Reviewer's report

Title: Significant differences in the use of healthcare resources of native-born and foreign-born in Spain.

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Reviewer: Andrea Buron

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MAJOR COMPULSORY REVISIONS

Background:

1. Some potential readers might not be acquainted with how access to the Spanish public healthcare system is gained. Therefore, a brief introduction on the functioning of the system and the relation of access to the healthcare system with the municipal register rather than with a residence permit would be helpful.

Methods:

2. The definition of economic immigrants remains insufficiently explained for me. I think the authors should clarify which was the criteria for defining immigrants, if nationality, country of birth, or both. I suppose both were used, since it says “The autochthonous population of the study includes the population born in Spain and those whose citizenship corresponds to one of the E.U. countries, the United States or Canada.” Thus, I understand that immigrants would be those neither born in Spain nor with USA/Can/EU nationality.

3. Furthermore, the inclusion of the new countries recently incorporated to EU, such as Romania (2007), Poland (2004) and Bulgaria (2007), deserves justification because these countries are economically disadvantaged compared to Spain. I believe that misclassification is taking place if people coming from Romania for example are considered autochthonous, and thus there could be an underestimation of the real differences between immigrants and autochthonous.

4. The results of some other questions asked in the SNHS-06 have not been analysed, e.g.: the distribution of healthcare contacts into primary and specialized care, the reason for the medical consultation, if the person needed medical care and did not get it (and the reason for it), possession of health care card and kind of health care insurance (public/private), reason for hospitalization, and for visiting an emergency service, “waiting time” questions (waiting list for any procedure, waiting time since the demand of medical attention, waiting time in the waiting room). There might be insufficient data for these variables or no interest to analyse them, or perhaps interest in studying them later; however explanation for not studying them should at least be mentioned.

Results:

5. When describing the results on table 3, the OR of 0.76 for physical exercise is not mentioned; immigrants significantly do less exercise in leisure time than the
autochthonous study population does. The authors write “even though the immigrant population shows significantly lower values in the consumption of alcohol and tobacco, they nonetheless perceive their health condition as worse”: alcohol and tobacco are not the only, nor the most important determinants of perceived health. The table shows a significantly lesser physical activity that perhaps relates to less leisure time. Other factors not mentioned are worse environment both at home and/or at work. All this belongs, however, to the discussion section.

Discussion:

6. I believe the immigrant population studied in the ENS is still not representative regarding not only the total percentage but also the origin distribution, and more information should be given on this. The total percentage of foreign-borns living in Spain by January 2007 provided by the National Statistic Institute (INE) is 11.6%, far over the 4.9% in the study sample. As for the country or area of birth, the authors say that 64.5% coming from Latin America “reflects more adequately the real immigrant population in Spain”, but the same sources (INE) state that less than 40% from the immigrants were born in Central and South America (this includes people with Spanish nationality, exclusion of these would result in an even smaller percentage). I believe an overrepresentation of these origins (the Spanish-speaking ones) is taking place in the selection of the study population, which should be commented and discussed by the authors, as well as it consequences over the results.

7. I do not fully understand the point of the second paragraph of the discussion section, specially the last sentence “However, these differences are not significant because the population of our study is young and consequently there are no immigrants receiving a retirement pension as yet.”

8. The sentence “do not show worse health conditions in the immigrant population of the study as the illnesses reported are similar to the autochthonous population” somehow exposes an expectation of bad health for immigrants, when actually they rather show better health conditions in most of the studies done in Spain as well as in other countries (“healthy immigrant effect”, also mentioned by the authors later).

9. When explaining why economic immigrants might present better health conditions (age and sex adjusted) another possible explanation could be that they do not go to the doctor as often, or they did so only since arrival to Spain, and therefore did not have the same chance to be diagnosed of any disease, since the question regards diagnosed illnesses and requires prior visit to the doctor.

10. Again, much attention is played onto tobacco and alcohol but none on exercise, which presents worse results for immigrants. If immigrants respond that they do less exercise, the negative consequences would be not only directly because of the absence of exercise but also indirectly because it could be due to an overload of formal and informal working hours, as well as less awareness of its beneficial effect.

