

Cognitive domains influenced by reproductive history in older men: Findings from the HELIAD study

P#3887

Sotiria Moza^{1a}, Mary Yannakoulia², Efthimios Dardiotis³, Paraskevi Sakka⁴, Nikolaos Scarmeas^{5, 6}, Georgios M. Hadjigeorgiou⁷, & Mary H. Kosmidis^{1b}

Apart from women, moderate reproductive history appears to be associated with late-life cognitive benefits also in men, indicating that biological, and social factors, may mediate these associations.

INTRODUCTION

- Studies have reported associations between reproductive factors and late-life cognitive outcomes in women.
- Evidence regarding reproductive history and cognition in men remains very limited (Basit et al., 2023).
- In the present study, we examined associations between reproductive history in men and cognitive performance across multiple domains in later life.

METHODS

Sample: 811 men (Mean^{AGE}= 74.43 ± 5.37 years, mean^{EDUCATION}= 8.92 ± 5.28 years)

Data source: Hellenic Longitudinal Investigation of Aging and Diet (HELIAD; Dardiotis et al., 2014)

Data:

- detailed reproductive, medical, and social histories
- comprehensive neuropsychological assessment scores grouped into Memory, Attention/Speed, Executive Functioning, Visuospatial and Language domains, and all summed to a Cognitive Total domain score.

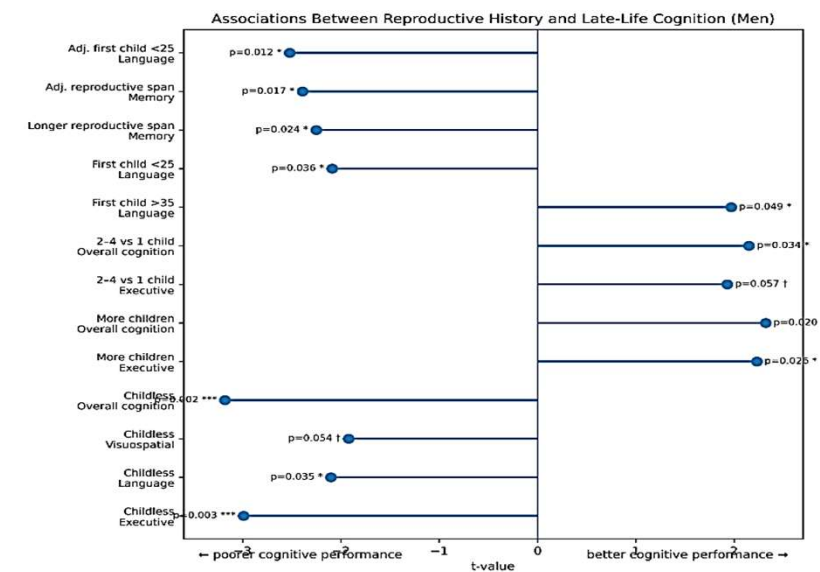
Analyses: Multiple linear regressions adjusted for age, education, medical comorbidities, genetic factors (presence of ApoE ε4 alleles), lifestyle behaviors (smoking, drinking, adherence to Mediterranean diet), and socioeconomic variables.

RESULTS

Childlessness and a longer reproductive span (first to last child's birth) predicted **poorer cognitive outcomes while childbearing and having 2–4 children** (versus one child) were associated with **better cognitive outcomes**. Having the first child after age 35 was associated with **better**, whereas having the first child before age 25 was associated with **poorer** cognitive performance.

**Details can be found in the Figure below.*

After adjustment for negative associations remained for reproductive span and memory (t=−2.39, p=.017) and for having the first child before age 25 and language (t=−2.52, p=.012). Following Bonferroni correction, no associations remained statistically significant.



Note. * p<.05; *** p<.01; † marginal (p=.05). After Bonferroni correction, none of the reported associations remained statistically significant.

CONCLUSION

The present findings indicate that reproductive factors are associated with late-life cognitive outcomes in men, not only in women, highlighting a relatively underexplored area. Further studies are needed to draw conclusions and design targeted interventions.

REFERENCES

- Basit, S., Wohlfahrt, J., & Boyd, H. A. (2023). Associations between parenthood and dementia in men and women: biology or confounding?. BMC neurology, 23(1), 90.
- Dardiotis, E., Kosmidis, M. H., Yannakoulia, M., Hadjigeorgiou, G. M., & Scarmeas, N. (2014). The Hellenic Longitudinal Investigation of Aging and Diet (HELIAD): rationale, study design, and cohort description. Neuroepidemiology, 43(1), 9-14.

CONTACT

- 1 Lab of Neuropsychology & Behavioral Neuroscience, School of Psychology, Aristotle University of Thessaloniki, Thessaloniki, Greece, asotimoza@psy.auth.gr, bkosmidis@psy.auth.gr
- 2 Department of Nutrition Science-Dietetics, Harokopio University, Athens, Greece, myiannak@hua.gr
- 3 Department of Neurology, Faculty of Medicine, University of Thessaly, Thessaly, Greece, edar@med.uth.gr
- 4 Athens Alzheimer Association, Athens, Greece, info@psakka.gr
- 5 1st Department of Neurology, Eginition Hospital, Medical School, National and Kapodistrian University of Athens, Athens, Greece.
- 6 Taub Institute for Research in Alzheimer's Disease and the Aging Brain, the Gertrude H. Sergievsky Center, Department of Neurology, Columbia University, New York, USA, ns257@columbia.edu
- 7 School of Medicine, University of Cyprus, Nicosia, Cyprus, hadjigeorgiou.georgios@ucy.ac.cy

Funded by the Hellenic Foundation for Research & Innovation (H.F.R.I.), No. 25521, Scientific Area: SA. 7 "Social Sciences", Category II, 3rd Call to Support Faculty Members and Researchers.

