Reviewer’s report

Title: The effects of patient education programs on compliance with medications among asthma and COPD patients: A propensity score matching with a difference-in-difference regression approach

Version: 2
Date: 28 January 2015

Reviewer: Paolina Weidinger

Reviewer’s report:

This is an article about a very important area. However, this manuscript needs to be sharpened up and revised extensively before being published. There is actually no section for Discussion in this manuscript, and before even considering being published, there should be a proper discussion; presenting main findings, comparing with previous work with a short conclusion based on the results of the study. Please find further comments below.

Major compulsory revisions

1. The abstract:
   - The aim needs to be specified, in its current form there is no aim in the abstract. There is a sentence between “Background” and “Methods” that the authors’ maybe intended to be some sort of “aim”; however in that case, it is not same “aim/objective” as at the end of the background in the article.
   - The result section needs to be revised and should include more of the results. In its current form, the result section consists of two sentences and is more as a conclusion.
   - The conclusion should focus more on the results of the study

2. Background: Using dispensed medication data, the method used in this study is not the traditional way of measuring patient compliance with medication. If the intention was to evaluate the effect of the program, why was not a traditional way of measuring patient compliance used? To me this article is not about compliance. The authors should consider rewriting the title using the words “utilization of drugs” or “medication costs” or something like that instead. If the authors decide to keep the title, the background needs to include more about compliance and the different methods for measuring compliance. And maybe refer to previous work using the same method used in this article? Moreover, since this is an intervention, maybe the authors should consider mentioning more about interventions done previously in this area? (“Interventions for enhancing medication adherence” by the Cochrane collaboration)

3. Background: Last paragraph; the objective/aim needs to be made more clear for the reader, and should be the same in the manuscript and the abstract.

4. Methods: In the method section under the heading datasource and intervention sample, the drop out from the initial 271 patients to the remaining
193 patients is described. However, the propensity score matching procedure excluded a further 8 patients for which no match were found. Did the final intervention sample then consists of 185 individuals? Please describe. Are there any power analysis done in this study?

5. Method: Why was the results presented with mean and SD when the data clearly not is normally distributed?

6. To me, the result section needs to be revised thoroughly. In its current form, much of the information belongs to the Methods section. There are only a few sentences that actually belong to the results section.

7. The placing for each figures and table is not specified in the result section of the manuscript.

8. Please refer to figures and tables when you present your results. Where is the results presented in the last paragraph of the results taken from (“The intervention increases the dispensation of chronic management drugs from 1.4 to 1.6 units”)? What do the authors mean by unit in this case?

9. Discussion: There is no section for discussion in this manuscript! Instead there is a voluminous conclusion. As a start, the whole last paragraph of the conclusion could be moved and put under a section for discussion, which thereafter needs to be further expanded.

10. There is one sentence in the above mentioned paragraph, about strengths and limitations. This needs to be further expanded and put under a separate heading.

Minor essential revisions

1. Background: Second last paragraph; move “Main results of this intervention….” to begin the Discussion with instead.

2. Background: Last paragraph; delete this paragraph. It does not belong to the background and is unnecessary.

3. Methods: Outcome variables: The medication/drugs measured in this study could be specified according to ATC-group, either in the text section or in a table. Which drugs are considered in which group?

4. Methods: Data-source and intervention sample: are there any references to the public data sources? Could be useful for the reader and give further understanding.

5. Results: Delete the first paragraph, it is unnecessary.

6. Is the intervention made by the authors or was the authors put in at a later time-point? To me this article give you inconclusive messages. Sometimes you get the impression of the first and sometimes you get the impression of the last. Needs to be looked over and be conclusive.
Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

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