Reviewer's report

Title: Effect of unaffordable medical need on distress level of family member: analyses of 1997-2013 United States National Health Interview Surveys

Version: 0 Date: 19 May 2017

Reviewer: Gerald Jordan

Reviewer's report:

The purpose of this article is to examine the relationship between the affordability of health care and distress levels as experienced by family members. The results of the study showed that unmet medical needs due to cost were associated with a relative risk of both moderate and very high levels of distress. This paper deals with an important subject matter which has not received enough attention in the literature. However, I have serious concerns with the statistical analyses used, especially with the how the outcome variable is defined. The authors must attend to the various issues with the manuscript before it is ready for publication.

Overall: There are many grammatical errors throughout the manuscript, in nearly every sentence (including in the title and abstract) which need to be corrected.

Introduction: The authors point to economic changes as being an impetus for cutting back on healthcare funding throughout the paper. While this is true, the objectives, methods, statistical analyses and results of the paper do not deal with economic changes. Hence, I feel this emphasis is too distal from what the study is actually about. The authors could discuss economic changes in the discussion section but not give it so much attention.

The authors provide a list of keywords and some search parameters pertaining to a literature review aimed at detecting any similar studies to theirs which have been previously conducted. While their transparency is commendable, their search strategy was also not exhaustive, which may lead the reader to think they did not perform a thorough enough search of the literature.

Methods:

Study Design:

I understand that this work is built on prior work, but there is simply not enough detail on the design of the study. The reader should be able to walk away with a clear idea of the study methodology from reading this paper alone (so that someone else may replicate their work),
which is not possible with such limited information given. More information on the study design and the actual survey should be given.

Participants:
The sampling strategy was appropriate, but would again benefit from some more detail.

Measures:
The authors should provide examples items for each question used to collect data.

Details of the survey sampling strategy and data collection should be provided here.

More information on the Kessler's 6 questionnaire should be provided, including a list of items, scales, and information on reliability and validity.

On line 93, the authors state "whether during the past 12 months, was there any time when needed medical care, but did not get it because couldn't afford it"—who is this question directed at? The respondent? A family member?

I have serious concerns about their outcome variable. The authors used a categorical variable of distress over a continuous variable without providing a clear rationale for why this form of variable was used. Why is the outcome variable categorized as moderate or very high? What about low or very low? Was the variable classified this way based on a clinically meaningful cut-off, as should be the case? How do the authors know that a score of 5-12 is moderate, and then 13 and above is very high? What happened to high?

Statistical analyses

In the preceding section, the authors state that moderate was defined as a K6 score from 5-12, and very high was 13 and above, but in this section they break down their categories into moderate or higher K6 > 5, or very high K6 > 13. These categories are not mutually exclusive, since moderate or higher would include cases of very high. Any analyses with overlap in the dependent variables would seriously violate assumptions that must be met to carry out analyses. These categories are not reported in the results. Why are they here and what happened to them? Later, on line 105, the authors state they categorized their variables into categories of 0-4, 5-12 and 13-24, then don't report on the 0-4 category.

Results:

The authors should provide more information in the results section. As it stands, the results section reads too much like a discussion section. For instance, could the authors provide parameter estimates, some important risk ratios, etc?

Lines 126-128 should go into the discussion section.
The authors should indicate in a table the number of people who had missing data, and how many were excluded from analyses for any type of reason.

How many participants were represented in each response categories?

P values should be provided and a bonferonni correction should be applied to correct for the large number of statistical tests performed. To reduce the number of tests, the authors should use continuous variables where appropriate (like age).

Every statistical test yielded a significant result. The authors should explore reasons why and highlight this in the discussion section.

Tables

The authors should find a way to condense their tables so that 1 table can fit on 1 page.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

No

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

No

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

Quality of written English
Please indicate the quality of language in the manuscript:

Not suitable for publication unless extensively edited
**Declaration of competing interests**

Please complete a declaration of competing interests, considering the following questions:

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