Reviewer's report

Title: Validation of the Inhaler Adherence Questionnaire

Version: 0 Date: 27 May 2020

Reviewer: Kristin Carson-Chahhoud

Reviewer's report:

Thank you for allowing me to review this topical and interesting manuscript. I have several recommendations below for consideration.

References are quite dated for the background. For example, second sentence of background about research demonstrating that physicians have difficulty accurately identifying which of their patients are likely to be non-adherent, is 23 and 15 years old (1997 and 2005). Similarly, second paragraph reports that electronic medication monitors provide the best information about medication adherence for inhalers, but this reference is from 2002 (18 years old). It begs the question, are these issues raised still a problem (which they obviously are) but is this still the recommended approach? There has been a lot of research recently done on this topic that is no doubt more current than examples provided. Similarly, barriers and enablers to physician identification of non-adherence has changed over time (e.g., time and resource issues, perception that it is someone else's job to assess inhaler technique (e.g., nurse/pharmacist) etc.) these should be discussed.

On page 3, authors report that some preliminary evidence about construct and discriminative validity of 6-Item Inhaler Adherence Scale has been published, but this is from 1991 and 1994. Why is the "preliminary" evidence so dated and why has this note been followed up before now?

Page 5, methods: How was asthma diagnosis determined, doctor diagnosis, GINA criteria? This should be specified.

Can a patient 'fudge' results by using inhaler multiple times in a row on one day to increase dose counter if they forgot to use it?

Do you have any information about compliance based on asthma severity or other demographic features? Or alternative, recommendations for future research based on what information you do have available?

Compliance of 40.5% appears low. Although this isn't the purpose of your validation study, is it what you were expecting (does it compare with other recent studies about compliance)? This may be a useful point to briefly mention in discussion, and points to a need for future research to examine compliance as an issue needing to be addressed to improve asthma management.
Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.
Yes

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.
Yes

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.
I am able to assess the statistics

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