Reviewer's report

Title: Using machine learning algorithms to guide rehabilitation planning for home care clients

Version: 1 Date: 24 September 2007

Reviewer: Kwokleung Chan

Reviewer's report:

General

This manuscript discusses the use of SVM in predicting the rehabilitation potential of home care clients. Interpretation of the SVM results is done to identify important input variables. Also, analysis is done with data in recoded scale and repeated with data in original scale. An alternative ADLCAP is proposed.

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

In general, the manuscript is well written and organized. Here are a few major comments:

1) In the abstract, it mentions that "a client is defined as having rehabilitation potential ... i) improvement in ADL functioning, or ii) discharge home."

In the "Data" paragraph on page 5, it mentions that "... true rehabilitation potential(y) can be reliably assessed from linked health service ...".

It should be more clearly explained how the "true rehabilitation potential" is defined and why it is defined that way.

2) It should be explained more how cross-validation (CV) for parameter tuning is done. Were all eight CCAC datasets used in the CV? Were only some samples from each dataset involved in the CV? Were these samples reused in the performance evaluation of the SVM?

3) On page 11, why is the ratio profile scores `s` defined as \( \frac{\max(r:r>1)}{\max(r:r<1)} \)? \( \frac{\min(r:r>1)}{\max(r:r<1)} \) seems to be a more reasonable score. Or how about \( \frac{\text{median}(r:r>1)}{\text{median}(r:r<1)} \)?

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Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

4) In tables 2, 3, 4, 5 and 7, the results are presented with too many number of decimal places. They give the impression that the results are accurate down to 1/10000.
Discretionary Revisions (which the author can choose to ignore)

What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:
I declare that I have no competing interests.