Reviewer's report

Title: Depression and Anxiety as major determinants of neck pain: a cross-sectional study in general practice

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Reviewer: Swenne van den Heuvel

Reviewer's report:

Major compulsory revisions

In general, the study deals with an interesting subject, the relationship between psychosocial factors and musculoskeletal symptoms, in the present case psychological distress and neck pain. However, the objectives of the study need some clarification, in particular the second objective (with regard to selection criteria). As it is formulated now, the methods of the study do not seem fit to answer them. Therefore, the conclusions of the article are premature and cannot be drawn on the basis of the results of this study. Furthermore, the writing needs improvement. Finally: it is interesting to hear follow-up surveys are under way. Longitudinal data might be more fit for some of the study objectives.

Major remarks:

1. The NPAD measures neck pain and limitations involved. Part of it refers to emotional factors. The authors write the NPAD supports constructs of mood and neuroticism. I wonder if an association between this scale and a scale measuring anxiety and depression is not too obvious.

2. In the study two objectives are mentioned: (1) to identify socio-demographic, psychometric, medical history, and health-promoting lifestyle factors which might interfere with neck pain, and (2) to provide selection criteria for patients who might rather benefit from psycho-social interventions than from medicinal therapies. A peculiarity of the structure of the article is that the background part is written more or less like an introduction to the second objective, while the analyses described in the article are aimed at the first objective. It is unclear how the study results could contribute to the provision of selection criteria, as mentioned in the second objective. It is clear that a high pain score on the NPAD is associated with depression and anxiety. Apart from that this might be caused by the fact that the NPAD measures a certain degree of psychosocial distress itself (see previous point), it is not clear if the neck pain is caused by psychosocial distress or the other way round. It is certainly not clear what intervention is the most proper in subjects with this combination of a high NPAD score and high psychosocial distress. For that purpose a RCT design is needed. The conclusion that general practitioners should use instruments to measure depression and anxiety, in order to identify patients in need of a psychosocial intervention is totally unfounded. The study results produced no results refering to causes of the symptoms, nor to effectiveness of treatments or interventions.
3. The authors state that the study population is likely to be representative for the typical chronic neck pain patients seen in primary care. However, the non-response was very high and I don’t see results of a non-response analysis in the article.

4. The relation between neck pain (or broader musculoskeletal pain) and psychosocial distress has been examined before. I miss a comparison with previous literature.

5. I assume physical factors, such as work-related exposure, are not included in the questionnaire. Consequences should be considered in the discussion, and not only the remark that the lack of these factors is a limitation.

6. Differences between the univariate and multivariate analyses should be discussed, in particular the difference with regard to social support (5.19 crude, -0.49 adjusted!).

Minor essential revisions

1. In the abstract and in other parts of the text as well, the authors state that current therapies focus on medicinal interventions. It is not clear where this statement is based upon. For instance in the recommendations of the Bone and Joint Decade Task Force, other therapies were mentioned as well, although none of them were of a psychosocial nature.

2. Many statements in the article are probably based on the literature, but have no reference. For instance in the discussion section: “psychosocial factors are closely related to cultural and regional factors”.

3. The drawbacks of medicinal therapies as described in the background, are not exclusively reserved for this kind of therapy. Psychosocial interventions have their drawbacks too. In general, this part is written a little too toughtless.

4. In which form the variables are added to the model, should be described more clearly. Some variables seem to be dichotomized first. The reasons why should be described as well.

5. It is unclear how much time passed by between the visit to general practice and the questionnaire.

6. In “demographic characteristics of the study sample” it was mentioned that some participants had had previous surgery or a previous injury. It is unclear what was meant with previous. Previous to their visit in March 2005-April 2006 to general practice or previous to the questionnaire.

7. Apparently, the authors used another measure (or measures) for neck pain as well. In table 1 the frequency of neck pain was presented and in the results of the descriptive analysis it was mentioned that a higher neck pain frequency was related to a higher NPAD-score. This variable should also be described in the methods section.

8. The authors carried out univariate and multivariate linear regression analyses. In addition they carried out analysis of variance. It should be explained why this step was added.
9. Results with regard to previous cervical spine surgery only refer to 7 subjects! Due to other missing values the number of subjects in the adjusted analyses may even be smaller. The difference between crude and adjusted analyses are large. I think it is not sound to include this variable in the analyses.

Discretionary revisions

1. In the abstract the NPAD-d is mentioned, without being explained in the previous text.
2. In “Description of the study sample” a response percentage should be given.
3. About the imputation of missing NPAD scores: I assume this was done to increase power. Did the authors carry out a sensitivity analysis or analyses with the unimputed data as well to check for differences?
4. In general: the wording of concepts should be checked. For instance the next three points:
5. At several places in the text was referred to “chronic patients”. The term “chronic” should be explained.
6. The last sentence of the conclusion: “For successful long term results it is essential to ….”. It has not been mentioned before that results should be considered in the long term. Moreover, the study results do not give indications about results, and certainly not about the period in which they will occur.
7. The first line of “Crude linear regression models”: “In order to investigate associations of clinical markers with neck pain,...”. I am not sure what is meant with clinical markers, but to me the term suggests more objective data like blood test results.
8. At first sight it is not clear what the numbers in table 3 represent. Something should be added in the title like: “depression and anxiety scores for different levels of neck pain”.

**Level of interest:** An article of limited interest

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

I declare that I have no competing interests