Author's response to reviews

Title: Socio-economic inequalities in health care utilisation in Norway: a population based cross-sectional survey

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Author's response to reviews: see over
Dear Editor

Socio-economic inequalities in health care utilisation in Norway: a population based cross-sectional survey

With reference to our first cover letter dated June 26th 2012 we would like to thank the editors and the reviewers for a thorough and useful review of our manuscript. Our responses to the concerns and suggestions are provided below.

Editor’s comments

1. Background section of abstract needs context info... Please format your abstract according to the guidelines for authors <http://www.biomedcentral.com/info/ifora/abstracts>. Potential referees will be asked to review the manuscript having seen only the title and abstract, so it is important that these are both informative and concise. The abstract has been formatted according to the guidelines. We have added context info and also made the abstract more informative by adding odds ratios and confidence intervals to the result section.

Associated Editor’s comments

1. Tables
Please note that we are unable to display vertical lines or text within tables, no display merged cells: please re-layout your table without these elements. Tables should be formatted using the Table tool in your word processor. Please ensure the table title is above the table and the legend is below the table. For more information, see the instructions for authors on the journal website. We have restructured the tables according to the guidelines.

2. Copyediting
After reading through your manuscript, we feel that the quality of written English needs to be improved before the manuscript can be considered further. We advise you to seek the assistance of a fluent English speaking colleague, or to have a professional editing service correct your language. Please ensure that particular attention is paid to the abstract. The manuscript has been edited by two different native English speaking scientific colleagues.

Reviewer Janco JJ Jancovic

Abstract
1. Background, the authors should change the word “variation” with “inequalities” and also they should apply this through the whole paper; the authors should put the word “the” between “in” and “utilization”. The text has been changed as suggested.
2. Methods, the authors should add “spouse/partner” or “spouse/cohabitant” like it was mentioned once later in the paper and apply this through the whole paper; maybe it should be better to use the word “marital status” with two outcomes (married/living with the partner and other); put the word “the” between “on” and “utilization”; be consistent when mention utilization of health services, either say “utilization of primary and specialist outpatient health care services” or “utilization of GP, somatic and psychiatric/psychologist specialist”, also apply this through the whole paper. The word “marital status” with two outcomes (married/cohabitant or single) has been used through the whole paper as suggested. We have defined and clarified the term “psychiatric specialist services” and used it consistently throughout the paper.

3. Results, put the first sentence under the methods section and reword as follows: “All together 12982 persons aged 30-87 years participated with the response rate of 65.7%. This is slightly more than third of the total population (33.8%) in mentioned age group in Tromsø municipality”. Like it was originally written one could think that two different groups participated in the study; also check the number of 12982, at the Tromso study site I found 12984 participants; in 5th line put “of a general practitioner” between “use” and “in men”; in the last sentence put “the” between “on” and “frequency”. The text has been changed as suggested. The number of participants differs between our paper and the Tromsø Study website (12982 vs 12984) due to the fact that two individuals have withdrawn from participating in research after the Tromsø Study webpage was last updated. We have asked the Tromsø Study to update the webpage.

4. Conclusions, the authors should put the word “the” between “in” and “utilization”; is “maintaining” the right word? The text has been changed as suggested. We found that the word “sustain” might be better than “maintain”.

Background

5. In the line 6 put “they” instead of “differences” in order to avoid duplication of the same word; 2nd paragraph, 5th line, put “available” in front of “health care”; 2nd paragraph, 7th line, it is “worse-off”; 3rd paragraph, 4th line, put “by” between “provided” and “a regular GP”. The text has been changed as suggested.

6. Page 5, 1st line, “psychiatric and somatic hospital (public) and private specialists”, written like this it seems that you do not have public specialist and private hospitals so it would be better to say “public and private psychiatric and somatic hospitals and specialists”. The text has been changed according to the suggestion and in line with point 2 above.

