LETTER TO THE EDITOR

A note on the theoretical framework of World Health Organization Disability Assessment Schedule II

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An overview on the A. Schlote et al.’s study

With our 2007 study on knowledge and spread of biopsychosocial model of disability (launched by the ICF – International Classification of Functioning, Disability and Health [1]) among teachers, educators, and disabled students’ parents [2,3], we soon realized that an adequate understanding of the model itself and its applications was a long way off. Nevertheless, we were certain that the concepts of functioning, disability, and health, according to the theoretical perspective of the biopsychosocial model, were widely understood, at least within international scientific community. We, therefore, are quite surprised with A. Schlote, M. Richter, M.T. Wunderlich, U. Poppendick, C. Moller, K. Schwelm, and C.W. Wallesch research entitled ‘WHODAS II with people after stroke and their relatives’ [4] recently published in this journal because it seems as if these concepts are not shared by these researchers.

A. Schlote et al. intend to measure the internal consistency and the validity of the World Health Organization Disability Assessment Schedule II (WHODAS II), besides the inter-rater-correlation among the scores gathered by the administration of the tool to patients with stroke and their closest significant others. In a articulated and not always clear experimental procedure, during which data have been collected to analyze the psychometric validation, the 36 items version of WHODAS II, the modified Rankin Scale (which assesses the functioning limitations of people after stroke), and the National Institute of Health-Stroke Scale (a diagnostic scale that assesses typical stroke-related neurological deficits) have been administered. The results indicate, according to the international scientific literature [5], that the WHODAS II is a valid, generally reliable and useful instrument for the assessment of patients with stroke over the 1st year after stroke.

Herein, we will demonstrate A. Schlote et al.’s serious errors in defining the theoretical model of the WHODAS II and in doing so critically comment on some aspects of their experimental design.

Is the WHODAS II a measurement of the disability as a consequence of a disease or of the individual functioning irrespective of medical diagnosis?

From the beginning of the article it is clear that the A. Schlote et al. do not have a clear understanding of what the WHODAS II is because they state the WHODAS II is ‘a standardized instrument for the assessment of limitations and restrictions resulting from illness.’ [4, p 855]. A. Schlote et al.’s statement contradicts the definition upheld by the ICF’s health and individual functioning model, and of course the definition as given in the WHODAS II’s Training Manual, ‘The WHODAS II has been developed to assess the activity limitations and participation restrictions experienced by an individual irrespective of medical diagnosis’ [6, p 10]. The novelty of the WHODAS II approach resides in supporting that individual functioning self-perception and/or disability is not a direct and immediate result of...
morbidity of a disease, such as it has been diagnosed by objective and standardized criteria. Therefore, for the same morbidity, the same health condition may be perceived by different individuals and in different contexts as differently disabling.

In A. Sen’s well-known research [7] on the differences of the self-perception of own pathological condition (morbidity), Americans were found to have a morbidity score 10 times higher than the one perceived by people of Bihar, one of the poorest Indian state. According to this research, we should arrive at the counterintuitive inference that the health conditions of people of Bihar are better than the ones of Americans. But is this actually counterintuitive? If we consider that individual’s health is something more than the simple medical conditions, then the answer is ‘No’. If we understand the important contribution that the biopsychosocial model of disability may offer to understand that health, and health-related components of well-being, we see that one’s ‘health’ goes beyond medical indications. According to the ICF’s theoretical model, disability is no more intended as an obvious consequence of a pathological health condition but as a specific, momentary or permanent, manner of an individual’s ‘functioning’ in a certain context. For these reasons, we can assert that ICF ‘does not classify people, but describes the situation of each person within an array of health or health-related domains’ [1, p 10].

It is just this possibility, offered by the tool, to assess the degree of self-perceived disability, independently from a medical diagnosis (and then from the disease), which makes WHODAS II a conceptually compatible tool with the ICF. The WHODAS II deals with one of the aspects of that new language introduced by the ICF that, according to several scholars [8] represents a basic reference point for a new health concept universally accepted, that however appears to be neglected by the A. Schlote et al.

Is the ICF a classification of a person’s damage or functioning?

In several passages, we are left doubting whether A. Schlote et al. have fully understood the meaning of the ICF’s new classification. The use of words such as ‘activity’ and ‘participation’ often just superficially seems to refer to the meaning ascribed by the ICF, and seem on the contrary to be consistent with the meanings supported by ICIDH – International Classification of Impairments, Disabilities, and Handicap’s [9] old classification system. This apparent use of an old classification system is evinced when A. Schlote et al. justify the validity of WHODAS II, by quoting a 1983 United Nations disability definition which is consistent with the ICIDH concepts and not the ICF ones.

