

## Disability in Chronic Fatigue Syndrome and Idiopathic Chronic Fatigue

Dear Sir/Madame,

I read the article by Carrico *et al.* [1], in which the authors concluded that individuals with chronic fatigue syndrome (CFS) and idiopathic chronic fatigue (ICF) as defined by Fukuda *et al.* [2] did not significantly differ in the level of self-reported functional impairment, with interest. However, three issues that may have influenced the outcome deserve more attention.

First, selection bias may have resulted in overestimation of the level of functional impairment in the ICF group. The ICF subjects were selected from a group of so-called 'CFS-like' participants, which means that they had reported at least four "minor" symptoms in their telephone interviews. Given that more symptoms should be associated with greater impairment, requiring a minimum number of symptoms implies the selection of more impaired individuals. Furthermore, since the ICF definition by Fukuda *et al.* [2] does not state that the absence of functional impairment is a reason to exclude a subject from an ICF qualification, the exclusion of the participant without functional impairment from the ICF group was not justified.

Second, the current CFS definition requires that chronic fatigue results "in substantial reduction in previous levels of occupational, educational, social or personal activities" [2]. Because subjects in the "mild" category of the present study were able to work full time and on some family responsibilities, one could argue that they were not substantially impaired in daily activities and, hence, should be qualified as ICF instead of CFS. With a 'mild' category consisting of zero CFS and 44 ICF individuals, the groups would have differed significantly ( $\chi^2(2, N = 75) = 31.21, p < .001$ ) in their functional impairment classifications. So the outcome strongly depends on the interpretation of the CFS definition and in particular, the interpretation of the word "substantial". It is worth noting that the original CFS definition by Holmes *et al.* [3] required fatigue that was "severe enough to reduce or impair average daily activity below 50% of the patient's premorbid activity level for a period of at least 6 months", thus individuals in the 'mild' category would certainly not meet those criteria for CFS.

Third, the authors found no significant difference when they compared the CFS and ICF groups using three functional impairment categories. If they had chosen to use just two categories, "mild" and "moderate/severe/very severe", then they would have found a significant difference between the groups ( $\chi^2(1, N = 75) = 3.97, p < .05$ ). Thus the outcome of the study strongly depends on the definition and the number of categories. It also depends on the selected statistical methods: a two sided Fisher exact test results in  $p > .05$  for this example. It would be very interesting to see the results of tests that use continuous data instead of the rather arbitrary categories, e.g. Mann-Whitney U tests, for each of the three functional impairment measures that were assessed.

Although I welcome the authors' efforts to study disability in CFS and ICF, the effects of a slightly different interpretation of the definitions and the use of another functional impairment measure on the study outcome may have been overlooked. Especially when applied to representative community-based samples, studies that adequately address these issues can be very valuable to resolve some of the ambiguities that are seen nowadays in CFS research.

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#### References

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