Author's response to reviews

Title: Prevalence of multi-site musculoskeletal symptoms: a French cross-sectional working population-based study

Authors:

Elsa Parot-Schinkel (elparot@chu-angers.fr)
Alexis Descatha (alexis.descatha@inserm.fr)
Catherine Ha (c.ha@invs.sante.fr)
Audrey Petit-Le Manac'h (aupetit@chu-angers.fr)
Annette Leclerc (annette.leclerc@inserm.fr)
Yves Roquelaure (yvroquelaure@chu-angers.fr)

Version: 3 Date: 16 December 2011

Author's response to reviews: see over
Reviewer 1: David Coggon  Date: 11 November 2011

This is a well-written report describing a simple but informative analysis that will be of interest to others working in the field. My comments all come under the heading of minor essential revisions.

R1Q1. Line 1 of the abstract states that “the prevalence of work-related musculoskeletal disorders is constantly increasing”. I cannot find a statement to this effect in the main body of the paper. Moreover, it is unclear what is meant by “the prevalence of work-related musculoskeletal disorders”, given that in general it is not possible to ascribe a musculoskeletal disorder to work with confidence in an individual case. Is the statement referring to the excess burden of musculoskeletal disorders attributable to work? If so, supporting evidence should be presented in the Background section of the paper. Alternatively, perhaps the Abstract could be slightly reworded.

In answer to the remarks R1Q1 and R1Q3, it is effectively about work-related musculoskeletal disorders in the sense where they arise at worker’s exposed to activities and working conditions which contribute significantly to their development or exacerbation, but the work cannot be considered as the sole determinant of causation of these disorders. So, the following formulation is probably more adapted: “the prevalence of musculoskeletal disorders in working population”.

Modified article (v3): page 2, line 1 from top and page 4, line 5 from top.

R1Q2. In the Results section of the Abstract, and also in the main body of the paper, numbers are presented in square brackets, which I presume are 95% confidence intervals, although this is not explicitly stated. Unless this is a convention of the Journal, it would be helpful to give an explanation when the usage first appears.

As requested, an explanation was added during the first use of this format in the abstract and in the main body of the paper.

Modified article (v3): page 2, in the Results section of the Abstract, sentence 2 and page 8, in the “Prevalence of musculoskeletal symptoms (MS)” section, paragraph 1.

R1Q3. Page 4, paragraph 1. Here there is statement that “Work-related MSDs are the leading cause of morbidity and work disability in the European Union”. Again, it is unclear exactly what is meant by work-related MSDs. Furthermore, I think across all ages, MSDs unrelated to work are likely to be an even bigger cause of morbidity, and there maybe other illnesses that have even bigger impact. Has the original source been correctly quoted?

Cf answer to the remark R1Q1.

R1Q4. Page 5, lines 1 and 2. It would be helpful to make clear the denominator for the fractions of 1/3 and 2/3. Is it referring to prevalence in the total population, or to prevalence among people who have musculoskeletal symptoms?

It is referring to prevalence in the total population: The precision was added in the paper.

Modified article (v3): page 5, line 2.
R1Q5. Page 7, paragraph 1. It would be helpful to make clear how bilateral anatomical sites were considered. For example, if a participant reported pain in both the right and the left shoulder, did that count as one anatomical site or two?

As we indicated it in the Statistical analysis section, MSS reported for one of studied anatomical sites counted for a site that it is unilateral or bilateral: if a participant reported pain in both the right and the left shoulder, it was count as one anatomical site. The precision was added in the Data section of Methods.

Modified article (v3): page 7, line 10 from top.

R1Q6. Page 9, five lines from bottom. I think this sentence as worded does not accurately reflect what is shown in Table 2. It is not that musculoskeletal symptoms at a given anatomical site were three to twelve times more frequent among workers who reported musculoskeletal symptoms affecting two to four anatomical sites. Rather the prevalence of musculoskeletal symptoms affecting two to four anatomical sites was three to twelve times more common in workers who reported musculoskeletal symptoms at a given anatomical site.

We agree with your remark and we made the wanted modification.

Modified article (v3): page 9, paragraph 2 from bottom.

R1Q7. Page 11, line 3. I suggest this should be “2/3 with multi site…”

We agree with your remark and we made the wanted modification.

Modified article (v3): Page 11, line 3.

