

<table>
<thead>
<tr>
<th>ICF domains (MSIP scales) and -categories ordered in health components</th>
<th>ICF total patients $N = 43$ Median*(IQR)$^#$</th>
<th>Medical total patients $N = 38$ Median*(IQR)$^#$</th>
<th>$p$-value$^|^\dagger$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body Functions and structures</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Muscle and movement</td>
<td>35 31.25 (25)</td>
<td>31 37.50 (19)</td>
<td>.421</td>
</tr>
<tr>
<td>Excretion and reproduction</td>
<td>35 33.33 (33)</td>
<td>28 41.67 (35)</td>
<td>.277</td>
</tr>
<tr>
<td>Mental</td>
<td>32 25.00 (17)</td>
<td>33 25.00 (17)</td>
<td>.330</td>
</tr>
<tr>
<td>Speech</td>
<td>43 0.00 (25)</td>
<td>36 0.00 (25)</td>
<td>.742</td>
</tr>
<tr>
<td>Seeing</td>
<td>42 25.00 (25)</td>
<td>36 25.00 (50)</td>
<td>.791</td>
</tr>
<tr>
<td>Fatigue</td>
<td>42 50.00 (6)</td>
<td>37 50.00 (25)</td>
<td>.292</td>
</tr>
<tr>
<td>Pain</td>
<td>43 25.00 (25)</td>
<td>38 25.00 (50)</td>
<td>.727</td>
</tr>
<tr>
<td>Activities</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Basic movement</td>
<td>40 46.67 (38)</td>
<td>37 40.00 (53)</td>
<td>.553</td>
</tr>
<tr>
<td>Daily living</td>
<td>43 45.83 (37)</td>
<td>37 45.83 (52)</td>
<td>.824</td>
</tr>
<tr>
<td>Participation</td>
<td>42 25.00 (34)</td>
<td>36 25.00 (32)</td>
<td>.813</td>
</tr>
<tr>
<td>Environmental factors</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

*Severity score: score 0 = no problem; score 100 = very serious problems; ‡Inter Quartile Range; †Mann-Whitney U test. Note: Pending validation of the ‘environmental factors’ scale, this component was not yet included in the MSIP tool at the start of the study period. Therefore in this study we do not have data on the ‘environmental factors’ of the patients in the self-reported status of functioning.
During the study period of 15 months (between September 2006 and January 2008), the nurse practitioner used the filled-out functioning assessment in the ICF group. Patients in the ICF group were not consulted by the neurologist. The patients in the medical group were assessed with the conventional medical assessment by the neurologist. Patients in the medical group were not consulted by the nurse practitioner and the filled-out functioning assessment was not known to or used by the neurologist.

5.2.3 The functioning assessment

The status of functioning was assessed using the Multiple Sclerosis Impact
Profile (MSIP). The MSIP is a recently developed and validated self-report assessment tool based on an ICF Core Set for patients with MS. The internal consistency tests showed good levels of internal consistency with Cronbach’s alphas = 0.80/0.90 for most scales, and sufficient and weak Cronbach’s alphas for mental functioning (0.62/0.65) and the environmental factors (0.49/0.50). An ICF Core Set identifies the most typical and relevant ICF categories in the health components ‘body functions and structures’, ‘activities’, ‘participation’, and ‘environmental factors’ for patients with a specific disease or health condition. The MSIP consists of 36 ICF categories, distributed over seven scales and four single items. There are three scales in the health component ‘body functions and structures’ (muscle and movement functions, excretion, reproductive functions, and mental functions), two scales in the health component ‘activities’ (basic movement and daily living), one scale in the health component ‘participation’, and one scale in ‘environmental factors’. The four single items all belong to the health component ‘body functions and structures’ (speech functions, seeing functions, fatigue, and pain). Scoring options, which are discrete, range from 0 (no disability) to 3 or 4 (complete disability). These scores express the severity of the disability. For reasons of comparability, the scores are standardized by dividing the individual sum scores in each scale/single item by the maximum score of each scale/single item, and multiplying it by a hundred to obtain a result ranging from 0 to 100.

