Reviewer’s report

Title: Geographic variation in the intended choice of adjuvant treatments for women diagnosed with screen-detected breast cancer in Queensland

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Reviewer: Sophie Ancelet

Reviewer’s report:

The manuscript entitled “Geographical variation in the intended choice of adjuvant treatments for women diagnosed with screen-detected breast cancer in Queensland” by Hsieh J.C.F et al. describes an original model, namely a Bayesian shared-spatial component model, to:

1- analyse the spatial variations of the intended use of three adjuvant therapy (radiotherapy, chemotherapy, hormonal therapy) for women diagnosed with screen-detected breast cancer in Queensland across 478 areas.

2- validate the assumption that there may exist some common underlying spatially-structured factors that influence a woman’s decision to have adjuvant therapy

3- estimate the impact of demographic, clinical and geographic covariates on the intended choice of adjuvant treatments in the study cohort

This is an interesting purpose informed by rich and sound data. Moreover, up to my knowledge, the proposed approach has rarely, if ever, been applied to multiple responses as primary outcome variables.

The new revised manuscript is again a substantial improvement with respect to the second submitted version. The authors have carefully answered to my major compulsory and minor essential revisions. Consequently, this paper may be now acceptable for publication in BMC Public Health. Two discretionary revisions could be added. First, I am still wondering why the authors have not decided to present the A5 model (without a spatially unstructured random effects term) as the baseline model of the study since the comparison with the current A0 model showed similar posterior estimates of the regression coefficients of interest for a substantially lower DIC value of 18254 than the current A0 model (DIC=18364). Moreover, the authors could quickly define the posterior predictive checks (PPC) they have computed as several choices are possible.

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

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.
Declaration of competing interests:
I declare that I have no competing interests.