Reviewer's report

Title: A study on home death in Japan from 1951-2002

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Reviewer: Siew Tzuh T Tang

Reviewer's report:

General
This is an important study based on the consideration of population-based and longitudinal research design and the relative lack of information on place of death in Asian countries. In order to strengthen this study, further clarifying the operational definition of several variables and addressing on the policy and clinical implications are suggested.

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

1. Methods:
   a? The authors need to explain, instead of using data from 1951-2002, why only data of 1980-2002 were used to identify the impact of death year, age, gender, causes of death on home deaths?
   b? Definitions or differentiation among the following facilities should be offered: medical establishment, homes for the elderly, special nursing homes for the elderly, geriatric health care facilities for the elderly, and geriatric medical care facility for the elderly. Due to the lack of clear description for each facilitate, FC1 and FC4 identified in this study seems overlapped to some degree (i.e., the number of geriatric medical care facility for the elderly in FC1 and the number of special nursing homes and geriatric health care facilities for the elderly in FC4; the number of homes for the elderly in FC3 and the number of special nursing homes and geriatric health care facilities for the elderly in FC4). Therefore, validity of the results are threatened.
   c? Reliability and validity of each collected variable should be described, especially information used for analyses of the associations between home death and medical, social, and economic factors were collected by survey of health care facilities, professionals and general population. How data were collected? by whom and when? What strategies were adopted by the authors to ensure standardization for data collection throughout the country?
   d? In addition to the graph presentation for change of home deaths by different variables in Figure 1A-D, formal statistical evaluation for trend should be conducted.
   e? It is recommended to include the geographic variables (i.e., urban/rural and region) into the logistic regression model for identifying predictors of home deaths to enhance the completeness of variables that were identified in the literature as influencing factors of place of death.
   f? Based on the findings from the logistic regression analyses of influencing factors for place of death, it is recommended to include age, gender, and cause of death into the stepwise multiple regression analysis of the factors that influence the home death rates among the 47 prefectures.
   g? Underlying assumptions regarding logistic regression and multiple regression need to be checked.

2. Results:
   a? Since the change of home deaths by cause of death over time has already been provided in Figure 1B, Figure 1C could focus on the change of home deaths by age.
   b? The authors should explain the rational for choosing which factor to be fitted into each step in the stepwise multiple regression analysis—which implies the theoretical/conceptual framework of determinants of place of death that guides the author to conduct this study.
In addition to the overall R2 and adjusted R2 in the Table 4, R2 increment should be provided to illustrate the relative importance for each factor.

3. Discussion:
   a? The authors only discussed the influence of the utilization and availability of medical care services and family structure and living environments but neglected the negative impact of the availability of geriatric health care on the home death rates. The authors should interpret this result and discuss the implication for future policy or clinical care.
   b? Due to the lack of inclusion of geographic variables (i.e., urban/rural and region) into the logistic regression model for identifying predictors of home deaths, the explanation for the observations of higher home deaths in rural areas or certain regions can best be recognized as speculation without empirical evidence. The authors should provide further information to advance their interpretation.
   c? The discussion regarding the impact of gender and cause of death on the likelihood of home death could be further validated if the authors have included these variables into the stepwise multiple regression analysis.
   d? The implications for policy and clinical care derived from the results of this study should be explicitly provided.

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. Replacing logistic regression (page 6) to multivariate logistic regression.
2. Renaming the title of Y axis on Figure 1A as “Percentage of place of death” because in this figure, information on both hospital and home deaths was provided.
3. Reconstructing the Table 1 as conventional table for presentation of logistic regression.

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 whose findings are important to those with closely related research interests

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

Statistical review: No

Declaration of competing interests:

I declare that I have no competing interests