Author's response to reviews

Title: The impact of early life factors on cognitive function in old age: The Hordaland Health Study (HUSK).

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Author's response to reviews: see over
We are most grateful for the detailed and constructive review of our revised manuscript. We have now revised the manuscript according to the reviewers’ comments. Below, our replies and details on changes made are outlined.

We look forward to the evaluation of the revised manuscript.

Best wishes
Jens Christoffer Skogen
Corresponding author
Reviewer's report # 1

The authors have very well responded to the prior comments. I have only a few minor suggestions.

Minor Essential Revisions

Abstract
1. Please correct the commas: “There is, however, a paucity…”

Response: We have now added the commas as suggested.

Methods
1. Please correct the years under “Study population”: “born during the period of 1925-27”

Response: The years have now been corrected.

2. Also on page 6: “In the second decade of the 20th century” or “In the 1920’s”

Response: We have now corrected the sentence to “In the second decade of the 20\textsuperscript{th} century…”

3. Page 7: “these records HAVE been employed”

Response: We have now corrected the sentence as suggested.

4. The sentence on page 10 is a bit unclear: “As a crude assessment of potential demographic differences between the (included and excluded?) participants we were able to trace (and) the rest of the (or excluded?) HUSK participants (and their/everyone’s?) gender, self-reported level of educational attainment and general health were obtained from HUSK.”

Do “gender, self-reported education and general health” refer to all HUSK participants, those included in the analyses or “the rest” (I believe “the rest” refers to those excluded from the main analyses of this study)?

Response: We agree this was unclear, and have changed this section to:

“Potential differences in the distribution of gender, self-reported level of educational attainment and general health were investigated between the HUSK participants with birth journal information (N=346) and participants without (N=1,810).”
5. Statistical analyses, page 11. Please indicate that it was parental SES in:
“Post-hoc analyses were also performed to investigate whether the effect of SES on cognitive function…” The same goes for results on page 13.

**Response:** We have now changed inserted “parental” as suggested.

Discussion
1. Page 16-17: “Given the high number OF associations tested,”

**Response:** We have no inserted “of”.

2. Page 17: “In this respect, it IS also interesting”

**Response:** We have now inserted “is”.
Reviewer's report # 2

Comments to the author

The paper is substantially improved now. Authors have answered sufficiently to all the points with regard to my comments. However I suggest for some minor revisions.

Major Compulsory Revisions

Nil

Minor Essential Revisions

In the methods section-Study population error in typing (the period of 192527..)

Response: Done.

In the methods section Mention whether the cognitive tests used were validated to suit the local population and culture.

Response: We have now changed the first sentence to indicate which cognitive tests that have been validated in Norwegian versions:

“HUSK included a cognitive test battery consisting of six tests. The cognitive tests are in wide use internationally and have been well validated, including the Norwegian versions of MMSE and KOLT (30-35).”

In methods section Early life factors-information obtained at birth...manual extraction of what??

Response: We have now changed the wording from “manual extraction” to “assisted delivery of the baby (use of forceps)”.
In methods section Additional information gathered---‘Compulsory only’ and post-compulsory’ indicate how many years of education completed under these categories

Response: We have now added information about years of education completed under these categories.

In table 3 and 4
-What does the value indicate and how it is derived? - Mention them in the foot note.

Response: We have now added the following in the heading of table 3 and 4: Linear regression models, unstandardized coefficients”.

-Give the units for separate cognitive tests. A reader must be able to understand the table without referring the text and vice versa.

Response: As the units for the different separate cognitive tests vary, and only indicate the “score” on that specific test, we have added information about the score-range to the footnotes of table 3 and 4:

“Test-specific raw scores for each cognitive tests (see methods section for further details). MMS: range (5, 12); Digit Symbol: range (2, 22); KOLT: range (6, 60); COWAT: range (3, 34); TMA: range (-154,-14; reversed); Block Design: range (2, 16).”

Discretionary Revisions
Nil