



# Response to Letter to the Editor: Impact of Comorbidities on the Risk of Polypharmacy and Potentially Inappropriate Medications in Older Patients

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We would like to thank Dr Sheu and colleagues for their interests and comments<sup>1</sup> on our recent paper on the changes in medications among older adults receiving home medical care services in Japan.<sup>2</sup> They expressed concern regarding the potential effect of confounding on the results of our study owing to other diseases which were not included in the analyses and coexistence of multiple diseases.

We would like to clarify that our logistic regression analyses were adjusted for diagnoses of selected diseases, as we described in our “Statistical Analysis” section. These diagnoses of selected diseases were nine disease categories, including asthma/chronic obstructive pulmonary disease (COPD), cancer, dementia, depression, diabetes mellitus, heart failure, ischemic heart disease, and stroke, recorded in the claims data during the 6-month baseline period, for 2015 and 2019, respectively, as we described in our “Measurement” section. We believe that these nine disease categories roughly cover the conditions associated with prescription of the studied drugs, whereas we acknowledge unmeasured severity of the individual diseases in the claims data as mentioned in our “Limitations” section. Each disease was treated individually in our statistical models rather than as a composite disease measure, such as the Charlson’s comorbidity index. We believe that adjusting for each of nine disease categories can reduce confounding more effectively than adjusting for the Charlson’s comorbidity index.

More importantly, our study examined changes in medications during only four years between 2015 and 2019, and it is very unlikely that the disease prevalence changed substantially during the study period. Therefore, we posit that observed changes are likely attributed to various countermeasures against inappropriate polypharmacy rather than significant shifts in disease prevalence.

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## Declarations:

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