R1Q8. Bottom of page 11 and top of page 12. Rather than telling us simply that the validity and repeatability of the questionnaire have been extensively studied, it would be helpful to indicate what the studies found. Did it have good validity and repeatability?

Yes, the validity and repeatability of the questionnaire are good: we made the wanted modification.

Modified article (v3): page 12, line 5 from top.

R1Q9. Page 13, three lines from end. I suggest “conversely” rather than “inversely”.

We agree with your remark and we made the wanted modification.

Modified article (v3): Page 14, line 4 from top.

R1Q10. Page 14, paragraph 4, line 2. It might be clear to say “… higher in women than men for …”.

We agree with your remark and we made the wanted modification.

Modified article (v3): Page 14, line 7 from bottom.
Title: Prevalence of multi-site musculoskeletal symptoms: a French cross-sectional working population-based study

Reviewer's report / Version: 2

Reviewer 2: Susan Picavet Date: 5 November 2011

R2Q1-This paper presents an analyses of the prevalence of musculoskeletal symptoms in the French working population with a focus on multi-site (or multi-region) symptoms. The paper may be improved using more focus what these figures say on the working French population, and what the real issue is with most symptoms being ‘multi-site’.


Modified article (v3): page 15, last paragraph (from bottom).

Abstract

R2Q2- Please add information on age of the population studied and that it is a questionnaire survey;

As requested, the precision was added: “population from 20 to 59 years old” and “self-administrated questionnaire proposed on the subjects in the waiting room”.

Modified article (v3): page 2, Methods section.

R2Q3- I was confused on the use of MSS. Is it short for musculoskeletal symptoms or for multi-site musculoskeletal symptoms?

The abbreviation MSS meant « MusculoSkeletal Symptoms » but we suggest simplifying it by MS for « Musculoskeletal Symptoms ». Furthermore, to avoid any confusion we also have to specify the naming for multisites: multisites MS.

Modified article (v3): in all paper.

R2Q4- Conclusion ‘that further research must be conducted (..)’ is too general

We agree with your remark but, to avoid to lengthening the paper, we have chosen to be concise on this point in the summary. On the other hand, the perspectives were clarified in the body of the paper at the end of discussion.

Modified article (v3): page 15, last paragraph (from bottom).

Methods

R2Q5- In what year was the study carried out?
As we indicated it in the Study design and population section, the study carried out between April 2002 and April 2005.

R2Q6- Do I understand it correctly that the study population is a random selection of those having their annual HES and that as part of the survey they received a questionnaire?

Yes that's right, you understood well.

R2Q7- How long was the questionnaire, was it only the NORDIC, or were more items included, e.g. on life style etc? Was it filled in during the visit? What was the needed time to fill in? Wasn’t there any HES data recorded for the study (e.g. information from the HES)?

The auto-questionnaire proposed in the waiting room included the other numerous questions that those of the NORDIC and a clinical examination standardized was also realized within the framework of this study in working population (Roquelaure Y, Ha C, Leclerc A, Touranchet A, Sauteron M, Melchior M, Imbernon E, Goldberg M: Epidemiologic surveillance of upper-extremity musculoskeletal disorders in the working population. Arthritis Rheum 2006, 55:765-778). The total duration of filling of the questionnaire was about of 30 to 45 minutes. The only data exploited in this article are the ones of the questionnaire NORDIC because we wanted to take into account MS whole body while our clinical examination concerned only certain precise anatomical sites (upper limbs and algodystrophy of the knee).

R2Q8- If the focus is on multi-site, why not also analyzing whether or not the coprevalence of multi-site symptoms was higher than can be expected, given independence.

We agree with your remark but, to avoid to lengthening the paper, we have chosen not to present these results. As it is about a full question, we chose to develop this aspect in another article in the course of writing.

Results

R2Q9- Could be more concise.

As requested, we tried to shorten the section results but more information was requested by another reviewer: we thus preserved this section results such which.

R2Q10- I did not understand the sentence on page 9 “For a given anatomical site, (...) in only one site.”

Further to this remark and further to that of the reporter 1 (R1Q6), the sentence was modified: “The prevalence of MS affecting two to four anatomical sites was three to twelve times more common than prevalence of MS affecting only one site in workers who reported musculoskeletal symptoms at a given anatomical site whatever it is”. Besides, your last suggestion (R2Q19) is very relevant: we replaced the table 2 by a figure.