Patients in both groups filled out the self-report functioning assessment at the start of the study period. To determine the fit between the assessment and patient’s own perspective of health, the frequency of the health problems registered by health professionals were correlated with the severity scores of the self-reported problems. This is based on the assumption that the more severe the problems indicated by the patient himself, the higher will be the frequency of the registration of these problems by health professionals and vice versa. The functioning assessment was used in the ICF group, in which health problems and required health care was assessed by two nurse practitioners specialized in patients with MS. They were trained in using the functioning assessment and were also authorized to perform medical neurological examinations. Medical aspects of patients in the ICF group were discussed with the neurologists during the biweekly multidisciplinary consultation or in between these meetings when necessary. During the
15-month study period, the nurse practitioners consulted the patients at their homes three times: at the start, halfway through, and at the end. The nurse practitioners used the functioning assessment to identify the patients’ health problems and related professional health care activities required. These problems and professional health care activities were registered in the patient’s record.

In this study, the nurse practitioner was in the same professional position as the neurologist. This means that the nurse practitioner had the same authority as the neurologist to assess all the health problems and required professional health care activities for the patients with MS. Patients in the medical group were not consulted by the nurse practitioners, and patients in the ICF group were not consulted by the neurologists. In this way we minimized potential bias of the type of health care provider on the outcomes of the assessments.

5.2.4 The medical assessment
The medical assessment was used in the medical group, in which health problems and required professional health care activities as usual was assessed by two neurologists specialized in care for patients with MS. The medical assessment includes an examination of the functions of the body in general and the neurological functions in specific.

During the 15-month study period, patients in the medical group were consulted by their neurologist three times in the hospital. This is the usual frequency for these consultations at the Groningen MS Centre. The neurologist used the medical (neurological) assessment to identify the patients’ health problems and the related professional health care activities required. These problems and professional health care activities were registered in the patient’s record.

5.2.5 Classifying health problems and related professional health care activities
The MSIP scales/single items, categorized by the health components ‘body functions and structures’, ‘activities’, ‘participation’, and ‘environmental factors’, were used to classify the broad range of health problems registered in both groups, so as to make these data accessible for statistical analysis.
The class ‘other’ was added for classification of problems which did not belong to one of the mentioned MSIP scales/single items (e.g. nutritional problems or skin afflictions). Health problems were characterized as follows: they were either new (problem identified in a consultation), continuous (problem existed before the first consultation) or recurrent (problem identified in a previous consultation and still going on). The ‘recurrent’ problems were excluded from the analysis since they were already included in the classes of ‘new’ and ‘continuous’ problems.

The professional health care activities were summarized and classified into seven classes based on inductively developed general features of professional health care activities performed by both types of health professionals, the nurse practitioner and the neurologist. The following classes were distinguished: ‘giving information/advice’, ‘gathering information/consultation of professionals’, ‘medical referral’, ‘nonmedical referral’, ‘adjusting medication’, ‘arranging additional support/obtaining assisting products’, and ‘arranging temporary admission/day treatment’. The class ‘other’ was added to accommodate those activities that did not belong to one of the existing classes (for example professional health care activities such as monitoring or observing). Two researchers independently classified all registered problems and professional health care activities in the most appropriate class. These researchers were familiar with the health problems and professional health care activities associated with patients with MS. Differences of opinion between the researchers were resolved through discussion and if necessary, by referring to a third researcher. Data were analyzed at the end of the study period of 15 months.

5.2.6 Ethics
The randomised controlled trial was approved by the medical ethical committee of the hospital (Reference M06.040514) and was registered in the Dutch Trial Register. Trial ID: NTR 762.

5.2.7 Analysis
Data were analysed using PASW 18.0 for Windows (SPSS Inc., Chicago, IL, USA). First, descriptive statistics, such as frequencies, percentages, means, standard deviations, median, minimum, and maximum, were computed for background variables, categories, and scales. Second, inferential statistics
were used for several comparisons. The independent sample \( t \)-test was used to compare the continuous variables in the patient characteristics between the two groups and for the mean number of registered health problems and professional health care activities for each patient. The Pearson’s chi-square test and, where appropriate, the difference of proportions test\(^{26}\) were used for the nominal variables in the patient characteristics. The latter test was also used to compare the registered health problems and professional health care activities between the two groups. The Mann-Whitney \( U \)-test was used for group comparison in the self-reported status of functioning as the variables were not normally distributed. The correlation between the severity of the self-reported problems by patients and the frequency of the registered problems by health professionals was established by a Spearman’s coefficient. This coefficient is used to test the relationship between ordinal data or between numerical and ordinal data. It also takes on values from \(-1 \) to \(1\), ranging between negative correlation \((-1)\), uncorrelated \((0)\), and positive correlation \((1)\); \(p\)-values of \(≤ 0.05\) were considered statistically significant.

