Reviewer’s report

Title: A prospective study of the impact of musculoskeletal pain and radiographic osteoarthritis on health related quality of life in community dwelling older people

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Reviewer: Shigeyuki Muraki

Reviewer’s report:

Laslett and colleagues have used a prospective model to study osteoarthritis and pain at multiple sites and their impact on health-related quality of life in the elderly. This is an interesting paper, but a critical piece is missing because the authors have not described how they assessed self-reported OA and pain. These items are quite important and should be described in the manuscript.

Abstract

1. Background: There have been several papers on the association between pain and radiographic changes with QOL. Please describe the background of this manuscript clearly.

Introduction

1. Although baseline back, knee, and hip pain were associated with reduced QOL over 4 years of observation in a Chinese volunteer cohort, why did the authors examine these associations again in western populations? Please clarify.

Materials and Methods

1. Are there any references regarding TasOAC? If not, please describe the details. The authors should also spell out TasOAC before using the abbreviation.

2. Was the AQOL validated in Tasmanian men and women?

3. The authors used categorical methods to read osteophytes and joint space narrowing; thus, it may be better to use kappa methods rather than ICC to examine the repeatability.

4. Please describe more clearly how you assessed physician-diagnosed osteoarthritis, pain, and RA. This is very important. What are the questions regarding OA, pain, and RA?

Are the questions validated?

Results

1. Participants: There was some description of MRI, but there was no description of this in the Methods. Please clarify.
2. What is the association between self-reported OA and radiographic OA at each site?

3. Please show the standardized beta in Step 2 of Table 2, because the impact of variables on QOL can be compared using the standardized beta.

4. What statistical methods were used to determine the linear association between the number of pain sites and QOL? Please describe this clearly in the methods and results.

5. In Table 4, why did the authors not test the association between diagnosed OA and QOL after 5 years of observation?

Discussion

1. Page 14, line 2. The authors concluded that the back and shoulders were the most important factors in their analyses, but did not explain how they came to this conclusion. Please clarify.

2. Page 14, line 18. The reviewer agrees that pain is more strongly associated with QOL than radiographic findings, but several papers have shown that radiographic OA was also associated with QOL. Why were JSN and osteophyte at the knee and hip not associated with QOL at all in this paper? Please discuss this.

3. Page 15, lines 1–4; Mental distress is not only associated with mental health component of QOL but also with other components of QOL. In fact, it is well known that mental distress is associated with the presence or severity of pain. Thus, an analysis that excludes the mental health component cannot suggest that the limitation regarding the absence of information on psychological factors is not a major issue.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

'I declare that I have no competing interest