Reviewer's report

Title: A Population-based study of dementia in the oldest old: the Monzino 80-plus Study Design, methodological challenges, and population characteristics

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Reviewer: Michal Schnaider Beeri

Reviewer's report:

This manuscript describes the design and methods of the Monzino 80-plus Study. The oldest old are the fastest growing segment of the Western world population and at the highest risk for developing dementia. Thus learning about their dementia prevalence, incidence, course, and risk factors is a public health imperative. This study documents important biases particularly encountered in the study of the oldest old.

Compulsory revisions:

Although the title refers to this study of dementia, no results on the dementia ratings are presented. This may reflect the present unavailability of the final diagnosis, but even results of initial clinical diagnosis, which presumably will not be dramatically different from the final diagnosis, would enhance the manuscript since this is the main characteristic of interest of this study.

For interpretation of the MMSE values, it would be very helpful to discuss the differential population norms for the MMSE, based on education, since this sample consisted almost entirely of subjects with little formal education.

Comparisons of the characteristics of the Monzino study to the few other oldest old cohort studies would have enriched this manuscript.

Minor essential revisions:

The abstract does not present clearly the questions of the study. Through the conclusions section one can derive that the “important methodological challenges” that are being addressed particularly in an oldest old cohort study are the biases introduced by non-response or by death prior to interview and the crucial contribution of informants.

The results of the neuropsychological tests would be very informative since they are affected by extreme age, both with regard to test completion and with regard to test score.

In the methods section, degree of confidence in the preliminary diagnosis of dementia had four categories: dementia, probably dementia, probably no dementia, and no cognitive impairment. It is not clear whether mild cognitive impairment (MCI)/cognitive impairment with no dementia or any of the “transitional” dementia phase definitions are examined and determined. This is crucial if in the future the authors intend to assess predictors of conversion to dementia and most importantly, predictors for intact cognition (which would, by...
definition, rule out MCIs).
Since the manuscript provides a detailed description of the methods, it is not clear why the specific laboratory tests were not mentioned.
How did the authors address the differential age recruitment in the different municipalities?
It would be useful to have some English-language editing, especially in the discussion section.

**Level of interest:** An article of importance in its field

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**
I declare that I have no competing interests.