Author’s response to reviews

Title: A retrospective analysis of determinants of involuntary psychiatric in-patient treatment

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Version: 3 Date: 20 Mar 2019

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Responses to the Reviewers’ Comments

Reviewer 3 (Research Square):

REVIEWER COMMENTS

The revision of the paper addressed most of the important issues, and includes several improvements that I raised in my previous review. I also believe that the research was done appropriately in terms of statistical analysis.

I appreciated the use of data mining techniques for investigating the risk factors for involuntary psychiatric in-patient treatment. The classification of the model is quite precise with no overfitting.

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--> We thank the reviewer for this overall positive evaluation of our manuscript.

REQUESTED REVISIONS:

ADDITIONAL REQUESTS/SUGGESTIONS:
To improve stability and accuracy of the model, please consider using ensemble models (e.g. boosting or bagging).

--> We thank the reviewer for this suggestion. Our intention was to develop a model which is easily understood by clinicians. Therefore, we used a CHAID algorithm with a maximum depth of three levels. The resulting model appears to be adequately accurate with no overfitting. This satisfies the main goals of the present study. Further improvements of the model fit may be accomplished by ensemble methods such as bagging, boosting or stacking. In the future, we intend to use these methods in a follow-up project with prospectively collected data employing machine learning algorithms. We added this information in the revised version of our manuscript (page 18, lines 27-28, and page 19, lines 1-3).