Reviewer's report

Title: Prevalence and Impact of Depression and Anxiety in Outpatients With COPD in China

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Reviewer: Milo Puhan

Reviewer's report:

Lou et al provide a report on the prevalence of symptoms of anxiety and depression of COPD patients in China. It is important to have epidemiologic data on comorbidities in COPD and the large sample size is certainly a compelling argument for this paper. But there a number of points that need clarification:

Major

1. It is not reported where the COPD and healthy controls were recruited from. For prevalence studies it is of utmost importance to describe the source population and how study participants were sampled from that source population. Also, there is no information at all about the selection of healthy controls where the same principles apply. Finally, the target population to which the results should apply is also not defined. Therefore, a detailed description of the source, study and target population is necessary.

2. It appears (because of equal n and similar age and sex distribution) that healthy controls were matched for age and sex. Please explain if this is the case and whether matching may have introduced a selection bias.

3. Did all participants (COPD and Healthy) provide oral and written informed consent and did ethical boards approve the study? Please provide the name of the ethical board together with the approval ID.

4. It is not entirely clear if all variables shown in Table 3 were included in the same logistic regression model. If so I have some concerns because of collinearity since some variables are in the model twice (as single variables and in BoDE index). It might be wise to show one model with all single risk factors and one where FEV1, BMI, dyspnea and 6MWD are incorporated in the BODE index. Also, please explain if some variables were excluded and explain why. It would be preferable not to exclude any variables and report all coefficients irrespective of statistical significance.

5. The title is a bit misleading because the study did not assess the impact of anxiety and depression but the impact of various determinants (FEV1, 6MWD etc) on anxiety and depression (thus depended and independent variables mixed up).

Minor:

6. The BODE index is a poor index in its original form because the point system and quartile do not reflect the underlying regression coefficients of the statistical
model. A recent paper showed poor predictive performance metrics in independent validations and suggested an updated score system that better reflects disease severity (Lancet 2009; 374: 704–11). It is likely that the associations found in this study would be even higher with the updated BODE index.

7. It might be more appropriate to refer to symptoms of depression and anxiety rather than to depression and anxiety since the HADS, although a good questionnaire, does not really allow for an accurate diagnosis but for a quantification of symptoms.

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: none