PEER REVIEW HISTORY

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ARTICLE DETAILS

TITLE (PROVISIONAL)	Access to health care for men and women with disabilities in the UK: a secondary analysis of cross-sectional data
AUTHORS	Sakellariou, Dikaios; Rotarou, Elena

VERSION 1 - REVIEW

REVIEWER	Hannah Kuper LSHTM, UK
REVIEW RETURNED	09-Mar-2017

| GENERAL COMMENTS | I enjoyed reading this paper, which covers an important and under-researched area.

I have some minor comments, which the authors may consider including in a revised version of the paper.

1. I understand that a secondary analysis was undertaken of an existing dataset. However, it would still be useful to include details on the methods as to how the sample was selected, how the data were collected (including who the interviewers were), and ethical issues. Similarly, in the abstract it would be useful to include some more methods details.

2. The findings are clearly strongly confounded by age. I would suggest that there is little value in presenting unadjusted values, and instead you could present age-sex adjusted and then fully adjusted ORs. This holds for the p-values in Table 1 (age and sex adjusted please), and the ORs in tables 2 and 3.
3. The results section is very brief. Could you please supply some text to describe the main findings in the tables.
4. I find the comparisons in table 3 a little confusing. Could you instead compare the men with disabilities to the women with disabilities? I do not feel strongly about this, but suggest it could make the table a bit clearer.
5. I am not convinced of the added value of the figures. Could they be omitted? If they are included, then I suggest that line graphs are not appropriate, as these are discrete groups.
6. The discussion could be strengthened by wider discussion of the existing literature, and how your findings fit into what is already known.
7. In the methods section (page 7), it is clear that a large number of observations were dropped due to case-deletion. What does this mean (case-deletion) and did this result in bias?

Minor comments:
- The estimates throughout should be given to 1 or 2 decimal places, not to 3. |
|---|---|

- I would suggest that the first line of the introduction is moved to the end of the introduction.
- In the introduction, it would be useful to briefly describe what the references 11-13 show.
- In the methods it is useful to emphasise that these are self-reported measures, not objectively assessed.
- I found the description of logistic regressions on page 10 very unclear. Could this be improved?
- In table 1, if the p-value is very small it should be expressed as <0.0001, not as <0.000
- In the discussion - there is a heavy emphasis on the cost of prescriptions (page 14), but there are other important costs, such as accessible transport.
- The paragraph at the top of page 16 is speculative, and perhaps not in keeping with an epidemiological journal, and could be removed.
- Further limitations to mention in the discussion is that disability was self-assessed with limited questions, and that there was no ability to disaggregate the results by impairment type. In addition, qualitative data was not collected to understand mechanisms.

REVIEWER	Adam P Wagner Norwich Medical School, University of East Anglia, United Kingdom
REVIEW RETURNED	10-Apr-2017

| GENERAL COMMENTS | I enjoyed reading this well written and solid straightforward paper addressing an important area. I would stress that my suggested revisions are very minor.

I particularly found interesting the paragraph in the Discussion starting on Page 15, line 54. Could some thought be given to metrics? Are health services incentivised to achieve better metrics by focusing on treating/supporting the "easy" patients? Leading those with more needs to feel "low priority"? There is also the confounding effect of those with the most needs often requiring an interdisciplinary/interagency support, which adds greater difficulty to supporting them.

Minor points:
My main substantive point: the authors do not make it clear form the outset that they are intending to look at the interaction of gender and disability. It took me until I read into the results and saw Table 3 to see that the differences in unmet needs were being explored within each gender. I think this point could be made clearer in the: Abstract hypotheses (eg "b) and there would be gender differences both in those with and without disabilities"); motivation in the introduction (probably just a sentence); page 8, line 10 needs nuancing to address this point.
Page 2, line 29, Abstract, Outcomes: It would be good to have these noted as self-report.
Page 3, Strengths and limitations: Among these points, I think it should be noted as a limitation that the observations are self-report.
Page 4, Introduction: I would ask the authors to consider defining 'disability' in the opening paragraph: they define specifically in terms of their data set on page 5, lines 45-50, but I think it would be useful to have a definition at the beginning of the introduction to provide a |

context for references etc.

Page 8, line 10: Please insert a reference/link for where readers can go for more information on these variables (likely done elsewhere, but I think it would be useful here).

Page 8: Relating to my 'No' of Q7 above ("7. If statistics are used are they appropriate and described fully?"): Please insert a question to define the tests that are used in Table 1. Chi-squared tests? McNemar's? I am happy with the description of the other statistical methodologies.

Page 8-9, Table 1: Verging on pedantry: please note that mathematically "p<0.000" is nonsense. Please change to "p<0.001".