7. Page 5, 2nd line, put “who acts as a gatekeeper to the health care system” instead the words in the brackets; page 5, 7th line, put “in a more detailed way than previous studies did”, page 5, 8th line, delete “outpatient clinic”. The text has been changed in line with the recommendation and point 2 above.

Methods

8. Put the first paragraph next to the last under the background section; reword the part of the sentence in the mentioned paragraph as follows: “proportion of people living in urban areas, but education in Tromsø is higher than the national
average”. The first paragraph has been moved to the background section and the text has been changed according to the suggestion and in line with advices from English speaking colleagues.

9. Page 5, 2nd paragraph, Is there some specific reason for sampling to be done in the way you mentioned? Sampling was done this way for the benefit of repeated measurements and follow up, and the need to enrol new participants. We have added an explanation in the methods section.

10. Add one sentence with a total of invited persons and a total of participants, i.e. to move the first sentence from the results under the methods section would be the best way, use the same sentence like in the abstract. The text has been changed and a new sentence added as suggested.

11. Page 6, line 5, Did you mean “in attendance” or “personally”? The text has been changed to make the point clearer.

12. The authors should add one sentence about the questionnaires if they are self-administrated or filled together with the trained interviewers? This information is now provided in the second paragraph of the methods section.

13. This is the first time in the paper that the authors mentioned psychologist, also there is no consistency in the tables for the same word. Please see point 2 above and the third paragraph of the background section.

14. Please, add referent values for the outcome variables! Referent values for the dichotomous outcome variables for frequency of visits have been added.

15. Page 6, the last paragraph, I would first explain demographic variables, than socio-economic (marital status is not socio-economic variable) and health status variable; the same paragraph, 2nd line, put “in the year prior to the study conduct”; 3rd line, according to the questionnaire eight income response categories exist, isn’t it?; three sentences regarding income, education and occupation begin in the same way, please change one of them!; add zeros in the brackets (201000, 401000)! The text has been changed as suggested. Marital status is more clearly treated as an adjustment variable, and included in Table 2 along with the other adjustment variables. It is eight, not seven original income categories. We are grateful that this error has been detected by the reviewer, and we have corrected the number.

16. Page 7, 5th line, put “by dichotomous variables like musculoskeletal pain...cardiovascular diseases...chronic diseases”. The text has been changed as suggested.

17. Page 7, 2nd paragraph, 3rd line, put “all independent variables”. The text has been changed as suggested.

18. Authors should add one sentence to explain why they use dummy analyses. We have explained the reason for using dummy analyses in the second last paragraph of the methods section.

19. Page 7, 2nd paragraph, 7th line, put “all analyses were stratified by gender. The text has been changed as suggested.
Results
20. Please, move the first sentence under the methods section! The sentence has been moved as suggested, and can be found in the first paragraph of the methods section.

21. The results are too descriptive, add some percentages like percentage of women and men in the sample, also add more ORs and CIs, the authors only added ORs and CIs for dummy analyses which are not shown in the tables. The text has been changed according to the suggestions.

22. Page 8, first paragraph, reword as follows: “…also more women than men lived in lower income and single person households. The highest percentage of people has high education, good health and belongs to high middle income households”. The text has been changed according to the suggestions.

23. Page 8, 3rd paragraph, 1st line, put “in the year prior to the study conduct. The text has been changed as recommended.

24. Name sub-headings as follows: “visit to general practitioner”, “visit to somatic specialist” and “visit to psychiatric/psychologist specialist”. The text has been changed according to the suggestions and to the changes described in point 2 above.

25. Page 9, 2nd paragraph, put as follows: “…both in terms of likelihood (Table 3) and higher frequency of visits (Table 4)”. The text has been changed according to the suggestions and the comments made in point 21 above.

26. Page 9, 3rd paragraph, put as follows: “Men living with a spouse/partner were more likely to make a visit (Table 3), but there was no significant association with the frequency of visits (Table 4)”. The text has been changed according to the suggestions and the comments made in point 2 above.

