Author’s response to reviews

Title: Importance of Medical Data Preparation in Predictive Modeling and Risk Factor Discovery for the Frailty Syndrome

Authors:

Andreas Hassler (a.hassler@hci-kdd.org)
Ernestina Menasalvas (emenasalvas@fi.upm.es)
Francisco Garcia-Garcia (franjogarcia@telefonica.net)
Leocadio Rodriguez-Manas (leocadio.rodriguez@madrid.org)
Andreas Holzinger (a.holzinger@tugraz.at; andreas.holzinger@medunigraz.at)

Version: 3 Date: 07 Jan 2019

Author’s response to reviews:

Dear Reviewer,

We really appreciate your in-depth comments, corrections, and consideration of the manuscript. We have revised the manuscript as suggested. We hope the improvements in language and content are satisfactory. A point by point response to your comments is provided below.

Editor Comments:

Please accept our apologies for the delays you have experienced with your manuscript. We thank you for your continued patience. Please address the comments of the reviewer and the following requests to ensure your manuscript is in line with our editorial policies.

1. Authors' Contributions:

Please note that based on the current authors’ contributions section, not all authors automatically qualify for authorship.

We ask that you ensure that author contributions are in line with the ICMJE guidelines (below), and that all listed authors have performed all four points specified below.
An 'author' is generally considered to be someone who has made substantive intellectual contributions to a published study. According to the ICMJE guidelines, to qualify as an author one should have:

a) made substantial contributions to conception and design, or acquisition of data, or analysis and interpretation of data; AND

b) been involved in drafting the manuscript or revising it critically for important intellectual content; AND

c) given final approval of the version to be published. Each author should have participated sufficiently in the work to take public responsibility for appropriate portions of the content; AND

d) agreed to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

Anyone listed as an author must be included in this section. If you choose to change your author list you will need to fill out a change in authorship form and send it by email to the Editorial office to be approved by the Editor. The form can be found here: https://www.biomedcentral.com/getpublished/editorial-policies#authorship.

Anyone who contributed towards the article who does not meet the criteria for authorship can be acknowledged in the ‘Acknowledgements’ section.

Thanks for the comment. We have checked again the journal’s criteria and updated the description of each author as they all qualify as authors.

2. Acknowledgements:

Authors should obtain permission to acknowledge from all those mentioned in the Acknowledgements section. If no acknowledgements are necessary then please state 'None'.

Permission of the acknowledged has been obtained and this section has been adapted accordingly.

3. Copy-edit:

I'm afraid the quality of the English used throughout your manuscript does not currently meet our requirements. We recommend that you ask a native English speaking colleague to help you copy-edit the paper. If this is not possible, you may need to use a professional language editing
service. Use of an editing service is neither a requirement nor a guarantee of acceptance for publication.

Thank you for your feedback. Language has been checked by a native speaker and corrections have been made.

Reviewer reports:

Klaus-Hendrik Wolf, Dr.-Ing. (Reviewer 4): There is one concern that already appears in the abstract, but is present throughout the paper.

Abstract-Conclusions: while term 'predictive-model' is technically the correct choice, the models try to distinguish non-frail from pre-frail and frail patients using current state of a patient, thus 'diagnostic-model' and especially 'diagnostic-factor' might be a better term. This recurs in the objectives of the paper. IMHO 'predictors' should be 'symptoms', 'indicators' or 'signs'. To my understanding the model only relies on data taken at the same time as the diagnosis is made. No temporal data mining approaches are applied. Neither is data used to predict the outcome or future state of patients.

Thank you for the comment. In the paper the term “predictive” is used as we are referring to the kind of machine learning model and technically speaking this is a predictive model. We have clarified this in the text in the subsection Limitations (page 25, 2nd paragraph).

With regard to the models you might want do discuss the interpretability of the resulting models. E.g. with decision trees it is a lot easier to interpret and understand how a classification is reached.

Thank you for your input. A subsection regarding the interpretability of the resulting models has been added to the discussion section (page 24).

The last sentence of results is actually future work and it would be good to express the need to validate the model found in retrospective data via prospective trials.

As suggested, this sentence has been moved to future work and a sentence corresponding to the need to validate the model found in retrospective data via prospective trials has been added.
It is quite a broad statement, that the work 'contributes towards the possibility of obtaining predictive models that can anticipate the onset of age-related deterioration'. I would strongly recommend to formulate more decently. It is for sure a step in the right direction, but there is paramount work ahead.

According to the reviewer suggestion the statement has been softened by introducing the auxiliary verb ‘may’, in order to reflect the uncertainty about the stated fact.

Overall, with the necessary focussing on the main objectives it became more apparent to me, that the overall contribution of the paper IMHO is quite limited.

Minor comments:

- Please introduce abbreviations (e.g. RF).
  
  The paper has been reviewed and abbreviations have been introduced where needed.

- There are still parts where the language could (and should) be improved
  
  Language has been checked by a native speaker, corrected and improved.

Thank you again for all your suggestions and comments.

Sincerely,

Hassler, Menasalvas, García-García, Rodríguez-Mañas and Holzinger