An example of this confusion can be found in the following statement, which highlights a medical perspective of disability, rather than a biopsychosocial one, yet still referring to the ICF theoretical model:

‘ICF aims to be a globally applicable and standardized framework for the description and classification of health and health related conditions. The ICF takes into account damage to body structures, impairments of body functions, of activities and participations as well as context factors of influence and thus relates to a biopsychosocial model of health, or disease, respectively’ [4, p 855].

This statement is false as it does not accurately represent the ICF theoretical model. For the ICF, classification does not take into account damages or impairment but functioning. There is no code of the taxonomy that classifies impairment, or disability or handicap. Therefore, this is the structure of the ICIDH, where categories describe different structural and functional impairments, different disabilities and handicaps resulting from impairment. On the contrary, in no ICF category is impairment or disability classified. As a consequence, in the ICIDH one may find a damage to a body structure, such as ‘Absence of eye’ (code number: 50), but in the ICF we find the only description of structure, such as ‘Structure of eye socket’ and ‘Structure of eyeball’ (code number: s210 and s220) and of corresponding function, such as ‘Seeing functions’ (code number: b210).

Therefore, only in the ICIDH is there a taxonomy of ‘Seeing Disabilities’ (code number: 25–27), which is wholly absent in the ICF. As the new classification states:

‘ICF has moved away from being a “consequences of disease” classification (1980 version) to become a “components of health” classification. “Components of health” identifies the constituents of health, whereas “consequences” focuses on the impacts of diseases or other health conditions that may follow as a result. Thus, ICF takes a neutral stand with regard to etiology so that researchers can draw causal inferences using appropriate scientific methods. Similarly, this approach is also different from a “determinants of health” or “risk factors” approach. To facilitate the study of determinants or risk factors, ICF includes a list of environmental factors that describe the context in which individuals live’ [1, p 5].

The pertinence of the literature cited and discussed

Another embarrassing misunderstanding of A. Schlote et al. is their ascription to the ICF theoretical
framework that is demonstrated by their citation of an excellent yet obviously dated research (i.e. the famous article of Engel, published on Science in 1977, entitled ‘The need for a new medical model: a challenge for biomedicine’ [10]) to defend their position. We wonder why they do not consider all the theoreticians of the biopsychosocial model that since the 1977 have not only accepted Engel’s challenge but have also substantially developed Engel’s insight [11]. We cannot resist formulating the following analogy: Quoting Engel about the biopsychosocial model is like referring to Copernicus to explain Kant’s Copernican Revolution.

Another critique regarding the literature quoted and discussed is the lack of relevant and comprehensive literature. For instance, when the A. Schlote et al. inaccurately assert that ‘[WHODAS II] psychometric properties have not yet been evaluated for its use in this [stroke] condition’ [4, p 856]. This is an inaccurate because while the amount of studies which survey the psychometric features of the WHODAS II is not high [12–19], there are at least three studies that evaluate such properties with patients after stroke [20–22]. Analogously, A. Schlote et al.’s affirmation ‘objectivity of interpretation has not yet been established, as norms are not yet available’ is just flat wrong. Actually, not only does the general population norms exist, but even more that one on specific category of patients are available on demand at the Home Page for the World Health Organization Disability Assessment Schedule II [23]. Finally, A. Schlote et al. seem to believe that the application of the WHODAS II is scarce and evaluated just for a small number of diseases, again this is just flat wrong as more than 50 published studies exist [5].

Is disability a prerequisite for handicap or a condition of individual functioning?

As a consequence of the misinterpretation of the theoretical construct of the ICF and the WHODAS II, A. Schlote et al. implicitly and explicitly adopt a disability definition that does not coincide in any way with the one claimed by the biopsychosocial model. Therefore, much of the methodology, the tools administered, and the interpretation of the results appear to us to be justified by a vision of disability as a ‘prerequisite for handicap’ and a consequence of a disease [4, p 862].

Around the conclusion of the article A. Schlote et al. reveal the motivation for their use of WHODAS II. Their motivation is revealing because it helps to demonstrate the complete theoretical and conceptual incongruence of their motivations in the using of the WHODAS II. It is worthwhile to quote a paragraph from the conclusion of Schlote et al.’s article as it clearly reveals the basic problems of A. Schlote et al.’s conceptual framework:

‘All in all, the interrelations found were even higher than those reported by other authors for the SF-36 […]. It could be criticised that the Rankin Scale is a rather coarse instrument that does not assess limitations and restrictions but rather participation. On the other hand, we did not feel justified to validate WHODAS II against instruments such as the SF-36, which follows a very different concept, i.e. health related quality of life. Following the definition of the United Nations “Handicap is a disadvantage for a given individual, resulting from an impairment or disability…” […], we consider disability/activity limitation a prerequisite for handicap/participation restriction. Consequently, values on the Rankin Scale should correspond to those of an instrument assessing disability’ [4, p 862].

