Reviewer's report

Title: The importance of social support in the associations between psychological distress and somatic- and socio-demographic factors among older adults living at home: a cross sectional study

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Reviewer: Philayrath Phongsavan

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Title: The importance of social support in the associations between psychological distress and somatic- and socio-demographic factors among older adults living at home: a cross sectional study

This manuscript examines an important area of social support and health among older adults. The authors have done a reasonable job with the analyses. Some major issues, however, have not been well addressed and require significant changes to improve clarity and value of the paper.

Major Compulsory Revisions

1. Three concepts are being tested in this manuscript: direct effect of social support, social support as a moderator, and social support as a mediator. The Introduction attempts to justify the hypotheses being tested but the varying use of the terminology, such direct effect, indirect effect model along with moderator and mediator, makes it difficult to appreciate why it is important to understand moderation and mediation of social support? In different contexts, social support could be a mediator, moderator, or confounder. So is the manuscript making the claim that the investigative approach undertaken by the authors will add to understanding causality associated with psychological distress and somatic factors? A major restructuring and organising of the Introduction is required to facilitate reader's comprehension of the argument being put forward. In its current form, the manuscript does not provide a convincing and defensible rational for the research questions being considered.

2. The content of the Methods requires substantial rewrite and restructuring. To assist the international readership, a brief description of the Norwegian Population register is essential. The section titled 'Variables' needs to be better structured and clearly outlines information on the following measures, in separate paragraphs: psychological distress, social support, somatic disorders, socio-economic status indicators and so on. Suggest that the PCA results for the HSCL and OSS-3 which currently are embedded in the Statistical Methods and Analyses section be moved to the measurement section, in the social support section and so on. Statistical Methods section should simply outline the analytical approaches to be undertaken.

3. A number of mediation analyses could be utilised. Please indicate clearly the
mediation analytic approach used for this study.

4. Table 1, the authors presented the numbers and percentages for ‘Invitees’ – this should be justified as it does not seem to add to understanding the ‘representativeness’ of the survey sample. The ‘respondent’ data are more relevant in this context.

5. Table 3, the Total data for HSCL according to the three age groups appeared to be missing in the table.

6. Table 5, please provide information on the different number of asterisks indicated in the table. Do they represent different levels of p-values?

7. The Discussion states that ‘Senior centre is a valuable service provision in this context, serving both fit and less functional pensioners, free of charge….’ It is unclear how the results reported in the manuscript are implicated in developing interventions in such a setting. The results are based on older adults living at home; thus, the applicability of the findings to older adults living in institutions should be justified, if any. In general, the Discussion and the overall manuscript would benefit substantially with sharp and concise scientific writing.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Not suitable for publication unless extensively edited

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:

I declare that I have no competing interests