Modified article (v3): page 9, paragraph 2 from bottom and figure 1.

Discussion

R2Q11- First sentence. The study did not estimate, the study presents an analyses of.

We agree with your remark and we made the wanted modification.

Modified article (v3): page 10, first line of Discussion section.
R2Q12- I have never heard from ‘declaration bias’, you mean reporting bias?
We agree with your remark and we made the wanted modification.
Modified article (v3): page 11, line 6 from bottom.

R2Q13- The comparison with the literature does not take into account the differences between countries and the differences between working and non-working and/or general population into account. Because this is a major issue – also mentioned in the introduction – this should be better taken care of in the discussion. How do the French workers compare to other high income countries?

R2Q14- What is the difference (or correspondence) between multi-site MSS and widespread pain?
MS-MS = définition très grossière basée sur les MS déclarés par les sujets au moyen du NORDIC (avoir 2 sites anatomiques ou plus symptomatiques sur les 9 sites étudiés)
Widespread = définition precise selon les critères de l’ACR basée sur l’examen Clinique de points anatomiques précis …
Widespread pain is a very specific multisites musculoskeletal symptoms:
- multisites musculoskeletal symptoms = to declare musculoskeletal symptoms on two sites or more ;
- widespread (multisites) musculoskeletal symptoms = to declare widespread musculoskeletal symptoms, The “widespread” aspect of the symptoms being defined in a variable way according to the studies. Yourself had used four different definitions (combining pain in the upper extremities, lower extremities and back, and either neck pain or pain at left and right site of the body) in your paper « Musculoskeletal pain in the Netherlands: prevalences, consequences and risk groups, the DMC(3)-study. Pain 2003, 102:167-178».
- widespread pain (WSP) = to have widespread musculoskeletal symptoms identified during a precise clinical examination based on the criteria of the American College of Rheumatology: pain present in two contralateral quadrants of the body above and below the waist and in the axial skeleton.
We made some modifications in the paper to distinguish better these various notions: multisites MS, widespread (multisites) MS or widespread pain (WSP).
Modified article (v3): page 5, lines 5 and 6 from top; page 15, line 2 from top ; page 15, lines 2 and 3 from bottom; page 16, line 1 from top.

R2Q15- The comparison with the literature should be more concise and focused.
As requested, we tried to shorten this section but more information was requested by another reviewer: we thus preserved this part of the discussion such which.
R2Q16- If the difference between men and women is so important why not make it part of the research question?

We agree with your remark but this difference between men and women is known, that is why our question of research did not include the study of this difference. On the other hand, we took into account it in our analyses and the display of the results (analysis stratified on the sex).

R2Q17- The sentence on page 14. “Indeed, as the sites (…) to localized MSSs” is unclear.
In answer to your remark, we have to cut this sentence in two sentences.
Modified article (v3): page 14, lines 1 to 4 from bottom

R2Q18- The lower half of the text on page 15 should be deleted.
To answer the remark R2Q1, this part of the discussion was kept but synthetized and cleaned to illustrate better the consequences of multisites musculoskeletal symptoms.
Modified article (v3): page 15, last paragraph (from bottom).

Tables
R2Q19- Too many tables, also figures can be used to present the data. For table 2 this might be a good idea. Remark: the figures in table 2 are among those with 30+pain, the N mentioned should be on the participants with 30+pain.
We agree with your remark and we made the wanted modification.
Modified article (v3): figure 1.
**Title:** Prevalence of multi-site musculoskeletal symptoms: a French cross-sectional working population-based study

**Reviewer's report / Version:** 2

**Reviewer 3:** Praneet Pensri  **Date:** 11 November 2011

**Major Compulsory Revisions**

**R3Q1.** Please describe the definition of musculoskeletal symptoms (MSSs) used in this study. Did they mean only symptoms from work-related musculoskeletal disorders? Was it possible that the cause of MSSs involving activities of daily living or sports?

The definition of musculoskeletal symptoms (new abbreviation = MS) used in this paper does not take into account the origin of the symptoms: to declare musculoskeletal symptoms for at least a site during the filling of the auto-questionnaire of the NORDIC. Furthermore, further to the remarks R1Q1 and R1Q3 of the reporter 1, we eliminated the “work-related musculoskeletal disorders” notion which appeared in the Background section of the paper.