As indicated previously the Schlote et al.’s view of disability seems to match the ICIDH one, whose definition of disability is: ‘Any restriction or lack (resulting from an impairment) of ability to perform an activity in the manner or within the range considered normal for a human being’ [9, p 143]; and of handicap which is: ‘A disadvantage for a given individual, resulting from an impairment or disability, that limits or prevents the fulfilment of a role that is normal […] for that individual’ [9, p 183]. The ICF, on the other hand, affirms in a note [1, p 191] that the concept ‘activity limitation’ and ‘participation restriction’, respectively, replace ‘disability’ and ‘handicap’ used in the 1980 version of the ICIDH. Nevertheless, herein the problem is not only a mere concept substitution, but it requires the concepts to be understood in the new ICF framework, as follows: ‘ICF differs substantially from the 1980 version of ICIDH in the depiction of the interrelations between functioning and disability. It should be noted that any diagram is likely to be incomplete and prone to misrepresentation because of the complexity of interactions in a multidimensional model. The model is drawn to illustrate multiple interactions. Other depictions indicating other important foci in the process are certainly possible’ [1, p 25].

Moreover, it is well-known that during the revision process from ICIDH to ICF the term handicap was abandoned, accepting the requests from the English speaking countries which considered the term ‘handicap’ stigmatizing and discriminating [1, pp 187–188]. On the contrary, in the Schlote et al.’s words, it seems that the shift from the old classification to the new one has involved a simple terminological variation in a theoretical view fundamentally unchanged: new words for old schemes.

The relationship between ‘activity limitation’ and ‘participation restriction’ does not have, within the ICF’s biopsychosocial model, a consistent nature, as
the A. Schlote et al. seem to suggest. That the
‘participation restriction’, that is ‘handicap’ (according
to the old terminology used before the ICF), is a
consistent, sequential, and unidirectional conse-
quence of an ‘activity limitation’ (resulting from an
impairment) is the expression of the model which
characterized the ICIDH and the United Nations
declaration (quoted by the Authors) during the
1970s, but it is not related with the ICF.
Indeed, in the ICF, the disability, intended as an
umbrella term, is the multidetermined outcome of
three components: (i) body structures and func-
tions; (ii) environmental factors; and (iii) personal
factors, which reciprocally interact in a circle cause
relationship:

‘Functioning is an umbrella term encompassing all body
functions, activities and participation; similarly, disability
serves as an umbrella term for impairments, activity
limitations or participation restrictions. [...] A person’s
functioning and disability is conceived as a dynamic
interaction between health conditions (diseases, dis-
orders, injuries, traumas, etc.) and contextual factors,
[... where such as] this interaction can be viewed as a
process or a result depending on the user’ [1, p 3.10].

Therefore, the functioning/disability/health model
which arises from the ICF, and that is shared by the
WHODAS II, is much more complex that the
Authors intend in their article.
In the same way, it is not clear why A. Schlot
et al. may refer to the ‘World Programme of Action
Concerning Disabled Persons’ by the United
Nations of 1983 [24], but seem to neglect the more
recent ‘Convention on the Rights of Persons with
Disabilities’ according to that the ‘disability is an
evolving concept and that disability results from the
interaction between persons with impairments and
attitudinal and environmental barriers that hinders
their full and effective participation in society on an
equal basis with others’ [25, p 5].
Finally, the statement that the WHODAS II
should not be validated in relation to the SF-36 is
clearly disproved by the remarkable amount of
studies that, in a biopsychosocial view, draw the
concept of functioning/disability near the one of
quality of life [5].

Conclusions
Our aim is not to criticize or defend one definition of
disability among the others, but to point out the
incoherence in Schlote et al.’s definition of the
disability. If one adopts the WHODAS II as a
measurement tool, the conceptual framework –
according to the background in which the tool has
been conceived – must be the ICF one. Otherwise, if
one refers to the ICIDH conceptual viewpoint, it is
necessary to set up a measurement tool adequate to
definition of disability which arises from that
framework. The logical consequence is that if
scholars do not want to reduce statistical results to
mere quantitative scores, but consider them
grounded on scientific theoretical hypotheses and
expected results, then scholars must deeply examine,
understand and accurately refer to relevant
literature. According to our opinion, the Schlote
et al.’s misunderstanding of the WHODAS II and
the ICF theoretical framework compromises their
experimental design, so that (i) their choice of using
the Rankin Scale, rather than the SF-36 for the
convergent validation arises from the confusion
between the linear model of disability (ICIDH)
and the circular and multi-determined model (ICF)
which (ii) leads Schlote et al. to confirm their
experimental hypotheses, but for all the wrong
reasons.

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