

Family size may influence cognitive functioning in later life

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A new study at Columbia University Mailman School of Public Health, and the Robert Butler Columbia Aging Center and Université Paris-Dauphine—PSL, found that having three or more versus two children

has a negative effect on late-life cognition. The results further indicated that this effect was strongest in Northern Europe, where higher fertility decreases financial resources but does not improve social resources in this region. This is the first to study the causal effect of high fertility on late-life cognition.

Until now fertility has not received much attention as a potential predictor of late-life cognition compared with other factors, such as education or occupation. The findings are published in the journal *Demography*.

"Understanding the factors that contribute to optimal late-life cognition is essential for ensuring successful aging at the individual and societal levels—particularly in Europe, where family sizes have shrunk and populations are aging rapidly," said Vegard Skirbekk, Ph.D., professor of population and Family health at Columbia Mailman School. "For individuals, late life cognitive health is essential for maintaining independence and being socially active and productive in late life. For societies, ensuring the cognitive health of the older population is essential for extending work lives and reducing [health care costs](#) and care needs," said Eric Bonsang, Ph.D., professor of economics at the Université Paris-Dauphine—PSL.

The researchers analyzed data from the Survey of Health, Aging and Retirement in Europe (SHARE) to examine the extent to which having three or more children versus two children causally affects late-life cognition. SHARE surveys representative samples of the older populations in 20 European countries and Israel including Austria, Belgium, Croatia, Czech Republic, Denmark, Estonia, France, Germany, Greece, Hungary, Italy, Luxembourg, the Netherlands, Poland, Portugal, Slovenia, Spain, Sweden, and Switzerland. Participants were aged 65 or older who had at least two [biological children](#).

Based on advanced econometric methods able to disentangle causality from simple associations, the evidence suggests that having three or more versus two children is related to worse late-life cognition. They also found that this effect is similar for both men and women.

Fertility may affect late-life cognition via several pathways. First, having an additional child often incurs considerable financial costs, reduces [family income](#) and increases the likelihood of falling below the poverty line, thus decreasing the standard of living for all [family members](#) and possibly causing financial worries and uncertainties, which could contribute to cognitive deterioration.

Second, having an additional child is causally related to women's lower labor market participation, fewer hours worked, and lower earnings. In turn, labor force participation—compared with retirement—positively affects cognitive functioning among men and women.

Third, having children decreases the risk of social isolation among older individuals which is a key risk factor for cognitive impairment and dementia, and often raises the level of social interaction and support, which can be protective against cognitive decline at older ages.

Finally, having children can be stressful, affect health risk behaviors and adversely affect adult cognitive development. Parents with more children can experience more stress, have less time to relax and invest in cognitively stimulating leisure activities. This can imply sleep deprivation for the parent.

"The [negative effect](#) of having three or more children on cognitive functioning is not negligible, it is equivalent to 6.2 years of aging," noted Bonsang. It suggests that the decrease in the proportion of Europeans having three or more children may have positive implications for the [cognitive health](#) of the older population.

"Given the magnitude of the effect, future studies on late-life cognition should also examine fertility as a prognosticator alongside more commonly researched predictors, such as education, occupational experiences, physical exercise, and mental and physical health," observed Skirbekk. "In addition, future studies should address the potential effects of childlessness or having one child on late-life cognition. We also need more information on the types of interactions, supports, and conflicts that occur between parents and children, which may influence cognitive outcomes."

More information: Eric Bonsang et al, Does Childbearing Affect Cognitive Health in Later Life? Evidence From an Instrumental Variable Approach, *Demography* (2022). [DOI: 10.1215/00703370-9930490](https://doi.org/10.1215/00703370-9930490)

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