5.3 Results

5.3.1 Registered health problems

The mean number of registered health problems per patient was significantly higher in the ICF group: 6.8 SD 4.2 versus 3.2 SD 2.7 for patients with MS in the medical group; \(p\)-value \(< 0.001\).

Within both groups most of the registered health problems were listed in the health component ‘body functions and structures’ (65% in the medical group versus 55% in the ICF group) (Table 5.3). The number of health problems in the health component ‘body functions and structures’ did not differ significantly between the two groups.

A comparison of the proportions of the problems registered by the health professionals in the two groups shows that in the ICF group significantly more problems were found in the health components ‘participation’ (10% versus 3% in the medical group) and ‘environmental factors’ (19% versus 6% in the medical group). Participation problems included social isolation and difficulties with preserving jobs and relationships. Problems with respect to the ‘environmental factors’ were, for example, inadequate or lack of domestic help or adjustments in the patient’s home.
5.3.2 Registered professional health care activities

Again, the mean number of registered professional health care activities per patient was significantly higher in the ICF group: 5.1 SD 4.3 versus 2.2 SD 2.9 for patients with MS in the medical group; \( p \)-value < 0.001(Table 5.4).

### Table 5.4 Frequency registered professional health care activities at the end of the study.

<table>
<thead>
<tr>
<th>Classes</th>
<th>ICF ( N = 43 )</th>
<th>Medical ( N = 38 )</th>
<th>95% CI*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Giving information/advice</td>
<td>( n^i ) (%)</td>
<td>( n^i ) (%)</td>
<td></td>
</tr>
<tr>
<td>Gathering information/ consultation of</td>
<td>54 (25)</td>
<td>10 (12)</td>
<td>2.04 to 21.44</td>
</tr>
<tr>
<td>professionals</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medical referral</td>
<td>57 (26)</td>
<td>1 (1)</td>
<td>16.62 to 31.51</td>
</tr>
<tr>
<td>Non-medical referral</td>
<td>11 (5)</td>
<td>20 (24)</td>
<td>9.50 to 29.79</td>
</tr>
<tr>
<td>Adjusting medication</td>
<td>24 (11)</td>
<td>7 (8)</td>
<td>-6.70 to 9.57</td>
</tr>
<tr>
<td>Arranging additional support/ obtaining</td>
<td>16 (7)</td>
<td>27 (32)</td>
<td>14.25 to 36.38</td>
</tr>
<tr>
<td>assisting products</td>
<td>40 (18)</td>
<td>6 (7)</td>
<td>1.60 to 18.47</td>
</tr>
<tr>
<td>Arranging temporary admission/day treatment</td>
<td>7 (3)</td>
<td>7 (8)</td>
<td>-0.72 to 13.94</td>
</tr>
<tr>
<td>Other</td>
<td>9 (4)</td>
<td>6 (7)</td>
<td>-2.67 to 11.60</td>
</tr>
</tbody>
</table>

Total professional health care activities \( 218 \) (100) \( 84 \) (100)

\( N = \) number of respondents; \( n = \) total number of professional health care activities of all patients together; *difference of proportions test.
In the ICF group most professional health care activities were registered in the classes ‘gathering information/consultation of professionals’ (26% versus 1% in the medical group), ‘giving information/advice’ (25% versus 12% in the medical group), and ‘arranging additional support/obtaining assisting products’ (18% versus 7% in the medical group). A comparison of the proportions of the registered professional health care activities in the two groups shows that the differences in these classes were significant. Professionals consulted included the social security services to provide income support or the health services to provide care support.

In the medical group most professional health care activities were registered in the classes ‘adjusting medication’ (32% versus 7% in the ICF group) and ‘medical referral’ (24% versus 5% in the ICF group). ‘Medical referral’ consisted of referrals to, amongst others medical specialists. A comparison of the proportions of registered professional health care activities between the two groups shows that the differences in these two classes were also significant.