27. Sub-heading “visit to somatic specialist”, put as follows: “women’s probability to visit a somatic specialist increased…”, also in the next sentence put “to visit a somatic specialist”. The text has been changed according to the suggestions and the comments made in point 21.

28. Sub-heading “visit to psychiatric/psychologist specialist”, put as follows: “women’s probability to visit a psychiatric/psychologist specialist increased…associations with the socio-economic variables”; in the next sentence put as follows: “…more frequently psychiatric/psychologist specialist…”, I do not understand like it was originally written. The authors need to add word “more” or “less” due to direction of the association. The text has been changed according to the suggestions and the comments made in point 2 and 21 above.

29. Sub-heading “self-rated health and occupational status”, I would put the results of the occupational status under the previous sub-headings together with the results of other socio-economic variables. The text has been changed as suggested.

30. Sub-heading “self-rated health and occupational status”, first sentence, put as follows: “Self-rated health was associated with use of all health care services in both genders (Table 3 and 4), except for the frequency of the utilization of
health services provided by psychiatric specialist in males. Participants who rated their health as bad had higher probability and frequency of visits to all health care services. By substituting self-rated health with the other variables like...or with the EQ-5D scale our results were the same (data not shown). Trend analyses showed no significant association... “The text has been changed according to the suggestions and the comments made in point 2 and 29.

Discussion
31. 2nd line, put “in the utilization”; 3rd line, put “where equitable”. The text has been changed as suggested.

32. 2nd paragraph, 4th line, put “the most consistent”. The text has been changed as recommended.

33. 3rd paragraph, 1st sentence, put as follows: “...in the low middle SES group, a tendency found in the study by Jensen as well (22)”. It can not be said “found in other studies” because the authors stated only one study; it is “better-off” and “worse-off”. The text has been changed as suggested.

34. Page 11, 1st paragraph, line 7, put “to a GP”; Please check the second part of the sentence “but also to a somatic specialist”. Is this the result of your paper or of other study? If it is the other study please add the reference! The text has been changed as suggested. We have clarified that the reference “to a somatic specialist” is a result of our study and that further information can be found in Table 5.

35. Page 11, 2nd paragraph, the authors need to divide 2nd sentence into 2 parts in order to be clear. I would put as follows: “...first and foremost for women which is noteworthy since health is worse in lower SES groups. Our findings are consistent with previous research (20,22) and the inverse care law (25)”. The text has been changed according to the recommendations.

36. Page 12, 1st paragraph, line 6, put “better or more educated”; 2nd paragraph, line 7, put “thus” between “and” and “generalization”. The text has been changed as suggested.

37. Page 13, next to the last sentence, put as follows: “In our sample where most of the participants had completed their education, the education variable was also robust one”. The text has been changed according to the suggestions and in line with advices from native English speaking colleagues.

References
Please check again all references carefully! Some of the errors are in reference number 10 (Jankovic...2010), 15 (available), 16 (Jacobsen...Mathiesen...delete number 16 in the brackets and the authors need to put doi number because the study is epub ahead of print) and so on. The reference list has been checked again, and errors have been corrected.

Tables
Table 1, the authors need to change the title as follows: “Characteristics of the participants (%) stratified by gender and utilization of health care services”;
remove the asterisk from GP in males and the row with percentages; put results for age and living with spouse at first place, than socio-economic variables, than self-perceived health; under the table add zeros for NOK and delete types of education because it is already explained in the methods section, same applies for table 3 and 4. The table has been changed according to the suggestions. For income, as for education, we have deleted information that is already explained in the methods section.

Table 2, put in the title “proportion of participants...”; I would put the results of 95%CI in the brackets; put in the 2nd row of the table “psychiatrist/psychologist specialist” and be consistent with the name in all tables! The table has been changed according to the suggestions.

