Reviewer's report

Title: Magnitude and concurrence of anxiety, depression among attendees with multiple sclerosis at a tertiary care Hospital in Oman

Version: 3 Date: 26 February 2015

Reviewer: Angela Senders

Reviewer's report:

Thank you for the opportunity to review this manuscript. The authors report the prevalence of anxiety and depressive symptoms amongst people with MS presenting to a tertiary care center in Oman. While the prevalence of anxiety and depression in MS has been reported in western societies, estimates have not been generated Arab populations. Understanding the prevalence of mental health concerns in MS is necessary for appropriate diagnosis and treatment and this article is important for clinicians and researchers, alike. The comments here are meant to aid the authors in strengthening the manuscript further.

MAJOR COMPULSORY REVISIONS

1. Do the authors have data on why the people with MS were presenting to clinic on the day on which they partook in the study? Patients present to clinic for regular monitoring, but they also present during relapse, symptom worsening, or other health concerns – all of which may influence their anxiety and depression symptoms. If time since last relapse and/or presenting complaints can be reported it would enhance the results. Otherwise authors should address this limitation in the discussion.

2. Line 135: Using the terms convenience and consecutive to describe sampling techniques is confusing. Was everyone with a diagnosis of MS who presented to the clinic approached to participate (consecutive)? Or were people approached consecutively only on certain clinic days when study staff were present (convenience)? Please clarify.

3. Line 149: Why were people with a recent diagnosis with RRMS excluded? Please justify for the reader and define “recent”.

4. Line 156: This is the first time the “healthy subjects group” appears in the manuscript. They should be introduced in the abstract and mentioned in the study design.

5. The following detail for the control group must be provided: inclusion/exclusion, where they were recruited from and how, and how data was collected and by whom.

6. Please disclose how many people with MS were recruited. How many met inclusion criteria and consented? How many met inclusion and denied participation? How many were excluded and for what reasons?

7. The methods section in general should be revised to more clearly describe
exactly what happened. E.g. Was every person who presented to the clinic with a diagnosis of MS asked to participate, and if they consented were they screened, officially diagnosed by McDonald Criteria, and administered the MSSE, HADS, and EDSS all in one visit?

8. Lines 213/214: The HADS is not a diagnostic instrument. Therefore, all of the language throughout the manuscript that claims participants had anxiety or depression or a mood disorder based on these results should be revised to say they had anxiety and/or depressive symptoms. The methods section (Line 168) states that scores higher than 7 were “operationalized as having a propensity towards affective dysfunction”. But the authors proceed to talk about results as if participants who scored > 7 had anxiety or depression. Please clarify in the methods section what scores > 7 mean and what scores > 11 mean. Then, temper language throughout so as to not diagnose a condition based on the HADS.

9. Line 253: 50% is overstated as 50% had a score greater than 8, only 39% were > 11, and the method sections defines > 7 on the HADS as a propensity toward depression. Again, the manuscript needs more information on the clinically acceptable cutoff for HADS. Additionally, the authors do not know if people that scored above an 8 would “endorse themselves” as being depressed – this is a screening tool. Please temper language.

10. Line 261: Again, >8 on the HADS does not diagnose anxiety disorder.

11. Line 265: This study didn’t measure “rate” nor did it formally measure “mood disorders”, please reword.

MINOR ESSENTIAL REVISIONS

1. Line 60: The percentage of people scoring > 5 on EDSS is inconsistent between abstract and Table 1, please address.

2. Lines 63-65: I’m not sure how the association between variables and secondary progressive disease was made when only one person in the sample had SPMS. Suggest removing this sentence or reword for clarity.

3. Line 66: It sounds like the authors are suggesting that disability results from anxiety and depression, which is a strange hypothesis and isn’t supported by the data. Wording?

4. Line 159: Participants were “requested” to provide written consent? Or participants provided written consent. Please clarify.

5. Line 213: Using the terms “cases” and “controls” can be confusing as this is not a case control study. It seems the study design is a cross-sectional survey of people with MS and the results are compared to a cross-sectional survey of people without MS. Please include a design statement earlier in the paper and consider revising the language regarding “cases and controls”.

6. Why was disability status not adjusted for as a potential confounder? Based on the results in Table 5, it looks like people with more advanced disease may be skewing the results. Strongly suggest reanalyzing data with EDSS score in the model and seeing if it changes the results.
7. Table 5: How was standard deviation generated for 1 participant with secondary progressive disease?

8. Table 5: Please carefully review p values for accuracy, the p val for HADS Anxiety for education level seems awfully small...

9. Table 6: Why is interferon use not represented in this table? We know that it is associated with depression, so it would be valuable data to include here.

10. Titles should allow tables to standalone for interpretation without text, several need revision.

11. Lines 293 – 296: Is the second sentence of this paragraph referring to a comparison between people with MS who scored high on anxiety and people with MS who scored high on depression? Or is it referring to a comparison between people with MS who scored high on both anxiety and depression and people who don’t have MS who scored high on both measures? Please reword for clarity because I don’t see where this analysis was conducted in the results section.

12. Line 312: Please clarify what you mean by ‘no research culture’ and how a lack of research culture contributes to the study’s limitations.

13. Line 316: This study did not test psychometric properties of the HADS – or at least didn’t report them - please modify language.

14. Line 321: Again, this study didn’t measure “rate” nor did it formally measure “mood disorders”, please reword.

15. Additional limitations should be stressed:
   a. HADS provides a quick screen, not a diagnosis.
   b. Small sample size for predicting prevalence, larger studies are needed.

DISCRETIONARY REVISIONS

1. Lines 69-70: While I don’t doubt that more psychosocial services are needed to address mental health concerns for people with MS, it feels like a leap to make from this small preliminary study. Consider calling for a larger more definitive study to adequately determine prevalence first, so that the need for services can be better estimated.

2. Lines 104-106: Sentence is difficult to interpret. Is the social deficit not forthcoming because it hasn’t been investigated? Recommend rewording for clarity.

3. Line 108: Suggest replacing “affective disturbance that mimics depression” with “depressive symptoms”.

4. Line 129: Coping styles is just thrown in and feels out of place in the context of the rest of the paper. Suggest the authors continue to flush these ideas out and revisit in the discussion or remove altogether.

5. Lines 150 and 203 are repetitive statements of IRB approval.

7. Table 6: Please include the n so readers don’t have to refer back to table 4 to find it.

**Level of interest:** An article of importance in its field

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

**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 interests.