5.3.3 Self-reported problems compared with the registered problems

The self-reported status of functioning (Table 5.2) showed that in both groups the most severe problems were in the health components ‘body functions and structures’ and ‘activities’. ‘Fatigue’ was the most severe problem, directly followed by limitations in the domains ‘basic movement’ and ‘daily living’ in the health component ‘activities’. Impairments in the health component ‘body functions and structures’ in the domains ‘excretion and reproduction’ (e.g. constipation and incontinence problems) and ‘muscle and movement’ were the third severe problems.

The Spearman’s correlation tests showed two significant correlations: the severity of the self-reported problems in the domain ‘basic movement’ and the frequency of the health problems registered in that domain had a coefficient of 0.37 ($p < 0.05$) in the ICF group. In the medical group the severity of the self-reported problems in the domain ‘daily living’ and the frequency of the problems registered in that domain had a negative coefficient of −0.51 ($p < 0.05$). Moreover, there were two other negative correlations in the medical group: the severity of the self-reported problems in the component ‘participation’ and the frequency of the health problems registered in that component had a coefficient of −0.34; the severity of the self-reported
problems in the domain ‘basic movement’ and the frequency of the health problems registered in that domain had a coefficient of –0.29. This means that the high severity scores in these domains, as scored by the patients themselves, are disproportionate with the low number of problems identified and registered in the medical group.

5.4 Discussion

The purpose of this study was to examine the differences between a functioning assessment (ICF) and a conventional medical assessment in terms of their respective consequences for health professionals' clinical decision-making and the fit with patient’s own perspective of health.

Our results show that a functioning assessment results in significantly more registered problems within the health components ‘participation’ and ‘environmental factors’. These results are consistent with a previous report which showed that if health care professionals are offered a tool that enables them to assess patients in a broader health perspective, they identify problems in all health components.\(^{10}\) It may seem only logical to focus on broader health components rather than just the medical components in patients with a chronic disease. But without a specific tool with which these health components are explicitly examined, they are left out of formal health care provision. Due to the fact that the measures and tools used in the medical pathogenic approach are disease-specific and focused on pathophysiology,\(^ {27}\) the biopsychosocial orientation needs tools that are specific for the other health components and which also take into account both patient’s ability and their own perspective of health. Moreover, the results of our study show that using the biopsychosocial perspective does not detract attention from the medical status. To illustrate this: the health problems registered in the component ‘body functions and structures’, which represents the medical status of disease-related problems, were similar in the ICF group and the medical group.

With respect to professional health care activities, the most important difference was that the functioning assessment in the ICF group led to the registration of significantly more professional health care activities in the classes ‘giving information/advice’, gathering information/consultation of professionals’, and ‘arranging additional support/obtaining assisting products’
when compared to the medical group. The medical assessment, by contrast, resulted in the registration of significantly more professional health care activities in the classes ‘medical referral’ and ‘adjusting medication’. This difference between the two groups can be explained as being the result of the differences in the assessed health problems between both groups. The professional health care activities in the classes ‘giving information/advice’, ‘gathering information/consultation of professionals’, and ‘arranging additional support/obtaining assisting products’ seem appropriate given the high prevalence of registered problems in the health components ‘participation’ and ‘environmental factors’ and are focused on supporting patients ability. Furthermore, in the medical group the professional health care activities in the classes ‘medical referral’ and ‘adjusting medication’ also seem appropriate considering the relatively high prevalence of registered problems in the health component ‘body functions and structures’.

At the start of the study period, the self-reported status of functioning of the patients was the same in the two groups. The severity of disability was found to be the highest in the health components ‘body functions and structures’ and ‘activities’. The use of the medical assessment led to a disproportionate focus on the component ‘body functions and structures’, with very limited attention to the problems in the other health components. In contrast, while the use of the functioning assessment also led to a strong focus on the problems in the health component ‘body functions and structures’, the other health components nevertheless received sufficient attention. Two significant correlations were identified between the severity of the self-reported problems by patients and the frequency of the health problems registered by health professionals. First, a positive correlation was found in the ICF group in the domain ‘basic movement’. This means that the severity of the self-reported problems in that domain is proportionate with the identification and registration of these problems by the health professional. Second, a negative correlation was found in the medical group related to the domain ‘daily living’. This means that the severity of the problems as scored by the patients themselves is disproportionate with the number of problems in that domain identified and registered by the health professional. The results of this study indicate that the clinical decision-making of health professionals according to the functioning assessment had a more closely fit with the self-reported problems by patients when compared to the clinical decision-making
according to the medical assessment.

