Title: Gender differences in the utilisation of health-care services among the older adult population of Spain

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Version: 3 Date: 12 April 2006

Author's response to reviews: see over
Manuscript “Gender differences in the utilization of health-care services among the older adult population of Spain”

Cover letter with point-by-point description of the changes made and responses to reviewer’s comments (second revision of the manuscript)

We thank the reviewers for their very useful comments. Following there is a detailed response to their comments and a description of the changes made.

Reviewer: Elizabeth Madigan

Minor Compulsory Revisions

1. To improve the explanation of why the information included in HRQL is “very health related” and is consistent with the concept of need factor in the Andersen model, we have added the following sentence: “HRQL provides subjective information on the health-status of the individuals, which has been shown to correlate with morbidity. As a result, HRQL served as an indicator of perceived need of health-care services.[29]” (page 9, paragraph 4, lines 1-3).


2. As suggested, we have made an earlier reference to the Andersen model. Please see the following comment at the end of the Introduction: “…In addition, it identifies some of the variables contributing to such differences, including predisposing, enabling and need factors, as considered in the Andersen model of health services use.[22]” (page 6, paragraph 1, lines 2-4)

3. As suggested, in the Methods section we have given an explanation on how the chronic diseases in our study were selected: “These diseases are rather prevalent in people aged 60 years and older, and are important enough to be sure that people can be aware of their diagnosis by a physician.” (page 9, paragraph 1, line 1-3)

4. As suggested, we have replaced the sentence “…suggesting that, given equal need, women make less use of health-care services” with the sentence “…suggesting that, given equal need, women make less use of hospital services.”, in page 12, paragraph 3, last line.

5. We have now removed the whole paragraph where appeared the word “synthetic”, because we think it was a bit repetitive with respect to other paragraphs within the section of Results. In fact, this paragraph was not present in the first version of the manuscript and was added to the revised version to summarize the results of Figure 1 and table 3.

6. A native English-speaking editor has reviewed the manuscript to improve the quality of written English.
Major Compulsory Revisions

As suggested, we have now provided the following two references (ref. 32 and 33 in the manuscript) about the percent change in the excess crude odds ratio (PCECOR):


The reference by Szklo and Nieto describes a measure called “percent excess risk explained by the variables(s) adjusted for” as a procedure to assess an intermediate variable in the causal pathway of the relation between exposure and outcome. This measure is calculated as follows: (unadjusted relative risk – adjusted relative risk/ (unadjusted relative risk-1) x 1000. Thus, this measure is identical to the PCECOR used in our study for the same purposes as proposed by Szklo and Nieto. Although these authors did not examine the behaviour of this measure under certain circumstances, it is clear that, as every ratio measure, it varies with changes in both the numerator and the denominator. In particular, when the unadjusted relative risk is 1, the denominator of the ratio is 0, and the function is undefined. To avoid this problem, other authors use minor modifications of this measure, i.e. [(adjusted relative risk-crude relative risk)/adjusted relative risk x 100] (please see Sonis J. A closer look at confounding. Family Medicine 1998; 30:584-8). However, this latter measure does not reflect appropriately the multiplicative nature of relative measures of association. In addition, when the adjusted relative risk tends to 0 the measure tends to increase, and when the adjusted relative risk is 0 the function is undefined.

The reference by Maldonado and Greenland describes several procedures to assess confounding, and one of them is the change-in-point-estimate (odds ratios) before and after adjustment for covariates. Maldonado and Greenland show that the change-in-point-estimate performed properly in confounding assessment, particularly when the cut-point for deciding whether crude and adjusted estimates differed by an important amount was set to a low value (10%). It should be noted that, in our manuscript, all the PCECOR outlined were well over 10%. Lastly, Maldonado and Greenland also provide a Wald-type collapsibility test statistic of the change-in-point-estimates (please see page 927 in the reference).

To make our manuscript more consistent with the approach of the above mentioned references, we have now included in Table 3 the values of PCECOR, and its statistical significance as calculated with the Wald-type test statistic suggested by Maldonado and Greenland. Also for the same reason, we have also removed Figure 1 with confidence limits for PCECOR.