Reviewer’s report

Title: Development of a percutaneous coronary intervention patient level composite measure for a clinical quality registry

Version: 0 Date: 13 Jan 2019

Reviewer: Miguel Ruiz

Reviewer's report:

The present study reports on the development of a composite measure for assessing post-intervention quality of percutaneous coronary interventions which presents the novelty of including a patient reported outcome measure as part of the composite. A Delphi methodology is used for selecting components in the composite and weight given to each component.

The methodology used is adequate, data analyses are very simple but meet the aim of the study at this stage. References are well selected and updated. Conclusions are based on results found, although some may be biased by under-representativeness. Evidences presented have a limited value since no information has been given on the psychometric properties of the PRO, nor on the predictive validity of the composite.

In the aim of the study it would be nice to state clearly what is intended to be measured with the composite score (¿quality of PCI at 30-days in a cardiac outcomes registry?)

Authors should mention how and why the items included in the PRO were selected and what kind of data analysis was used to ensure the scaling properties of the PRO.

Page 6. Please review the following statement. "The Kaiser's criterion, where all outcomes with an eigenvalue of 1 or more, in conjunction with the Scree test, determined which outcomes were retained." What the Kaiser rule suggests is to retain all eigenvalues greater than one, where eigenvalues represent the variance of combinations of variables (outcomes in this case). It is a rule to decide on the number of "combinations of outcomes" (factors or dimensions) and not on the outcomes themselves.

Please review the following paragraph: "First they were asked to rate the importance of each of the seven clinical outcomes (Table 1) and PCI-specific PROM items on a scale of 1 to 9 (9=highly important, 1= not important) on the basis of the outcome's ability to predict patient outcomes and represent quality of care." It is circular (tantamount) to rate the importance of an outcome on predicting an outcome.

In page 10 it is said that the PROM is asked in a phone call interview. This fact should be mentioned in the methods. It could entail a reduction in reliability. Although reliability and validity of the PROM have not been reported and it is difficult to assess the psychometric quality of the scale.

Please review significance levels reported in page 11, line 243. It is very awkward that the p values exactly match the correlation values reported in Table 2. Perhaps the authors want to report the values for r in the text (and miss to report the accompanying values for p).

I would suggest the authors to down-tone their comments on the size of the relations between clinical
outcomes (cardiac events) and also clinical outcomes with PROM scores. Only 16% of patients experienced some kind of cardiac event after intervention and they accumulate in only 3 types of cardiac events. With such numbers it is very risky to make any claim based on correlations. The data they offer may not be considered conclusive and they should consider enlarging the sample. Please review the following statement "The lack of association between the overall PROM score and clinical outcomes suggests that the variables measure different constructs and can be included in a composite measure." Some information about the quantified relation between the proposed events (outcomes) in the VCOR would be welcome. ¿Do all the proposed events have such a low incidence in the registry over time?

In page 12, line 271 it is said that the highest rated endpoint obtained a median rating of 2 and the lowest rated obtained a median rating of 7. Please clarify. A higher rating was proposed as higher importance (see page 7, line 141).

Please review Table 3. For patient 2 scenario, a "new stent thrombosis on Day 17 post-PCI" is proposed but the indicator "New myocardial infarction within 30 days post-PCI" is marked as Yes in Status (although the weighting is correct) and the "New stent thrombosis within 30 days post-PCI (23)" is set to No (although the weighting is correct).

**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.

Unable to assess

**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.

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