Reviewer’s report

Title: Exploring Differential Item Functioning in the SF-36 by demographic, clinical, psychological and social factors in an osteoarthritis population.

Version: 2 Date: 18 September 2013

Reviewer: Joel Coste

Reviewer’s report:

Major Compulsory Revisions

The reviewer recommends the authors to clearly state if the main point of the paper is methodological or application to measuring PROs in OA.

Regarding methodology, the various techniques used in the paper overwhelm the reader a little bit. Rasch model analysis (eg partial credit models) which allows formally testing both undimensionality and differential item functioning (either uniform or non uniform) would be much more elegant in this case. OLR is no less complex and problematical than IRT or Rasch models (see the statistical literature, very critical of OLR). The fact that IRT “requires good model fit” is clearly an advantage over OLR in the reviewer’s mind.

Regarding application, the authors may list the hypotheses that deserve attention in the context of clinical research on OA (DIF for sex, joint, side etc) and their implication for design (eg stratification) or analysis of studies. The authors may also discuss more comprehensively the literature on the SF-36 (and on other quality of life measures) behaviour when applied to patients with OA or other rheumatic or painful conditions.

Level of interest: An article of limited interest

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

No competing interests