Reviewer’s report

Title: Handgrip Strength, Depression, and All-Cause Mortality in Korean Older Adults

Version: 1 Date: 06 Nov 2018

Reviewer: Tomasz J. Kostka

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BGTC-D-18-00530 review1

Handgrip Strength, Depression, and All-Cause Mortality in Korean Older Adults

While the overall presentation of the revised version seems acceptable it is not possible to agree with the conclusions drawn.

The general conclusion from the first submission, ie. "…low HGS and depression contributed to increased all-cause mortality risk in Korean older adults, and the relationship of low HGS and depression with the risk of all-cause mortality was differently modulated by gender." seems fine.

Now the Authors state that "depression was independently associated with increased all-cause mortality risk, and the association was magnified by low HGS in Korean older men but not in Korean older women...". This statement is not justified by the presented data. Crude HR is clearly increased in men with exposure to both low HGS and depression and this additive effect seems higher than in women (though no interaction statistics has been provided).

However, it is the opposite with HR adjusted for confounders: the additive effect seems higher in women then in men. Statistical borderline significance in women is probably due to the differences in mortality rate which is much higher in men. Likewise, adjustment for several confounders may be misleading with limited number of deaths in women.

Therefore, one can see from bilateral associations that both low HGS and depression contribute to increased all-cause mortality (Tables 2 and 3) but stating anything more beyond "the relationships may be differently modulated by gender in this population and age group" is not justified.

Other comments:

Aim of the study: why the Authors "a priori" know that low HGS and depression influence all-cause mortality - was this established in previous studies in Korean adults?

Table 3: Death rate in depressed women: 122(3,4) - the percentage is probably wrong.
K-ADL has been adjusted for in the Table 4 but not presented in the Tables 1, 2 and 3.

**Are the methods appropriate and well described?**  
If not, please specify what is required in your comments to the authors.

Yes

**Does the work include the necessary controls?**  
If not, please specify which controls are required in your comments to the authors.

Unable to assess

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No

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