October 21, 2020

Dear Dr. Shoeb,

Thank you for the opportunity to submit our revised manuscript (submission ID 862336a2-f5b8-4a47-8bc3-56f2e86eb4a6) which is now titled “Parity predicts biological age acceleration in post-menopausal women.” We also thank the Reviewers for their helpful and insightful comments, and believe that the corresponding edits have improved our manuscript. We detail our point-by-point responses to each Reviewer point below. To facilitate the review process, changes are highlighted in yellow here and in the manuscript file.

Here, we would like to highlight two important changes to the manuscript, that are also discussed in the Response to Reviewer documents. First, Reviewer 2 suggested including allostatic load (AL) as a fourth composite of biological aging. We have now included AL in addition to the three previously-calculated composites of biological aging. Importantly, we see consistent effects (or lack thereof) across all four biological aging measures.

Second, following our original submission we noticed an error in data processing wherein women aged 60 and older were excluded from our sample based on missing information on pregnancy status (NHANES item RIDEXPRG). Upon further inspection we realized these women were not asked this particular question in their diagnostic interview as a matter of NHANES procedure. As such, we have recorded these women as nonpregnant to prevent their exclusion from the analytical sample. This resulted in an additional 1,949 women with 0-7 live births. All analyses have been re-estimated with the inclusion of these women.

The addition of these women, as well as analytical changes suggested by Reviewers, have led to notable differences between our past and present results. Namely, whereas in our original manuscript we did not find linear or quadratic associations between parity and accelerated biological aging, we now see the hypothesized linear and quadratic effects of parity on biological age in post-menopausal women, but not in pre-menopausal women. These significant parity-biological age associations in post-menopausal women are observed across all 4 biological aging measures, bolstering confidence in our results. Our findings are discussed within the context of evolutionary biology theory, gerontology, and past epidemiological findings of similar observations.

Thank you in advance for your re-consideration of our article, and we look forward to hearing from you.

Sincerely,

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