Reviewer's report

Title: Communication and advice exchange of nursing staff: a social network analyses of 35 long-term care units

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Reviewer: Laurent Boyer

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Review: Communication and advice exchange of nursing staff: a social network analyses of 35 long-term care units

This article is well written and of interest. The design of the study is well done. The introduction is concise and clearly laid out to the importance of the current study. The aim of the study is to investigate the social networks of nursing staff in healthcare settings using an original method: social network analysis (sna). The method is appropriate and clearly described.

However, I have several comments on this manuscript.

1/ Major Compulsory Revisions

- Response rate for the social network analysis is potentially an important bias in this study: 44% (380/861) of responders for communication and 40% (347/861) for advice network. The authors have to better discuss the group of non-respondents (homogeneous group?), and the strength and even direction of non-response bias (cf Etter JF, Perneger TV. Analysis of non-response bias in a mailed health survey. J Clin Epidemiol. 1997 Oct;50(10):1123-8.). For example, if the non responders are the less satisfied and as the non-responders rate is not the same according units (nursing home, residential homes and group project), this can invalidate the results of the multilevel analysis. This point need to be better identified by the authors in the discussion.

- Job satisfaction questionnaire: I understand why the authors chose to remove one item in this questionnaire. They justified it adequately on the method part. However, this is not sure that the psychometric properties are the same, even if the Cronbach's alpha=0.88. The Cronbach's alpha is not sufficient to attest of the quality of a questionnaire (construct validity, reliability, external validity, reproducibility!). This is an important limitation in this study because job satisfaction is the principal judgment criteria of this study. The authors have to discuss this limitation and may be to present the psychometric properties of this "new questionnaire".

- page 10, “only communication networks were positively related to job satisfaction (p<0.10). The usual statistical significance level is set at P=0.05 ?

3/ Minor Essential Revisions

- In the introduction (abstract and manuscript), the authors have written: “we
examine the structure of the network (communication or advice)”. However, their analysis only concerns density (which is only one indicator of sna (centrality, prestige, cliques...) and which examines partially the structure of the network. The authors have to rapidly explain in the method what is sna, why they choose density among all the available indicators, and probably to put this point in the limits of the study.

- Multilevel analysis: the authors don't present in the method section how they select variables relevant to the model (based on their clinical interest and/or a threshold p-value (#0.02) in univariate analysis?).

- The author should nuance their conclusion: “the study demonstrates that communication... is important for job satisfaction”, but P is not < 0.05?

- It looks strange to read in the abstract p<0.10.

2/ Discretionary Revisions

- Multilevel analysis – job satisfaction: the authors could present the results of the univariate analysis.

- I am not sure that all the Figures (1, 2 and 3) are necessary. May be the authors can choose one to illustrate the use of graph in sna.

**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 declare that I have no competing interest.