**R3Q2.** Did the study have the exclusion criteria when recruiting subjects?

*No, there was no criterion of exclusion.*

**R3Q3.** The study methods warrant further description: it is not clear that MSSs reported by each worker in the questionnaire were clinically confirmed by occupational physicians. And did all participated physicians perform similar physical examinations?

The auto-questionnaire proposed in the waiting room included the other numerous questions that those of the NORDIC and a clinical examination standardized was also realized within the framework of this study in working population (Roquelaure Y, Ha C, Leclerc A, Touranchet A, Sauteron M, Melchior M, Imbernon E, Goldberg M: Epidemiologic surveillance of upper-extremity musculoskeletal disorders in the working population. Arthritis Rheum 2006, 55:765-778 / Ha C, Roquelaure Y, Leclerc A, Touranchet A, Goldberg M, Imbernon E: The French Musculoskeletal Disorders Surveillance Program: Pays de la Loire network. Occup Environ Med 2009, 66:471-479). The only data exploited in this article are the ones of the questionnaire NORDIC because we wanted to take into account MS whole body while our clinical examination concerned only certain precise anatomical sites (upper limbs and algodystrophy of the knee). Thus:

1) No, MS reported by each worker in the questionnaire weren’t clinically confirmed by occupational physicians;

2) Yes, all participated physicians performed similar physical examinations but this is without relationship with the data presented in this article.

**R3Q4.** In the results section, it is indicated that prevalence of MSSs increased with age (page 9), but the data related to this notion were not shown. If the authors would like to present this result, please provide more relevant information and discuss the result.

*We agree with your remark but these results were only evoked to underline that we find well this expected result. As this result does not present a major interest in this article, we preferred to delete it.*
R3Q5. It would be of important to present the prevalence of multisite MSSs and MSSs lasting more than 30 days (page 9, paragraph 3) in a tabular format since the results were the main outcome of the study, it should be clear and easy to follow for readers.

We agree with your remark and we made the wanted modification.

Modified article (v3): page 9, first line of Prevalence of multisites MS section, table 1.

R3Q6. Discussion on the prevalence of MSSs in various anatomical regions is needed.

As requested, we tried to complete this section but another reviewer asked us to be more concise and focused: we thus preserved this part of the discussion such which.

R3Q7. The limitation of the study is needed.

The main limits of this program of surveillance are the ones that we evoked: the lack of representativeness for farmers and self-employed workers, the reporting bias and the fact as this study is retrospective. But effectively, in a concern of conciseness, we chose not to take back in detail all the limits of the study already widely presented in preliminary publications (Roquelaure Y, Ha C, Leclerc A, Touranchet A, Sauteron M, Melchior M, Imbernon E, Goldberg M: Epidemiologic surveillance of upper-extremity musculoskeletal disorders in the working population. Arthritis Rheum 2006, 55:765-778).

Minor Essential Revisions

R3Q8. In the results section, it is stated that the prevalence of MSSs in the neck, shoulder, wrist, upper back, and knee or lower leg between men and women were significant difference (page 9). It could be helpful, if the legend to table 1 would include the significance level.

We agree with your remark and we made the wanted modification. Attention, the most frequent five sites, except the low back, are: neck, shoulder, wrist, upper back and knee or lower leg but, like that is mentioned page 9 ("with the exception of the knee or lower leg"), the significant differences between men and women concern only four first ones (neck, shoulder, wrist, upper back).

Modified article (v3): table 1.

Discretionary Revisions

R3Q9. In the methods section, it would be better to move Paragraph 3 (pages 6) presenting subjects ‘characteristics (in study design and population section) to the beginning of the results section. Also, it would be of interest to demonstrate the subjects ‘characteristics data in a tabular format.

We made the modification asked for the text but we did not add a table to present the characteristics data of the sample because these data were already the object of preliminary publications (Roquelaure Y, Ha C, Leclerc A, Touranchet A, Sauteron M, Melchior M, Imbernon E, Goldberg M: Epidemiologic surveillance of upper-extremity musculoskeletal disorders in the working population. Arthritis Rheum 2006, 55:765-778).

Modified article (v3): page 6 deletion, page 8, first line from top and page 11, lines 5 to 9 from bottom.