Reviewer's report

Title: Stroke Risk and Poor Cognitive Function: A Population-Based Study

Version: 1 Date: 20 November 2007

Reviewer: Jennifer Manly

Reviewer's report:


This is a well-written paper summarizing the relationship between a modified version of the Framingham Stroke Risk Profile (FSRP) score and cognitive function in a representative sample of English people aged 50+. The sample is a great strength of this study, and the analyses are relatively straightforward. It is not clear however, how much the results add to the literature.

Major compulsory revisions

1. We already know that some components of the FSRP correlate with cognitive test scores – what is new here?
2. A second wave of data for ELSA participants should now be available, and it would be much more helpful to see the longitudinal analyses. Given the socioeconomic diversity in ELSA, it might also be helpful to know if the FSRP-cognition relationship varied across social groups.
3. The association between specific components of the FSRP and cognitive outcomes would be interesting. Is there one single factor driving these results or are all of these risk factors operating in the same direction?
4. Please spend more time describing the cognitive measures. For example show the distribution of the outcomes – the mean and the SE as shown here is not very informative. The SD and range would be helpful and an assessment of ceilings/floors if there are any with these measures. Is there just one item on the “prospective memory” assessment?
5. Please show the fully adjusted results in the tables, along with the age and sex adjusted results currently displayed. Also add results for the global cognitive function measure to Table 3.
6. It seems very misleading to report the unadjusted regression coefficient (0.4) in the abstract and discussion. After adjusting for sex and age, the magnitude of this effect drops by nearly a factor of 5 to .088. Thus, this result probably primarily reflects the fact that older people score worse on global cognition.
7. Are all items from ELSA, including atrial fibrillation, assessed with self-report or were medical records available for validation?

Minor Essential Revisions

1. On page 9, 1st sentence of the last paragraph, which cognitive domain is the
beta estimate referring to? And why is it <=?

2. It probably won’t make much of a difference, but given the range of social data available in ELSA, why have you chosen to control for such a limited set of potential confounders (e.g., why not income and wealth, if they are available)? And what is the motivation for selecting the covariates you did choose? CESD score in particular seems to me potentially causally subsequent to the FSRP.

3. Repeated reference to “probabilities of stroke” instead of “FSRP score” is confusing.

4. How was the subsample of 7716 ELSA participants who provided FSRP information selected? Or do you just mean that the other 4,015 ELSA participants had missing data?

What next?: Reject because too small an advance to publish

Level of interest: An article of limited interest

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

We (Jennifer Manly and Maria Glymour) declare that I have no competing interests