Author’s response to reviews

Title: The Role of Gender in the Association between Personality and Task Priority in Older Adults’ Dual-Tasking While Walking

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Author’s response to reviews:

Dear Editor:

We would like to thank the reviewers for their thorough review, which helped us to significantly improve the paper. Following the review, we re-ran all the analyses, further checked the data and extended the discussion as requested. Below we address (in bolded text) each of the reviewers’ comments; our revisions are highlighted in yellow in the manuscript.

Sincerely,

Maayan

Reviewer 1:

1. Where beta coefficients are provided in the text please also include 95%CI.

We’ve added CIs accordingly.

2. The description of mediation is improved. However using the formula given how was it decided if the variable was a mediator or not? eg was there a requirement for a certain magnitude of change?

We’ve added this information on page 10: “The inclusion of age, MOCA, body weight, physical activity and chronic disease in the model did not change the associations between personality traits and DT; thus, no mediating effects of the covariates were found.”
3. Line 221 and 228 page 10 - the beta coefficients reported appear incorrect. For example the authors state there was a negative association with conscientiousness and DT-cog but the beta coefficient is positive (0.87).

Following this comment, we rechecked the data and revised accordingly.

4. Table 2 - Now that the coding for gender is given I don’t quite understand the interpretation of the interactions. For example how do the authors determine that associations with higher conscientiousness and higher DT-cog was significant in women only? The interaction shows different effects for men and women but not that one is significant. The interpretation of the interactions needs to be carefully reviewed.

We ran the regression model separately for men and women, and the model was significant only for men with Extroversion and for women with Conscientiousness.

We further explain the interaction on page 10: The interaction was plotted according to Aiken et al. [42]. The plot (not shown) indicated that Extraversion was positively associated with DTC-motor for men only (β = .88, p < 0.05).

Reviewer 2:

Bettina Wollesen (Reviewer 2): Review 2 of manuscript number BGTC-D-17-00016

Introduction

The different theoretical DT models as reported by Lacour et at and Wollesen et al are still not discussed. However, this is necessary to understand the anticipated effects of the own DT-setting (arithmetic).

We discuss these models in the Background and the Discussion sections, on page 3, lines 56–63, and on page 13, lines 264–278.

The included reference by Wollesen & Voelcker-Rehage did not refer the models- it focused on DT training ?!


The following questions are still open- the answer to this question is not satisfying. . .

Did you perform a sample size calculation? You are performing a range of tests, how did you define statistical significance?
We have added this information: To calculate the sample size, we used G-Power analysis software [33] and considered an OLS regression model with five independent variables, six covariates and two interactions; defining a medium effect size ($f^2 = 0.15$) of $\alpha = 0.05$, a power of .80 required a total sample of 78 participants.

Discussion

I still do not agree with the conclusion on page 11 line 26-28. As the different DT models were not discussed sufficiently, the interpretation due to the model by Yogev-Seligman is vague. Moreover, the conclusion on page 13 line 1-3 about the resource allocation is a suggestion. As you did not measure resource allocation you can only suppose that there might be an association. I would agree if you argue that there might be influences of personality, however, this really needs further investigation. I would recommend discuss the models, the own cognitive DT and to interpret the results more carefully concerning the DT models and the missing sample size calculation.

Following Wollesen et al. 2016, we now further discuss the findings, and we’ve added the contribution of personality while considering the different model of attention division. Moreover, we’ve added an explanation for the power calculation of this sample.