Reviewer’s report

Title: The longitudinal association of cognitive appraisals and coping strategies with physical functioning in older adults with joint pain and comorbidity: a cohort study

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Reviewer: Nieke Elbers

Reviewer’s report:

Overall it is a nicely written study with a well-defined research question. The title and abstract accurately convey what has been found. The methods can be described in a bit more detail. The authors refer to a published study protocol, but more detail about the participant recruitment has to be provided in the current manuscript to be able to be read as a stand-alone paper. The data are sound, based on validated questionnaires, collected prospectively over an 18 months’ time frame (although the authors indicated that the follow up period may not have been sufficiently long enough to examine changes). The method of statistical analysis (GEE) is good. The tables and figures are informative. The limitations of the work are stated. The discussion and conclusions are well balanced and adequately supported by the data.

Major Compulsory Revisions

• Methods, p. 5: The authors are asked to provide more information about the recruitment sites and recruitment period. In the study protocol they say they will recruit from approximately 25 general practices located in the Northwest of the Netherlands, but it is not known whether this is achieved. It is important to include the recruitment sites and recruitment period in this manuscript.

• Methods, heading Covariates, p. 8, line 5: The authors state that age, gender and education data were derived from the baseline questionnaire. Why are only these covariates selected? The study protocol shows that other relevant factors were collected, such as lifestyle, BMI, falls, and the number of chronic diseases, factors that are very relevant to physical functioning, and possibly also related to cognitive appraisals and coping. Could the authors adjust for these factors?

• Results, p. 10: A flowchart of participant recruitment would be illustrative. It is also important to provide information about eligibility/non-response. If the data is available, could a non-response analysis be provided, e.g. on age and sex?

• Results, p. 10. The authors report they recruited 407 participants, and that 317 participants completed the study. In the study protocol they calculated they should recruit 450 participants as they need approximately 400 participants at follow up for the development of the prediction models. Possibly the lower sample size is not an problem in this paper because the GEE analysis allows all participants to be included, regardless of missing data. Nevertheless, could the authors reflect on their sample size?
• Results, p. 11, line 3 ‘further analysis’: it would be helpful if a table is provided showing all the additional effect modification analyses, assuming that more analyses were conducted, and that only the three significant ones are reported here. It would be good to see which interaction effects were explored, as that was not really clear from the method section either (statistical analysis, p. 9).

Minor Essential Revisions

• Background, p. 5, line 3: A different transition between “…inconsistent” (line 2) and “However, several studies” (line 3) would be better.
• Methods, p 6., line 9-11: Duplicated text “The Medical Ethics …from all participants” should be eliminated
• Table 3. In the notes under the Table, it is written that model 2 was adjusted for age and education. According to the main text, the authors also adjusted for sex.

Level of interest: An article of importance in its field

Quality of written English: Acceptable

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

Declaration of competing interests:

I declare that I have no competing interests