Reviewer's report

Title: Gender differences in patients with dizziness and unsteadiness regarding self-perceived disability, emotional distress, symptom severity and its associations

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Reviewer: Christoph Best

Reviewer's report:

Comment (1) Abstract:
The abstract is concise and delineates the main points of the study. However, we would recommend the write “the genders did not significantly…” instead of “sexes” (Minor Essential Revisions).

Comment (2) Introduction:
We would suggest re-organizing the introduction more clearly:
Within the first part of the introduction descriptions of the rates of prevalence of vertigo and dizziness as well as prevalence numbers for coexisting anxiety and depression as well as further psychological distress factors should be given in general.
Within the second part background on gender differences with respect to psychological strain as anxiety and depression should be given.
This will then automatically lead to the main questions raised by the authors. As it is at the moment, the authors start with general prevalence on vertigo and dizziness, switch to a differentiation of the HADS between the genders, go back to general information on anxiety and depressive prevalence in vertigo and dizziness patients and then go back again to gender differences. This should clearly be separated, it will read much easier and the succeeding main questions of the study will then be presented as logical results of the objectives. With respect to the reader, this will improve the introduction (Minor Essential Revisions).

Comment (3) Introduction:
At the end of the introduction, the authors state their main objectives:
(2) Whether female/male differ in the prevalence of severe disability, anxiety and depression. (3) Whether female/male differ in the associations of these aspects.
What exactly is the difference between objective (1) and (2)? Do the authors differentiate between self-perceived disability… and prevalence of disability? And if the authors do differentiate between these two, what is the reason? We would suggest, to reduce the main objectives to differences between the genders with
respect to disability, anxiety and depression as main objective. This should than be stated as primary end-point. In a second step, the differences between the associations of the above mentioned aspects should be added as secondary and pure descriptive end-point.

If the authors will not change the main objectives (1) – (3) please explain why! (Major Compulsory Revisions)

Comment (4) Methods:
In the description of the inclusion criteria the authors state, that the problems had to be “associated with a vestibular disorder”. What does that mean? And what does “problems” mean? Does this mean, that the symptoms and complaints of the patients had to be caused by a vestibular disorder? If so, please change the writing of the inclusion criteria. The term “problems had to be associated with vestibular disorders” is in no way scientific and does not reflect a distinctive diagnostic procedure! (Major Compulsory Revisions)

Comment (5) Methods:
In the exclusion criteria section, the authors mention psychic disorders as exclusion criteria. How were psychic disorders diagnosed? On the basis of the clinical impression? On ICD-10 criteria? By SCID interview? This needs to be defined much more clearly, especially, as the authors analyse data from patients with high rates of anxiety and depression. The likelihood of co-existing manifest psychiatric disorder therefore is extremely high and the diagnostic procedures have to be described more in detail! (Major Compulsory Revisions)

Comment (6) Methods:
In the section of the statistical analyses it is not described, if a correction for multiple testing was performed. If such a correction was not performed, it has to be stated, that all results are descriptive purely, and significance levels do not reflect results with respect to a hypothesis controlled calculation, but are presented to describe possible effects! (Major Compulsory Revisions)

It is not mentioned, if the main objectives were planed as end-point hypothesis or if the overall analysis of the data was planed as a descriptive analysis. This information is mandatory! (Major Compulsory Revisions)

Comment (6) Results:
The major flaw within the presentation is the character of analyses. On table 1 seven statistical tests have been performed. The strongest effect is described with a p-value of 0.018. Applying a Bonferroni adjustment to these results, not a single significant p-value will remain. Therefore, it is absolutely mandatory to mention, if the adjustment for multiple testing was done or if the results are presented as descriptive analysis. Furthermore, the diagnostic classification of the patients is not detailed. The authors only differentiate between unilateral peripheral, bilateral peripheral, central vestibular and multifactorial disorders. The present 36.1% of central vestibular disorders, which is in contrast to 13.2% of central vestibular disorders in a large analysis from Strupp and co-workers
(Strupp et al., 2003). In this analysis, only 3.6% of the patients showed bilateral vestibular pathology, while the authors present 8.4%. Therefore, the distribution to the diagnostical subgroups is contradicting previously data. We therefore recommend, to show a detailed diagnostical classification. (Major Compulsory Revisions)

On table 2 we count 74 statistical significant tests. Again, a clarification is needed, was this adjusted for multiple testing, of are the results descriptive. (Major Compulsory Revisions)

Comment (7) Results:

On table 3 and 4 data from 200 patients is presented. The authors included 202 patients in their analyses. Where are the 2 missing male patients? (Major Compulsory Revisions)

In addition, table 4 needs some design work over. Especially the categories anxiety and depression on the lower section are confusing, it presented that way. (Minor Essential Revisions)

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'