Author’s response to reviews

Title: The frail older person does not exist: development of frailty profiles with latent class analysis

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Author’s response to reviews:

Dear Roman Romero-Ortuno,

First, we would like to thank two reviewers for the insightful comments on our paper. We appreciate the active interest and time they have invested in our paper. Their suggestions for improvement have helped us make sure the paper is consistent and accurate in achieving its stated purpose. We tried to implement the suggestions as well as possible in the revised version. Below we will address each of the issues mentioned in turn. Finally, we would add “on behalf of the TOPICS-MDS research consortium” to the author list (after the last author of this paper). We have mentioned this explicitly on the title page of the manuscript but we were not able to add this on the Author List in the online submission system. Your sincerely,

Willemijn Looman

Reviewer reports:

Jordi Amblas Novella (Reviewer 1): This very interesting manuscript proposes a subdivision of the frail population into six subgroups by using the latent class analysis methodology, according to the physical, psychological, cognitive and social variables. The article is exposed quite clearly and with great methodological rigor. GLOBAL COMMENTS: 1. The manuscript states that a frail group of population was analyzed. Given the global characteristics of the described patients they are certainly very likely to be patients with diverse degrees of frailty, frailty validated tools have not been used. For example, what does lead us to assure that subpopulation A is frail? It should be mentioned as a limitation and/or discussed. The 54 research projects in the TOPICS-MDS focused on older people at risk, in need of interventions or frail older people. The projects had different inclusion criteria and sampling frames such as having health problems; chronic conditions; functional limitations or being frail according to a screening instrument such as the Groningen Frailty Indicator. We adopted a broad approach and included all older people aged 60 years of all projects. Indeed, a relative large group of older people appeared...
in the relatively healthy profile. They were not perceived as frail according to the focus group. By including the frailty index score (as suggested on your global comment 2), indicates that these people might not be frail. The mean score in this profile on the frailty index was below the cut-off point of 0.20 (Searle et al 2008). We have now also addressed this point as a limitation in the discussion (page 17 lines 21 to page 18 line 12), also according the feedback of reviewer 2. We looked into the data after your suggestion and we found out that people in profile A also appear in projects specifically focusing on frail older people. For example, in a project that included only with a Groningen Frailty Score of 4 and higher, 23.3 of the project’s study population belonged to profile A. This shows that frailty is an ambiguous concept and we have not reached consensus on its conceptualization. It is important to determine when and how do we intervene effectively with (frail) older people. People in profile A might still be at risk and preventive interventions might be feasible. In future research we should explore this, also with the input of professionals. 2.The classification into subgroups was performed from the characteristics of the variables related to frailty and from a rigorous methodology. However, the subgroups validation and classification according to the frailty degree based only in qualitative methodology with a focus group with older people may imply some limitations that should be mentioned. For instance, why not to do it also with professionals? and/or why not use also a quantitative methodology comparing this with a Frailty Index or a Clinical Frailty Scale?. Thank you for these suggestions. We think that the combination of the quantitative results of the profiles with the qualitative approach of the focus group with older people is a strength of our study. We agree that this focus group is the first validation of the profiles and that further validation is indeed required. The insights of other stakeholders such as professionals and policy makers are very important and should be carefully considered for future research. The use of another quantitative methodology such as a Frailty Index is a indeed good suggestion. We have described the calculation in the Methods Section (page 8; lines 15-19) and incorporated the scores on the frailty index of each profile throughout the results sections page 9 line 1 to page 15 line 2). Moreover, we were able to draw firmer conclusions in the discussion section by comparing the profiles with the frailty index (page 16; lines 1-14). A frailty index based on items in the TOPICS-MDS was validated (Lutomski et al. 2013). The variables that were used to calculate this frailty index are similar to the variables we used for the development of the profiles such as experienced health, cognitive functioning social functioning, functional limitations, morbidities, mental health. The difference is that the EQ-5D was also included in the frailty index. In this revised version of the manuscript, we have added the comparison of the profiles with the frailty index to our article. Including the frailty index strengthens our argument that the scores on frailty measurements do not reveal the specific interaction patterns underlying the problems in different domains. For example (page 16; line 1-14): “Despite their comparable frailty index scores, older people in the mild physically frail and psychologically frail profiles experience rather contrast ing problems. Also the severe physically and medically frail profiles had similar scores on the frailty index but the underlying problems clearly differed. In the severe physically frail the problems mostly originated in the physical domain whereas people in the medically frail profile suffer from a combination of problems in the physical, psychological and social domains. In the multi-frail profile the constellation also extended to the cognitive domain of functioning”. 3.Throughout the manuscript the population and individual visions are frequently overlapped. This may create some confusion among the readers, since when the population heterogeneity is mentioned there is no reference to the unique features of one person, but to the presence of subgroups in a sample. For instance, the subgroup analysis could be useful for research purposes or in the identification of population target that may