Reviewer's report

Title: Effect of socioeconomic status on three-year mortality after first-ever stroke: Nanjing Stroke Registry

Version: 1 Date: 2 May 2006

Reviewer: Michael Mussolino

Reviewer's report:

General

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

1. The researchers restricted the study to ischemic stroke and excluded 1,394 patients with hemorrhagic strokes. An explanation for this exclusion should be offered. I am unclear why 63 percent of the 2,200 patients had hemorrhagic strokes. In the United States, hemorrhagic strokes account for only about 20 percent of all strokes.

2. It is unclear how information on SES was obtained. On page 5, the text indicates that "a structured interview was used to assess risk factors and SES by 2 trained neurologists." But on 6 page, it is stated that information on SES was obtained by record linkage.

3. On page 5, it is stated that subjects who smoked 20 or more cigarettes per day were classified as current smokers. Does this mean that persons smoking less than 20 cigarettes per day were classified as nonsmokers? If so, the broad classification of smoking status would likely result in residual confounding.

4. Throughout the Results and Discussion section, there are many instances where "stroke mortality" is mentioned. But the principal outcome is supposed to be overall mortality, so I am unclear about this.

5. I am unclear about the hazard ratios and how they were calculated. In 15 years of using the Cox proportional hazard model, I do not recall obtaining any hazard ratios much higher than 2.00. In this paper, there is a relative risk of 82.43 for the lowest income category. But the reference group for this variable - highest income had just two deaths. The standard errors must be very high.

6. Table 2. Some of the hazard ratios change drastically between the unadjusted and adjusted models. For example, for myocardial infarction the hazards ratio drops from 2.74 (unadjusted model) to 0.16 (adjusted model). This would mean that subjects with a myocardial infarction would have an 84 percent lower risk of dying. In the adjusted models, there are too many variables/categories for just 166 deaths.

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Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

1. In the abstract, NIHSS should be spelled out

2. In the abstract, the sentence "Such a trend still persisted in some indicators of SES (e.g., occupation and income) even after controlled for." is unclear and should be reworded.

3. First paragraph of Results. Information on the number of patients is repeated from page 5.

4. First paragraph of Results. The sentence, "All the participants' mean age was 71 years." was unclear and should be reworded.

5. Second paragraph of Results. The sentence, "The proportion of hypertension..." should be reworded.

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Discretionary Revisions (which the author can choose to ignore)
What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

Level of interest: An article of limited interest

Quality of written English: Not suitable for publication unless extensively edited

Statistical review: Yes

Declaration of competing interests:

I declare that I have no competing interests.