Finally, we pointed out that the differences in professional health care activities compared to the similarity in health problems in the component ‘body functions and structures’ mean that for the same health problems different professional health care activities will be performed for the two groups. For example ‘adjusting medication’ was the health care activity in the medical group for the health problem ‘fatigue’, where in the ICF group also ‘additional support’ and ‘giving advice or information’ were applied. Assessing the health status from the medical perspective only, generates unilateral (medical) interventions. In contrast, a broader health perspective results in multilateral health care, which is far more appropriate for supporting patients’ ability to adapt and self-manage the social, physical, and emotional challenges they face.

5.4.1 Limitations

This study has some limitations. Firstly, the data are derived from a randomised controlled trial of a nonpharmacological intervention. In this design the effect of a given treatment can be biased due to differential expertise of the health care providers. In our study the health care professionals involved had different expertise, but they each conducted an assessment method that reflected their own expertise. The nurse practitioners used the functioning assessment based on the biopsychosocial perspective and the neurologists used the medical assessment based on the medical model. The biopsychosocial perspective is central to the education of nurses, and the same can be said about the medical perspective with respect to the education of neurologists. If both types of professionals were obliged to use both the experimental (ICF) assessment and control (medical) assessment, the restricted expertise and experience could have compromised the validity of the results. The skill set needed to perform the functioning assessment requires training and experience. By only performing the assessment in which health professionals have expertise, the problem of the differential expertise might just have been avoided in our study.

Secondly, the patients in the ICF group were consulted by the nurse practitioner at their homes, whereas the patients in the medical group were consulted by the neurologist in the hospital. At home, the health components ‘participation’ and ‘environmental factors’ are of course more salient than in
the hospital. However, the strength of this study, apart from its design, is that the ICF group and the medical group were similar with respect to all patient characteristics and with respect to the self-reported status of functioning. This means the differences between the two groups can be explained by the difference in the assessment method used.

Finally this study represents patients with MS. Hence, the results might not be generalisable to other patient populations. However, the study design itself can be used for evaluating a functioning assessment as a general assessment in other patient groups.

5.5 Conclusion

The current study shows that the functioning assessment results in a treatment and care plan for patients that is not only broader (all health components) and more complete (including the components ‘participation’ and ‘environmental factors’) but which also reflects patients’ self-reported problems more closely when compared to the medical assessment alone. The health components ‘activities’, ‘participation’, and ‘environmental factors’ offer the opportunity to improve the health of patients with MS. At the same time the functioning assessment does not neglect the medical problems represented in the component ‘body functions and structures’. Due to its terminology, which is not discipline specific, the ICF functioning assessment can be used as a general assessment at the start of the health care process. This is important in order to acknowledge the views, experiences, and perspectives of the patients themselves and all the multidisciplinary team members involved in the health care process. Next, clinical decisions can be made in a multidisciplinary way and the required discipline-specific interventions can be performed. Concurrently, the ICF can also reflect discipline-specific terms.

The functioning assessment is a suitable general assessment tool to determine health care provision to improve health. It meets the growing chronically ill patient population in which the central question is: ‘How can this person become healthier, while at the same time he stays more or less ill’? Further research into the use of a functioning assessment and its consequences for clinical outcomes is required to confirm our conclusions. Relevant outcome parameters could be, for instance, the association
with patient outcomes such as quality of life, and the effects of specific professional health care activities in the health components ‘activities’, ‘participation’, and ‘environmental factors’.

5.6 Relevance to clinical practice
This study has shown that health problems related to the health components ‘participation’ and ‘environmental factors’ remain unnoticed by a medical assessment alone. A functioning assessment based on the formalized and systematic construction of the ICF provides a strong foundation for identifying ability and disability in all health components without a loss of focus on medical problems. Nursing is the discipline that is pre-eminently involved with patients’ status of functioning. In addition nurses have the skills to respond to (dis)ability in the health components ‘activities’, ‘participation’, and ‘environmental factors’. Further research into the key role nurses can play with respect to the patients’ status of functioning is required.
References


“Dik zijn is geen eigen keuze. De staat zet dikke mensen weg als morele lapzwansen.”

de Volkskrant, 29 september 2007, Inez de Beaufort.