

## Peer Review Report

# Review Report on Polypharmacy in older adults: the hazard with hospitalization and mortality is mediated by inappropriate prescriptions, findings from the Moli-sani study

Original Article, Int J Public Health

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### EVALUATION

#### **Q 1** Please summarize the main findings of the study.

It was a cohort study conducted in Italy aimed to evaluate the impact of polypharmacy consumption on hospital admission and mortality. Compared to individuals not in polypharmacy, those in polypharmacy therapy had higher hazards of mortality and hospitalization. PIPs mediated the association between polypharmacy and outcomes,

#### **Q 2** Please highlight the limitations and strengths.

Strengths:

- large cohort
- long study period
- robust analysis

Limitations:

- Old therapies
- Unclear definition of PIPs

#### **Q 3** Please provide your detailed review report to the authors. The editors prefer to receive your review structured in major and minor comments. Please consider in your review the methods (statistical methods valid and correctly applied (e.g. sample size, choice of test), is the study replicable based on the method description?), results, data interpretation and references. If there are any objective errors, or if the conclusions are not supported, you should detail your concerns.

I was invited to revise the paper entitled "Polypharmacy in older adults: the hazard with hospitalization and mortality is mediated by inappropriate prescriptions, findings from the Moli-sani study". It was a subanalysis of a well known Italian cohort study performed in Molise Region (Southern Italy). Authors aimed to evaluate the impact of polypharmacy therapy on mortality and Hospitalization.

The topic is interesting and relevant for public health. Authors clearly described the study design and the methodology appears robust.

Observations:

- The cohort started during years 2005–10 and the followup was concluded in 2015. After the study conclusion several new drugs were introduced, strongly improving clinical outcomes both for cardiac diseases (such as glifozines and liraglutide) and for cancer. This was a strong limitation of the study;
- About PIPs prescription, Authors should better describe its definition, avoiding to simply cite the Beer's criteria;
- I suggest to present a baseline characteristics table of each study group;
- How did Authors evaluated the adherence to Mediterranean Diet? It was unclear;
- Among covariates, Authors should consider also the deprivation index. Southern Italy has several rural areas and deprivation could also impact clinical outcomes.

#### PLEASE COMMENT

**Q 4** Is the title appropriate, concise, attractive?

yes

**Q 5** Are the keywords appropriate?

yes

**Q 6** Is the English language of sufficient quality?

yes

**Q 7** Is the quality of the figures and tables satisfactory?

Yes.

**Q 8** Does the reference list cover the relevant literature adequately and in an unbiased manner?)

yes

#### QUALITY ASSESSMENT

**Q 9** Originality



**Q 10** Rigor



**Q 11** Significance to the field



**Q 12** Interest to a general audience



**Q 13** Quality of the writing



**Q 14** Overall scientific quality of the study



#### REVISION LEVEL

**Q 15** Please make a recommendation based on your comments:

Major revisions.