Reviewer’s report

Title: Knowledge gaps in patients with COPD and their proxies

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Reviewer: Luis Puente-Maestu

Reviewer's report:

This is a negative study comparing COPD knowledge by patients and their proxies

Limitations:

1) It is a negative study and the assumptions used to calculate the sample size (i.e. if the study has a reasonable statistical power) are not shown.

2) The main outcome is a non-validated questionnaire.

3) The secondary outcome "insufficient knowledge" is not defined. Moreover it seems to be a subjective appraisal by the investigators.

4) The statistical treatment of the variables may not be appropriate.

5) Ninety seven percent of the participants lived together with a partner of the same age. The reader does realize why the program is called "home sweet home", however if patients were selected in order to have a matched partner for comparisons, they may not be representative of other COPD populations, particularly those with poorer socioeconomic situations. This has to be discussed in the limitations section of the discussion.

Specific

1) 78 "A priori, we hypothesized that both patients and proxies have insufficient knowledge about COPD" the authors may want to define insufficient for they readers.

2) 98 "no exacerbation of COPD or hospitalisation <4 weeks preceding enrolment". This sentence should be rewritten without the < 4. Do the authors mean in the 4 week before the enrolment?

3) 107. Self-reported. Either if the filled out a questionnaire or when they were interviewed they recalled certain comorbidities, "self" is redundant. The information provided by the patient is always "self-reported" (i.e self-reported age, self-reported gender, self-reported previous participation in a rehab program and so on.)
4) 111. "Knowledge of patients and proxies was assessed using 34 statements about generic health and COPD-related topics. A multidisciplinary pulmonary rehabilitation team formulated all these 34 statements" while the opinion of the experts and the evaluation of the understand ability of the questionnaire are fist necessary steps to define the content and to assess the face value of a questionnaire, other metric properties (construct validity, internal validity and so on) should have been established to consider it as validated. Among the metric properties it is of the most importance the reliability (At least the short term reproducibility). Has this been established for this questionnaire?

5) 113. "in authentic patients in a pulmonary". Actual or real may fit better, but just "COPD patients participating in a pulmonary rehab program sounds even more graceful". (The authors should specify that they were COPD patients)

6) 118. "while continuous variables were tested for normality and are presented as mean and standard deviation (SD)" A continuous variable is a variable that has an infinite number of possible values, obviously the questionnaire score is not a continuous variable. Moreover the score of the questionnaire is not even a scale variable, rather it is an ordinal variable (i.e. it is fair to assume that a person answering 10 questions knows more about COPD than another one answering 5, however, we cannot assume that he/she knows exactly twice as much) thus, the authors have to prove that the distribution of the knowledge score is normal (an describe how this was done (i.e. Shapiro-Wilk or any other test) this is relevant because if the normality of the distribution can't be assumed, the proper statistics to describe the variable would be the median and the interquartile range and neither the linear regression nor the t-test would be warranted.

7) 126 "The level of significance was set at p≤0.01" To decide if a variable is included in the model it is more common to use 0.1. Why did you use 0.01?

8) 127 "A sample size calculation was performed for the primary objective of the Home Sweet Home study, and described in the research protocol" the authors need to be more specific. They have to state that the sample size was calculated for the objective of the present study (i.e compare the knowledge about COPD between patients and proxies with their questionnaire ) and if they want to be kind to the readers to specify the expected difference in proportion of correct responses, if the hypothesis was uni- or bilateral and the alpha and beta errors assumed to its calculation

9) 136. "Age, gender distribution and GOLD grade were comparable between included patients and eligible patients who refused to participate because of various reasons (Figure 1)". This is not shown. If the authors have the information, it would be good to share it with the readers. A rate of rejection of 2/3, while understandable in clinical research, may bring about doubts about the actual population studied and jeopardize the external validity of the study.

10) 141 "self-reported" see my previous argumentation
11) 141 "Mean age" This reader would have anticipated differences in age between patients and their proxies. In my practice in among 150 COPD there would be quite a few more living with or cared by younger relatives or professional caregivers than in the sample of the authors. The investigators need to justify that they did not selected the patients to have a living partner of the same age or any other selection bias rendering (happy) golden age couples.

12) Table 2 see comment n 118

13) Table 4 describe in the methods the statistic test used for multiple comparisons and for paired contrasts.

14) Table 5 the authors have to describe in the methods the operative definition "Level of education"

15) 201. "The results in this paper endorse the hypothesis that proxies of patients with COPD as well as patients themselves have insufficient knowledge about COPD". Define insufficient in the methods and the basis of the threshold score.

16) 236 "Another remaining question is if current education programs are sufficient in this group of patients. At least, all patients with mild to very severe COPD should be given the opportunity to participate in an education program or be referred to a pulmonary rehabilitation program, in which education is an integral part.[3, 24] Indeed, two hours of education, without a pulmonary rehabilitation program, in a primary care setting increased disease specific knowledge in patients with COPD.[24, 25] In addition, education reduced the need for rescue medication by more than 50% and for visits to the general practitioner.[26] On the other hand, education without other components of pulmonary rehabilitation were of limited value for patients' disease understanding.[27] A systematic review showed the wide variation in the content and method of delivery of educational interventions in patients with COPD.[28] In the "official American Thoracic Society/European Respiratory Society statement: key concepts and advances in pulmonary rehabilitation", a list of relevant educational topics is provided.[3] The reader shares with the authors their preoccupation for COPD patient's education; however this section is speculative and not directly related with their results and therefore should be eliminated. The authors should describe their main findings, compare their results with those of others, describe and justify the limitations of their study and identify testable scientific questions uncovered by their results.

**Are the methods appropriate and well described?**

If not, please specify what is required in your comments to the authors.

No
Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

No

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