Reviewer’s report

Title: Socioeconomic disparities in orthodontic treatment outcomes and expenditure on orthodontics in England's state-funded National Health Service: A retrospective observational study

Version: 0 Date: 08 May 2017

Reviewer: Yuko Kurushima

Reviewer’s report:

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Please overwrite this text when adding your comments to the authors.

To assess SES, I suppose you used only area-level SES; however, it is also important to consider other assessments such as income level and education in order to evaluate individual SES comprehensively, although IMD is conceptually combined with seven different domains of deprivation. This argument has already been discussed as "misclassification error", but it is a very important issue to be concerned.)

Regarding Table 1, it is natural that the residual need among discontinued patients is higher than that of completed patients because the "residual need" is evaluated at the end of the active treatment. Therefore, your comment that "discontinuation is a major factor behind the levels of residual need" could not be truly translated from this result.

More discussion is needed to explain your main result (Table 3).

Interesting to know the distribution of IOTN AC score at the beginning of the treatment between different IMD scores.

It is also an issue to discuss that generally the timing when patients discontinue the orthodontic treatment contributes on residual need.

Provided some potential reasons why a low SES ends in discontinuation in orthodontic treatment, it would be more helpful to make a policies which targeting lower SES patients.

More information is needed to support your comment that "North West England has a diversity of individuals form different socioeconomic backgrounds"; for example add the reference or provide more information of IMD in this study.

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.

No

**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 recommend additional statistical review

**Quality of written English**
Please indicate the quality of language in the manuscript:

Acceptable

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