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Introduction

The accumulation of adverse physiological, socioeconomic and psychosocial factors over the life-course may have adverse effects on cognitive function in later life. Such challenges might include stresses resulting from particular fertility pathways, but very little is known about this, especially for men. We investigated the association between fertility history and cognitive functioning in older men and women.

Methods

Sample: English Longitudinal Study of Ageing (ELSA) waves 1 - 5 (2002-2010) - nationally representative survey of men and women aged 50+ (*mean age = 63, SD = 9.2* in wave 1)

Cognitive functioning: Mean of standardized scores for immediate word list recall, delayed word list recall and verbal fluency (waves 1-5). Mean scores are shown in Figure 1.

Fertility history: Number of natural children (0, 1, 2, 3, 4+); for parents: young age first birth (<20/23); late age last birth (>34/39). The distributions are shown in Figure 2.

Covariates added in steps using latent growth curve:

Model 1: Age

Model 2: + Education; wealth

Model 3: + Limiting long-term illness; physical activity; smoking; depressive symptoms

Model 4: + Sense of control

Model 5: + Social support; married (5a) **OR** Social isolation (5b)

Figure 1 – Cognitive functioning in men and women

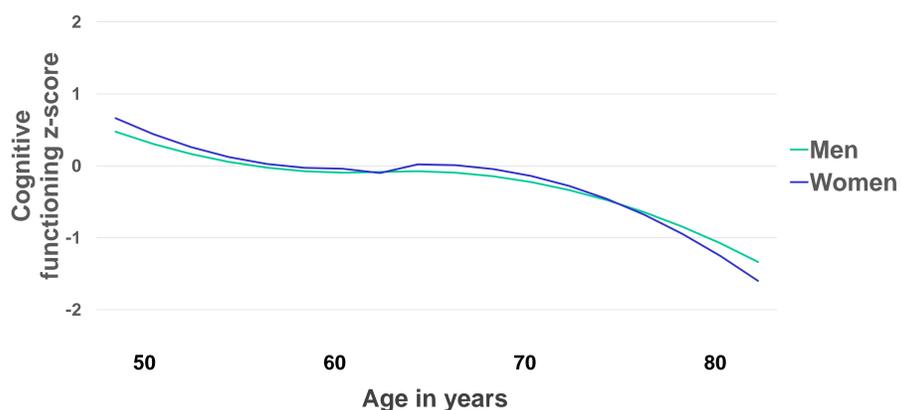
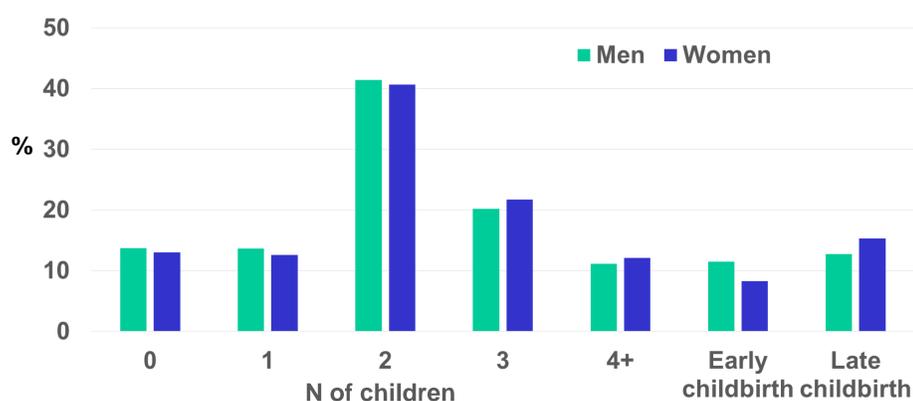


Figure 2 – Fertility history variables in men and women



Results

Cognitive functioning showed non-linear decline over time (Figure 1). Fertility history was associated with initial level of cognitive functioning in men (Table 1) and women (Table 2), but adjusting for the covariates weakened many of the associations. No associations were found between fertility history and linear and quadratic slope.

Table 1: Associations between fertility history and the initial level of cognitive functioning in men

	Model 1	Model 2	Model 3	Model 4	Model 5a	Model 5b
Number of children (ref = 2)						
0	-0.16***	-0.10***	-0.08**	-0.07**	-0.08**	-0.04
1	-0.09**	-0.05*	-0.04	-0.05	-0.05	-0.04
3	-0.05	-0.02	-0.02	-0.02	-0.02	-0.02
4	-0.11***	-0.00	0.01	0.01	0.01	0.01
Early childbirth	-0.06*	-0.06*	-0.05*	-0.06*	-0.05*	-0.05*
Late childbirth	-0.01	-0.01	-0.01	-0.00	-0.01	-0.00

Table 2: Associations between fertility history and the initial level of cognitive functioning in women

	Model 1	Model 2	Model 3	Model 4	Model 5a	Model 5b
Number of children (ref = 2)						
0	-0.06*	-0.07*	-0.06*	-0.06*	-0.07**	-0.06*
1	-0.12***	-0.07**	-0.06*	-0.06*	-0.06*	-0.06*
3	-0.09**	-0.04	-0.04	-0.04	-0.04	-0.04
4	-0.21***	-0.07*	-0.05	-0.05	-0.05	-0.05
Early childbirth	-0.21***	-0.08**	-0.06	-0.05	-0.05	-0.05
Late childbirth	0.10***	0.07**	0.07**	0.08**	0.08**	0.08**

Conclusions

The lower cognitive level among older people with high parity and older women who became mothers in their teens was largely accounted for by lower socioeconomic position. Socioeconomic position, health and social isolation explained the association between low parity and lower cognitive functioning in men. In women the association between low parity and lower cognitive functioning and late childbirth and better cognitive functioning call for more research on selection and potential beneficial hormonal and psychosocial long-term changes related to pregnancies and motherhood.