Page 8-9, Table 1: Unaware of BMJ style formatting, but: are 2 decimal places really required for the percentages? I think these could be to the nearest integer without any loss and result in improved readability.

Page 16, line 27-28: While I am a quantitative researcher, I do work closely with a number of qualitative researchers and I am not familiar with the 'intersectionality' approach - perhaps a brief explanation?

Pages 25-29, Figures 2a-2e. There is no reason that the categories of disability/gender, should be joined up with a line - this should be a bar chart. While less important, I see no reason why Figures 2b-2e cannot be put on to the same plot, creating something like Figure 1 - this would save space. Figure 2a, with its quite different Y-axis scale would be difficult. On Figure 2a, please explicitly include 0.

Pedantry:
Page 2, line 17 & 19, Abstract Objectives: I am not sure of the BMJ style, but I am not convinced the "p" and "t" should be capitalised ("People" and "There" respectively).

Page 2, line 31, Abstract, outcome measures: "N" should not be capitalised following the semi-colon.

Page 5, line 18/19: "...that *they* their needs are..." - delete 'they'

Page 9, Table 1, line 27: "Teriary, university" label does not precisely match the definition given on Page 8, line 3 (it seems to be just labelled "university" there).

Page 10, Table 2: Again, dependent on BMJ formatting: could different footnote symbols rather than asterisks be used for footnotes versus indicating p-value size? Perhaps one of †, ‡, § could be used for the footnotes - this would decrease ambiguity.

Page 19, line 3: Remove space following the colon.

Page 21, line 21-27: There are line spacing issues here. Ref 29: does not give details of when it was accessed.

Page 21, line 38: Remove space following "19".

VERSION 1 – AUTHOR RESPONSE

Reviewer: 1
Thank you very much for your very helpful comments. Please see answers to below, below each of the points you raised.

1. I understand that a secondary analysis was undertaken of an existing dataset. However, it would still be useful to include details on the methods as to how the sample was selected, how the data were collected (including who the interviewers were), and ethical issues. Similarly, in the abstract it would be useful to include some more methods details.
RESPONSE: We included more details on methodology both in the methodology section and the abstract.

2. The findings are clearly strongly confounded by age. I would suggest that there is little value in presenting unadjusted values, and instead you could present age-sex adjusted and then fully adjusted ORs. This holds for the p-values in Table 1 (age and sex adjusted please), and the ORs in tables 2 and 3.
RESPONSE: We have addressed this issue as suggested.

3. The results section is very brief. Could you please supply some text to describe the main findings in the tables.
RESPONSE: We added some more text in the results section, but not too much in order not to duplicate the tables.

4. I find the comparisons in table 3 a little confusing. Could you instead compare the men with disabilities to the women with disabilities? I do not feel strongly about this, but suggest it could make the table a bit clearer.
RESPONSE: We think it is better to leave it as it is to show that both gender and disability affect access to healthcare, and show the increased barriers women with disabilities face in comparison to any other group.

5. I am not convinced of the added value of the figures. Could they be omitted? If they are included, then I suggest that line graphs are not appropriate, as these are discrete groups.
RESPONSE: We agree. We removed figure 2

6. The discussion could be strengthened by wider discussion of the existing literature, and how your findings fit into what is already known.
RESPONSE: We expanded the discussion, by bringing in more literature and discussing the findings in relation to it.

7. In the methods section (page 7), it is clear that a large number of observations were dropped due to case-deletion. What does this mean (case-deletion) and did this result in bias?
RESPONSE: We have answered this issue in the text, in the 2nd paragraph of 'Data and Variables'.

Minor comments:
- The estimates throughout should be given to 1 or 2 decimal places, not to 3.
RESPONSE: Changed throughout.

I would suggest that the first line of the introduction is moved to the end of the introduction.
RESPONSE: The aim has now moved to the end of the introduction.

- In the introduction, it would be useful to briefly describe what the references 11-13 show.
RESPONSE: These references are now discussed in some more detail.

In the methods it is useful to emphasise that these are self-reported measures, not objectively assessed.
RESPONSE: We have clarified this, both in the abstract and in the methods.

- I found the description of logistic regressions on page 10 very unclear. Could this be improved?
RESPONSE: We have clarified this description.

- In table 1, if the p-value is very small it should be expressed as <0.0001, not as <0.000
RESPONSE: Amended.

- In the discussion - there is a heavy emphasis on the cost of prescriptions (page 14), but there are

other important costs, such as accessible transport.
RESPONSE: We have expanded the discussion to discuss other barriers, including other costs.

