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LETTER TO THE EDITOR

COMMENTS ON THE ARTICLE "CAN THE ICF BE USED AS A REHABILITATION OUTCOME MEASURE? A STUDY LOOKING AT THE INTER- AND INTRA-RATER RELIABILITY OF ICF CATEGORIES DERIVED FROM AN ADL ASSESSMENT TOOL"

We read with interest the paper of Kohler et al. (1), and agree that a comparison with an established disability instrument, such as the Functional Independence Measure (FIM™) (2), is appropriate. FIM™ and items from the International Classification of Functioning, Disability and Health (ICF) (3) have been subject to several psychometric analyses, including the Rasch analyses approach intended for ordinal scales. Modifications of the category scaling have been suggested, such as combining scale steps, based on lack of sufficient appearance or disordered thresholds, resulting in improved psychometric properties. Such an approach may have an effect on the reliability of the instrument. However, we are aware that the categories (qualifiers) for FIM and ICF have been used as originally suggested. It is still necessary to consider the use of qualifiers further, as it was pointed out in the ICF that "assessment procedures have to be developed further through research". Reports show the need to collapse some categories (qualifiers) for certain items of the ICF, as in studies in patients with osteoarthritis (4), after stroke (5), with fibromyalgia (6) and with lowback pain (7). The psychometric properties of the FIM™ have been studied with various approaches; with the use of Rasch analysis by Tennant et al. (8), Lundgren-Nilsson et al. (9) and Lundgren-Nilsson & Tennant (10), showing, in stroke patients, that FIM may satisfy the Rasch model expectations and unidimensionality, but first after partial credit parameterization with re-scored categories. It is acknowledged that the authors of the present article compared individual items and thus avoided the principal problems in using sum scores for ordinal scale data.

Another problem in this study, noted briefly in the paper by the authors, is the lack of a manual for the detailed content of ICF codes and their suggested qualifiers for use in assessments. Some refinements of qualifier definitions are given in the paper, but unfortunately not for all ICF items, which would be necessary for further studies. The lack of a manual for the use of ICF codes, as is also pointed out in the paper, limits the comparison to the FIM™, where such a detailed manual is available.

Our main concern with the report is, however, the linking of FIM™ items to the ICF, where we consider that, for some items, additional ICF codes are appropriate. For a number of FIM™ items the authors have, however, indicated a one-to-one relationship with ICF codes, with which we agree. We must admit that we do not fully understand the comment by the authors in the last paragraph in the Discussion: "Not being able to link some other FIM™ items…..", not being according to Table I in their article. We are aware that certain aspects may have been based on the particular material provided by patients in the report. However, since such a linking table could be of use for reference in the future, especially as only a few linkage reports of FIM™ to ICF are available, we provide an alternative linking table below (Table I) and give our reasons for the alternatives.

For Grooming, according to the FIM™ manual, washing and drying of body parts, such as face, hands and hair, must be included using d5100 and d5102, as washing and drying are not part of the ICF code used Caring for body parts problems (d520). Also, for Bathing (d5101 instead of only using d510, as it specifies washing the whole body, such as taking a bath or shower), drying (d5102 – includes drying the whole body, such as after washing) should be included.

The FIM™ items Bladder and Bowel management have often created problems in the use of the categories as well in the psychometric analysis, as they contain body function elements (b620 and b525, respectively) as well as activity aspects, such as handling of technical equipments or medicine, see FIM™ manual. One solution is to use, in addition to your linking the ICF codes d5300 (Regulating urination) and d5301 (Regulating defecation), respectively, but this is neither a fully justified solution as these ICF codes contain several activities outside the FIM™ items, such as manipulating clothing before and after and cleaning oneself, which belongs to the FIM™ item

Table I. *Linkage of Functional Independence Measure (FIM) items to International Classification of Functioning, Disability and Health (ICF) codes – an alternative version*

FIM item	ICF code
Eating	d550, d560
Grooming	d5100, d5102, d520
Bathing	d5101, d5102
Dressing upper body	d540 (upper and lower body cannot be separated in ICF)
Dressing lower body	d540
Toileting	d530
Bladder management	b620 (d5300 and only partly)
Bowel management	b525 (d5301 and only partly)
Transfer bed	d410
Transfer toilet	d410
Transfer tub/shower	d410
Walk	d4500
Wheelchair	d465
Stairs	d4551
Comprehension	d310, d315, d325, (d320)
Expression	d330, d335, d345, (d340)
Social interaction	d710 (d720)
Problem solving	d175
Memory	No direct correspondence with ICF describing the activity content of this item

Toileting. However, indicating need is included in those codes. We consider that it is difficult to justify fully the linkage of these FIM™ items to ICF.

For Comprehension and Expression the authors have unfortunately neglected that these items also include Understanding (d325) and Producing (d345) written messages. Also, Communication and Expression using non-verbal messages, such as body gestures and signs and symbols, are included in the content of the FIM™ items and would correspond to d315 and d335, respectively. The authors note that, depending in the material in their report, they have decided to omit Comprehension and Expression using formal sign language (d320 and d340), which in other groups of subjects would be relevant. Thus, we include these ICF codes in Table I.

The linkage of Social interaction is, in our opinion, lacking broader aspects, as indicated in the FIM™ manual, such as to participate in treatment and social situations and to deal with others as well as one's own needs. This could be described by using d720 in addition to d710, but this may imply too wide a definition, and we are left with some limitation in linking this FIM™ item to ICF.

Finally, we would like to point out that the Memory item in FIM™ is an activity item and not a body function item as described by the ICF code b144; compare the description of that ICF code (Specific mental functions of registering and storing information and retrieving it as needed) with the description of the FIM™ item (Ability to recognize and remember daily activities as performed in the caring environment and in the society) and thus is related more in detail to specific daily situations. We think that the Memory item in FIM™ has no appropriate ICF code for linkage.

Thus, in answering the overall question "Can the ICF be used as a rehabilitation outcome measure", studies of validity and psychometric properties of the ICF items and qualifiers are needed in addition to reliability studies, which then also ought to be done using clinical observations. For the linkage of FIM™ to ICF a broader approach than that described in the present article is necessary, especially if such a table might be used for reference of the content of FIM™ described with ICF codes. The comparison of inter-rater and intra-rater reliability between the ICF and FIM™ may then turn out somewhat differently. We are aware of the problems that may be created in comparing reproducibility between these 2 "instruments" as intended in the present article, but that would be possible to solve statistically.

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