11. In the first paragraph on page 9, “This greater frequentation may be due to
the ease of access and availability of hospital emergency services and lack of knowledge of the protocols to be followed to access healthcare services by the immigrant population, or to certain similarities in the immigrants’ manner of accessing healthcare services in their native countries, but is not due to a worse health condition than the autochthonous population." The potential access barriers to primary care could be commented as it affects emergency department frequentation.

12. Regarding the limitations, I believe the followings could be added:

- Response rate bias to the survey (immigrants have more chance of not answering the questionnaire than the autochthons) for two reasons: negative to answer (language; fear) as well as absence, i.e. not being at home at the time the interviewer arrives (longer work days or shifts than the autochthonous population). The questionnaire was only passed in Spanish (with the consequence of selection and over-representation of immigrants with longer stays, probably more integrated to the home society and coming from Spanish-speaking countries.)
- Lack of “length of stay” in the questionnaire (mentioned in the conclusions but should also go to limitations)
- The variable “possession of health card” and/or “type of health insurance” should be available in the questionnaire. Since it has not been analyzed it should be explained why and/or mentioned in the limitations section.
- The previously commented fact that the survey seems to be not representative enough of the immigrant population should also be mentioned in this section.

Conclusions

13. I do not completely follow why the authors say “although they have usage percentages of emergency and hospitalization services that are higher than those of the Spanish population, they do not show excessive or inadequate use of other health resources.” Is it because they have adjusted to comorbidity (which by the way is medical-diagnosed)? Wouldn’t it be better to use the questions regarding reason for being hospitalized or reason for attending the emergency department?

MINOR ESSENTIAL REVISIONS

Background:

1. The first sentence “Significant growth in immigration in Spain occurred at the end of the nineties.” lacks a reference, which could be reference 2 or another specific entrance of the INE that states the growth in ciphers during this time period.

2. The last sentence of the third paragraph deserves a reference as well.

Results:

3. It would be helpful to have a table comparing the distribution of some variables among the immigrant and autochthonous study population with the distribution of
the real population of Spain following official sources for the same period, in order to assess representativeness: age, sex and the region of origin. Comparison with another survey (the Spanish National Immigrant Survey) is made in the discussion section, but contrasting this data with register data from official sources would be convenient.

Discussion:

4. The sentences “The presence of language, cultural and administrative barriers etc. lead to social and economic deficiencies that produce greater vulnerability. These circumstances together with the lack of social and family support, xenophobia and other factors may contribute to this poor perception of health” need a reference too.

5. The overall comparison of the results of several articles could be done differentiating the ones based on questionnaires/surveys from the ones based on registries, since there are some similarities regarding methodology that could be affecting the results.

6. Several things regarding the argument about higher immigrant fertility and obtaining higher hospital emergency services frequentation and hospitalization rates because of that: “This difference in hospitalization may be determined by the age and the greater fertility rate of the immigrant population”:
   · Would it be possible to exclude all women who have been in emergency department and/or hospitalized due to obstetric reasons, and see if the difference remains?
   · Would it be conceivable to argue that immigrant pregnant women arrive in a later and worse stage of the disease and thus have to be hospitalized?
   · Wouldn’t it also be likely that because immigrant women do not follow as often primary care control and revisions as the autochthonous women do, they end up being hospitalized for worse conditions?

7. When explaining fewer dentist visits: could another reason be being visited in the home country since in many cases it’s much cheaper?

Through all the text:

8. The variable regarding if the respondent is immigrant or autochthonous is regarded as “country of origin” when indeed it is not country what is shown but the grouping of all possible countries into two. I suggest using another name (e.g. just “origin”).

9. Also, and due to the grouping of the countries made, I think it is not correct to speak of Spanish people if people coming from EU as well as USA and Canada are included in the same group, even if their proportion is small. An alternative name should be found (suggestion: Spanish and not economic immigrants” as opposed to “economic immigrants”.

DISCRETIONARY REVISIONS

Methods:
1. I believe that at the end of the 5th paragraph, "monthly income in Euros in the home" should be "monthly (...) at home".

Results:
2. Although not incorrect, “preventive medicine” sounds better and is used more frequently than “preventative medicine”.

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

**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