Reviewer's report

Title: Gender differences on the association of social support and social network with self-rated health status among older adults: a population-based study

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Reviewer: S Kumar

Reviewer's report:

This paper examines the gender differences in the association between social support, social network and self-rated health (SRH) among older adults in Brazil. This is an interesting paper with credible findings - results indicate a strong association between social capital and SRH and strength of the association varied by gender of the respondents. The paper is well written and clear. The paper contributes to knowledge in this area. I have following comments to improve the paper.

1. Readers would benefit if the name of the city/country is included in the title of the paper.
2. Could you provide one-two line motivation for using the hierarchical model?
3. Table 3: Model 6 in table 3 does not include “social network” as a predictor. Authors claim to have used “forward selection” technique to choose which variable to use based on significance. I would argue to include social network in the final model as it is an important measure of social capital. Or have a model 7 that includes social network variable.
4. Table 4: Model 6 includes social network and the coefficient is significant. Since the main objective of this paper is detail the gender differences in the association between social capital and SRH, it would be incorrect to compare odds ratios in models table 3 and 4 as included variables are not the same.
5. How about combining table 3 and 4 by running one single model with gender as an interaction variable with different measures of social capital.
6. Are odds ratios statistically different across gender- you can test it?
7. Could you provide some explanation why ORs for social support among women is significant but it not among women; while contrary is true about social network (significant in men).
8. Health insurance and usage of health services are important predictor or SRH - model 6 should always include these variables.
9. Kumar et al. (2012) have analyzed the gender differences in the association between social support and SRH- could you compare your results with the result in that paper in Brazil. I understand that the sample in the current paper is restricted to Rio De Janeiro; however a comparison would still benefit the readers.

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10. In the discussion section, last paragraph, last sentence, authors mention cross-sectional design of the sample as limitation since causality cannot be established. This is an odd statement as now we know that by using sophisticated econometric techniques, causality can be established even in the cross-sectional data (Instrumental variables, matching technique etc.)

Discretionary:

11. Self-rated health (SRH): The strength of the paper is offset by the method used to measure SRH, indexed by single-item measure. Though this could be data limitation, but the paper does not recognize the limitation of single-item measure, I think there is an extensive literature on this. SRH in this paper is subjective measure as perceived by the respondents. Many papers lack data on the objective measures of health (so they use SRH), but this paper has a few objective measure of health status (Functional status and somatic health problems; health related behaviors)- why not use these measures as outcomes in addition to SRH. Similarly, social support is perceived not actually received, so mention the word “perceived” throughout. There is a distinction between perceived vs received.

12. I am also concerned with the multicollinearity among variables in 3rd, 4th, and 5th blocks. This could be a reason for insignificant results. You can look at variance inflation factor to check the multicollinearity problem.

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 have no competing interests