Reviewer's report

Title: Mortality profiles in a country facing different stages of epidemiological transition: An analysis of registered data

Version: 1 Date: 17 September 2008

Reviewer: Nawi Ng

Reviewer's report:

The authors are to be congratulated on a highly informative and well-written piece of work on an important area of characterizing the epidemiological transition in Peru using the registered data. This is an interesting and informative study addressing the unequal progression of the transition among Peruvian population.

Major Compulsory Revisions

1. In the first part of their results section, the authors should add more details about the under-reporting observed in this study to support data in Table 1. The authors should describe in details the initial finding before their correction attempts. This will be important information for the readers to justify the validity of the results obtained.

2. The use of the cut-offs to stratify departments into three profiles are confusing. The criteria used were not mutually exclusive. An imaginary department which had 60% of non-communicable diseases death, 25% of communicable diseases death, and 15% of death caused by injury, can be categorized as in Profile 2 and Profile 3 at the same time. The authors need to consider the better use of profile. The last figure might be more informative if it shows the progress of the non-communicable disease over time in different regions. If the authors were to buy this suggestion, the results description under the heading “Transition of mortality profiles” should be revised accordingly.

3. The reviewer questions the way the authors redistributed the unregistered total deaths according to the proportion of rural and urban distribution. If the protracted epidemiological transition with one of its feature of within country health inequalities exists in Peru as suggested by Huynen et al. (2005), one might expect health inequalities also exists between rural and urban population, and that rural population in general might have higher mortality rate compared to urban population. The reviewer assumes the registration system worked better in urban setting, thus most of the unregistered death might come from the rural population. It does not make any sense to redistribute the unregistered death according to the rural and urban population distribution.

4. The reviewer tries to sum up the proportion of deaths in Table 2 for each region, but could not get the total of 100%. Is this because that the authors classified the deaths into 44 different categories and presented only the 10 most common causes of death? The proportions presented in Table 1 only cover less than 50% of the total death. It might be therefore more useful to reclassify the causes of death into fewer categories (but more than just NCD, communicable diseases and injury), and this will make the table more informative.

5. The authors’ discussion and interpretation of cardiovascular disease epidemic, smoking and lung cancer is confusing. How can the authors infer that tobacco was not responsible for the increase in cardiovascular disease mortality in Peru? The data in Table 4 showed that over 5 years of time, the mortality of CVD increased by 3.5%, cancer 10.1%, COPD 1% and diabetes 8%. All of these chronic diseases share the common risk factors, among which are tobacco uses. The US Surgeon General Report in 2004 stated that “smoking harms all body organs”. An ecological study assessing the trends of cigarette consumption and cardiovascular diseases mortality over the same time period might enable one to make the claim stated by the authors. Without such study, it is too premature to claim that the increase of CVD mortality rate was not related to tobacco.


6. The authors should interpret the Reference #44 carefully in Peru setting. Ezzati and Lopez (2004) based their calculation of smoking attributable mortality from for lung cancer, upper aerodigestive cancer, all other cancers, chronic obstructive pulmonary disease (COPD), other respiratory diseases, cardiovascular diseases, and selected other medical causes of death. One should question the validity of the Ezzati and Lopez’s statement that Peru was classified as region with low total adult mortality attributed by smoking if 50% of deaths in Peru were unreported (Table 1 in the manuscript).


Minor Essential Revisions

1. In the background section, the authors used a research from Thailand (Reference #16 and #17) as an example to illustrate the effort to patterning epidemiological transition in developing countries. The reviewer thinks that it is not appropriate to use a paper reporting trends of cardiovascular disease mortality and its risk factor to illustrate epidemiological transition. Other references cited (#18, #19, #20, #21) serve their function well to portray the epidemiological transition with their detailed descriptions on the share of communicable and non-communicable diseases as the main cause of death in respective countries.
2. The authors referred to Reference #24 as study which presented only “general description of the stages of transition at country-level”. Indeed, the main aims of the paper is to prove whether protracted epidemiological polarization exists in a transitional country of Peru, one of which feature is unequal distribution of wealth and health status within the country. The authors contrast several important health indicators, including the mortality rate of communicable diseases, cardiovascular diseases, and neoplasm, between Lima (the richest) and Huancavelica (the poorest parts of the country). The authors might rephrase the phrase quoted above, while keeping the following phrase of “but without an in-depth analysis of sub-national causes of death”.

3. In their description about CELADE model life-table, the authors should clarify to which population was the life-table fitted. Was it to the age and sex distribution of the national Peruvian population and of national registered deaths? Is it correct that the authors tried to standardize the mortality rates in each department accordingly to the national mortality rate? If so, more detailed description on this will help the reader to understand the correction process described by the authors.

4. There is no explicit description in the Methods section of the manuscript whether the redistribution of unregistered death into different age-and sex groups and different causes of death was done for each department separately. If it was not, the authors need to specify the limitation of the estimates obtained.

5. Figures should be numbered clearly.

6. The reviewer suggests the authors to revise their Table 1:
   a. Table 1 should not be sorted alphabetically, instead, the departments should be categorized according to four regions used in this paper: Lima, coastal, Andean and rainforest. The authors can then shorten their Data Analysis section by removing the description of the region stratification which will be obvious to the reader from reading revised Table 1.
   b. Table 1 should include a column of proportion of families living below the poverty line, and the authors can then remove such description from their Methods section (2nd paragraph under Context in the Methods section).
   c. Table 1 should be condensed. More detailed information, such as the standardized death rate and population can be put as appendix. The reviewer suggests the Table 1 presents only information on poverty and under-registration over year to give the readers background characteristics of each region needed to interpret the data presented later.

7. The reviewer suggests the authors to merge Table 4 and 5. Instead of sorting Table 4 alphabetically, the authors can list the departments for each region in Table 5. This will allow the readers to access detailed and aggregated data at once.

8. The authors might want to consider the use of “notorious” in the manuscript.
9. The authors might want to use the term “mortality rates” more strictly. In their description of the 2nd part of the Result, under the heading “Main causes of death by geographical region”, the authors stated “….. show different mortality rates in each of these areas, ranging from 9.3% in Lima and Callao to 15.3% in the Andean region.

Discretionary Revisions

1. While describing the use of causes of death analysis in the last paragraph in the background section, in addition to the benefits described, the authors might want to point out the possibility of identifying the most appropriate groups as the target of health intervention thus increases the cost-effectiveness of such intervention.

2. The statement “Each of these different patterns of mortality are usually uniquely attributed to global regions in international reports” in Discussion section demands clarification.

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

Quality of written English: Acceptable

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.