Reviewer’s report

Title: Age of onset and mean duration of a chronic disease: New methods and application to dementia in Germany

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Reviewer: Jennifer Karas Montez

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DISCRETIONARY REVISIONS

This paper uses an IPM framework to develop formulas for the mean age of onset and duration of chronic conditions from age-specific incidence, age-specific prevalence, and the age distribution. The paper provides a cogent description of the method and compelling justifications for using the two measures. The method appears sound and the application to dementia in Germany is illustrative. I have a few minor questions/comments for the authors.

(1) Is the finding that the peak prevalence for men and women are identical an artifact of the age heaping at 100+ or do the authors have another hypothesis?

(2) The authors make several simplifying assumptions to implement the analysis. They recognize the limitation and state that their estimates are “just approximations.” Approximations are perfectly fine when the benefits outweigh the costs, which I believe they do in this case. My only (minor) concern is about the assumption of duration-independence. Perhaps the authors could give some rough guidelines as to when (or for what diseases) this is, or is not, a reasonable assumption.

(3) To help researchers implement this method, are the authors willing to share their R-code?

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

Quality of written English: Acceptable

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:

No competing interests to declare.