Reviewer's report

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

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Reviewer: Janko JJ Jankovic

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Comments to the authors

The paper is well written and structured, and presents a very clear picture of the socio-economic inequalities in the utilization of health services in a “wellbeing North European country” such as Norway. Nevertheless, major compulsory revision of the manuscript is necessary in order to be suitable for publication in the journal. Please address the following points:

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”.

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.

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 Tromso 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”.

4. Conclusions, the authors should put the word “the” between “in” and “utilization”; is “maintaining” the right word?

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”.

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”.

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”.

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 Tromso is higher than the national average”.

9. Page 5, 2nd paragraph, Is there some specific reason for sampling to be done in the way you mentioned?

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.

11. Page 6, line 5, Did you mean “in attendance” or “personally”?

12. The authors should add one sentence about the questionnaires if they are self-administrated or filled together with the trained interviewers?

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.

14. Please, add referent values for the outcome variables!

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)!

16. Page 7, 5th line, put “by dichotomous variables like musculoskeletal pain…cardiovascular diseases…chronic diseases”.

17. Page 7, 2nd paragraph, 3rd line, put “all independent variables”

18. Authors should add one sentence to explain why they use dummy analyses.

19. Page 7, 2nd paragraph, 7th line, put “all analyses were stratified by gender”

Results

20. Please, move the first sentence under 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.

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”.

23. Page 8, 3rd paragraph, 1st line, put “in the year prior to the study conduct”

24. Name sub-headings as follows: “visit to general practitioner”, “visit to somatic specialist” and “visit to psychiatric/psychologist specialist”.

25. Page 9, 2nd paragraph, put as follows: “…both in terms of likelihood (Table 3) and higher frequency of visits (Table 4)”.

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)”.

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”.

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.

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.

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...“

Discussion

31. 2nd line, put “in the utilization”; 3rd line, put “where equitable”.

32. 2nd paragraph, 4th line, put “the most consistent”.

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”.

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!

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)”.

36. Page 12, 1st paragraph, line 6, put “better or more educated”; 2nd paragraph, line 7, put “thus” between “and” and “generalization”.

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”.

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.

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.

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!

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.

English needs some language corrections before being published.

Sincerely, July 27th, 2012

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Institute of Social Medicine
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University of Belgrade, Serbia
**Level of interest:** An article of importance in its field

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

**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.