- The paragraph at the top of page 16 is speculative, and perhaps not in keeping with an epidemiological journal, and could be removed.
RESPONSE: We have now removed this paragraph.
- Further limitations to mention in the discussion is that disability was self-assessed with limited questions, and that there was no ability to disaggregate the results by impairment type. In addition, qualitative data was not collected to understand mechanisms.
RESPONSE: We added these limitations.

Reviewer: 2
Thank you very much for your very helpful comments. Please see answers to below, below each of the points you raised.

I particularly found interesting the paragraph in the Discussion starting on Page 15, line 54. Could some thought be given to metrics? Are health services incentivised to achieve better metrics by focusing on treating/supporting the "easy" patients? Leading those with more needs to feel "low priority"? There is also the confounding effect of those with the most needs often requiring an interdisciplinary/interagency support, which adds greater difficulty to supporting them.
RESPONSE: Following recommendations from another reviewer we have now removed this paragraph, as it was rather speculative. We agree that the issues raised there are very interesting, and we aim to address them in a different publication, perhaps one aimed more specifically to health policy issues.

Minor points:
My main substantive point: the authors do not make it clear form the outset that they are intending to look at the interaction of gender and disability. It took me until I read into the results and saw Table 3 to see that the differences in unmet needs were being explored within each gender. I think this point could be made clearer in the: Abstract hypotheses (eg "b) and there would be gender differences both in those with and without disabilities"); motivation in the introduction (probably just a sentence); page 8, line 10 needs nuancing to address this point.
RESPONSE: We have included this clarification in the abstract, introduction, and in the hypotheses.

Page 2, line 29, Abstract, Outcomes: It would be good to have these noted as self-report.
RESPONSE: Amended.

Page 3, Strengths and limitations: Among these points, I think it should be noted as a limitation that the observations are self-report.
RESPONSE: Added.

Page 4, Introduction: I would ask the authors to consider defining 'disability' in the opening paragraph: they define specifically in terms of their data set on page 5, lines 45-50, but I think it would be useful to have a definition at the beginning of the introduction to provide a context for references etc.
RESPONSE: We have now added a definition in the beginning of the introduction.

Page 8, line 10: Please insert a reference/link for where readers can go for more information on these variables (likely done elsewhere, but I think it would be useful here).
RESPONSE: We have included a reference.

Page 8: Relating to my 'No' of Q7 above ("7. If statistics are used are they appropriate and described fully?"): Please insert a question to define the tests that are used in Table 1. Chi-squared tests?

McNemar's? I am happy with the description of the other statistical methodologies.
RESPONSE: It is chi-squared tests; it has been added in the table.

Page 8-9, Table 1: Verging on pedantry: please note that mathematically "p<0.000" is nonsense. Please change to "p<0.001".
RESPONSE: We have changed it to p<0.0001

Page 8-9, Table 1: Unaware of BMJ style formatting, but: are 2 decimal places really required for the percentages? I think these could be to the nearest integer without any loss and result in improved readability.
RESPONSE: Issue addressed as suggested.

Page 16, line 27-28: While I am a quantitative researcher, I do work closely with a number of qualitative researchers and I am not familiar with the 'intersectionality' approach - perhaps a brief explanation?
RESPONSE: We decided this would detract from the main argument, so we rephrased the sentence to exclude reference to the intersectionality approach, without changing the content.

Pages 25-29, Figures 2a-2e. There is no reason that the categories of disability/gender, should be joined up with a line - this should be a bar chart. While less important, I see no reason why Figures 2b-2e cannot be put on to the same plot, creating something like Figure 1 - this would save space. Figure 2a, with its quite different Y-axis scale would be difficult. On Figure 2a, please explicitly include 0.
RESPONSE: Following feedback from the other reviewed, we removed this figure, as it was not showing any essentially new information.

Pedantry:
Page 2, line 17 & 19, Abstract Objectives: I am not sure of the BMJ style, but I am not convinced the "p" and "t" should be capitalised ("People" and "There" respectively).
RESPONSE: Done

Page 2, line 31, Abstract, outcome measures: "N" should not be capitalised following the semi-colon.
RESPONSE: Done

Page 5, line 18/19: "...that *they* their needs are..." - delete 'they'
RESPONSE: Done

Page 9, Table 1, line 27: "Teriary, university" label does not precisely match the definition given on Page 8, line 3 (it seems to be just labelled "university" there).
RESPONSE: In both cases, education is labelled as tertiary, technical, and tertiary, university

Page 10, Table 2: Again, dependent on BMJ formatting: could different footnote symbols rather than asterisks be used for footnotes versus indicating p-value size? Perhaps one of †, ‡, § could be used for the footnotes - this would decrease ambiguity.
RESPONSE: We have used §

Page 19, line 3: Remove space following the colon.
RESPONSE: Done

Page 21, line 21-27: There are line spacing issues here.
RESPONSE: Issue addressed

Ref 29: does not give details of when it was accessed.
RESPONSE: Added

Page 21, line 38: Remove space following "19".
RESPONSE: Done

VERSION 2 – REVIEW

REVIEWER	Hannah Kuper LSHTM, UK
REVIEW RETURNED	16-May-2017

GENERAL COMMENTS	This paper is now very nice and clear. A tiny comment - in the abstracts the authors may wish to present OR and 95% CI either to one or two decimal places.