Table 3 and 4, I would change the title of the table 3 and 4 as follows: “probability of health care services utilization...” and “frequency of health care services utilization...”; indicate by footnote “age adjusted multivariate logistic regressions”; put in the tables only the names for independent variables and the footnote reference marks for the reference values; there is no need to put both p and 95%CI. The tables have been changed according to the suggestions. Please note that the former Table 3 and 4 have been substituted by the new Tables 3, 4, 5, and 6 according to the concern raised in point 2 below by Reviewer Catherine Chittleborough.

English needs some language corrections before being published. We appreciate the reviewer’s language corrections. In addition, the manuscript has been edited by two fluent English speaking colleagues.

Reviewer Catherine Chittleborough

2. The main revision I would suggest for this paper is reporting of the regression results in Tables 3 and 4. The authors have chosen to report OR for trend for simplicity, but it would be helpful for the reader’s understanding if the OR for each category was reported (in addition to, or instead of the trends).... We agree with the reviewer’s concern, and have added the results of the dummy analyses in the new Tables 3, 4, 5, and 6.

3. Sample sizes used for each regression should also be reported in Tables 3 and 4. There is some information about missing data for each variable in Table 1, but it is not clear how many respondents have missing data on all variables used in the regression models. We have added sample sizes for all the regression models in Table 2 and in the new tables (Table 3, 4, 5, and 6).

4. From Table 2 it appears that 4727 (78.7%) of respondents visited a GP at least once in the past year. However, in the text in the Methods it is stated that only 948 respondents stipulated the number of visits. By my calculations, this represents 20% of the 4727 who attended a GP at least once. I’m not clear how 948 participants can be 7.3%. Given that only 20% of participants attending a GP reported the number of visits, substituting the mean number of visits for the 80% who did not report this could be introducing some bias if people not reporting the number of visits have a lot more or fewer visits to GPs than people who did report this information, in which case this may cast doubt on the regression results in Table 4. The 4727/6006 (78.7%) respondents in Table 2 are males only. We did not mean to say that 948 respondents stipulated their own number of visits, but that we stipulated
the number of visits for 948/12982 respondents. We have rewritten the text in the methods section to clarify this. Since all analyses are gender specific, the stipulated figures are now reported for each gender separately.

5. Given the focus of the paper on socioeconomic inequalities, more detail should be provided on the definitions of occupation status categories. How was this question asked of respondents? What types of jobs are classified as low, medium, high? This information would be useful for comparing across countries – are occupation categories in Norway the same as in other countries? Unfortunately, we do not know the occupation of the participants from the questionnaire. The “self-rated occupational status” variable is made from the participants’ own rating of their occupation’s social status in the society. In the methods section we have described this variable more clearly.

6. In the Results section describing Somatic outpatient clinic use, the authors state that none of the socioeconomic variables predicted more frequent use, but there is evidence of an effect of occupational status on somatic outpatient use among males (OR for trend 1.18, 1.00-1.40). The authors appear to have discounted this association simply because it does not meet an arbitrary p-value cut off. See the following reference for further information: Sterne & Davey Smith. Sifting the evidence – what’s wrong with significance tests? BMJ 2001; 322:226-31. The text has been changed according to the suggestions. The implementation of the reviewer’s concerns in point 2 above also made it easier to report this finding. See the new results section.

7. The fifth conclusion point states that “additional somatic care tends to take place in primary services for disadvantaged groups and in specialist services for the better-off.” However, the data used in this study do not specifically show that disadvantaged groups receive additional somatic care from GPs. It may be that disadvantaged groups miss out on additional somatic care all together. We agree with this concern, and have added a new sentence to the fifth conclusion point.

8. Could the authors please include a comment on the validity and reliability of self-rated health service utilisation, especially given that few participants report the number of visits they had. We have added a sentence and a new reference (reference number 35) to the limitations section. See also point 4 above with respect to the number who reported their visits.

9. Table 1: delete * on GP column, as this does not refer to any footnote. The table has been changed according to the suggestions.

Thank you again for your thorough review, which was most helpful when revising our paper. We hope that it will now be considered acceptable for publication.

Kind regards
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Norway