REVIEWER	Adam P Wagner Health Economic Group, Norwich Medical School, University of East Anglia Norwich Research Park, Norwich NR4 7TJ UK
REVIEW RETURNED	11-May-2017

GENERAL COMMENTS	I thank the authors for their work in response to the other reviewer's and my previous queries. I think the manuscript is much clearer. I have the following substantive points: * At the end of the first paragraph in the 'Data and variables' section (P8, line 55), the authors report that 'the total number of observations for 'disability' was 15,488; due to case-deletion (default in STATA) 12,780) observations were included in this study'. However, the footnotes for Tables 2 and 3 note that the sample size varies between 11,278 and 12,840. Please double check your sample sizes. At the very least 12,780 in the above quote should read 12,840. For clarity etc, I think the above quote should be adapted to note that the sample size varies in places (and perhaps the authors could argue why they have not just gone for one dataset that has complete data across all variables - a trade-off between maximizing sample size/power and consistency in analyzing the same people across all questions). Page 9, line 9: "did not reduce statistical power since n is adequately high" - arguably a nuance in language, but the reducing the sample size /does/ decrease statistical power. However, it is a large sample, so I think you can claim statistical power is still sufficiently high. Page 9, line 10: "the sample is representative of the target population": Where is the evidence to justify this claim? For example, I would be interested in the age, gender and disability (where possible) etc breakdown between those included and those

	excluded (eg are those missing proportionately more female than those included in the 12,840?). Both testing these differences and descriptive statistics would be useful.

VERSION 2 – AUTHOR RESPONSE

Reviewer 1
In the abstracts the authors may wish to present OR and 95% CI either to one or two decimal places.
RESPONSE: We have amended this accordingly

Reviewer: 2
1. At the end of the first paragraph in the 'Data and variables' section (P8, line 55), the authors report that 'the total number of observations for 'disability' was 15,488; due to case-deletion (default in STATA) 12,780) observations were included in this study'. However, the footnotes for Tables 2 and 3 note that the sample size varies between 11,278 and 12,840. Please double check your sample sizes. At the very least 12,780 in the above quote should read 12,840. For clarity etc, I think the above quote should be adapted to note that the sample size varies in places (and perhaps the authors could argue why they have not just gone for one dataset that has complete data across all variables - a trade-off between maximizing sample size/power and consistency in analyzing the same people across all questions).
RESPONSE: Thank you for this comment. Yes, we did allow for sample variation. We have now added an explanation to clarify this.

2. Page 9, line 9: "did not reduce statistical power since n is adequately high" - arguably a nuance in language, but the reducing the sample size /does/ decrease statistical power. However, it is a large sample, so I think you can claim statistical power is still sufficiently high.
RESPONSE: Thank you for this comment. We have now reworded this phrase for accuracy.

3. Page 9, line 10: "the sample is representative of the target population": Where is the evidence to justify this claim? For example, I would be interested in the age, gender and disability (where possible) etc breakdown between those included and those excluded (eg are those missing proportionately more female than those included in the 12,840?). Both testing these differences and descriptive statistics would be useful.
RESPONSE: Thank you for this comment. We are providing two tables as supplementary materials, comparing the full sample of 15,493 with the minimum sample of 11,278. We tested for differences between the two samples: there were no differences in terms of disability, and most of the age groups. The gender differences were found to be significant (p=0.006), despite a difference in proportion of only 1.7%. The descriptive statistics show that the two samples are very similar in terms of gender, disability, and age. We have slightly rephrased the claim to "the sample is representative of the target population, in terms of disability and age".

VERSION 3 – REVIEW

REVIEWER	Adam P Wagner
	Norwich Medical School, University of East Anglia (UEA), UK
REVIEW RETURNED	08-Jun-2017

GENERAL COMMENTS	I am satisfied with the Author's response to my review. I thank them for engaging helpfully with my comments. My apologies for the delayed review.
	I think the Supplementary Materials are a useful addition

	Page 8, line 20: I wonder if the authors could be clearer than using 'target population' - I think this is ambiguous; some more explicit wording for 'the complete sample' etc I think would be helpful.