Brain function of older adults catching up with younger generations, finds study

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According to research by Nottingham Trent University, the brain

function of older generations is improving, with the gap between old and young healthy adults lessening.

The three-part study reviewed evidence from 60 independent research papers regarding cognition in older and younger adults to explore trends and determine whether age differences are changing over time.

It also examined the results of a study by lead researcher Dr. Stephen Badham, Associate Professor in Psychology at NTU's School of Social Sciences, which assessed and compared the cognitive abilities of more than 1,000 older and younger adults at different points in time. The research is published in the journal *Developmental Review*.

Cognition relates to how the brain processes information and can be linked to education, physical activity, and diet quality. It is also a factor in diagnosing age-related diseases such as dementia.

The studies in the review examined the cognition of older adults over time, particularly comparing earlier born adults with later born adults. The research also explored whether an age-related reduction in brain function is changing over time by analyzing historic studies that compared young and older adults.

Some of the factors measured included verbal fluency, for example the ability to list words within a category; memory, such as delayed recall, delayed recognition, immediate memory and working memory; and cognitive speed.

The evidence points overall to improving and higher cognitive performance among older adults with eighty three of the measures used (68%) across the studies showing better performance in later cohorts of older adults than earlier cohorts, only six (5%) showed the reverse.

In contrast, findings show that that young adults' cognition remained relatively flat across time—closing the gap between generations.

The findings were linked to ongoing improvements in education, health care, nutrition and access to more mentally stimulating, digital environments, which might have previously applied mainly to younger adults.

Associate Professor Stephen Badham said, "Much existing research shows that IQ has been improving globally throughout the 20th century. This means that later-born generations are more cognitively able than those born earlier.

"However, there is growing evidence that time-based increases in IQ are leveling off, such that in the most recent couple of decades, young adults are no more cognitively able than those born shortly beforehand.

"As a result, the current data show that young adult advantages in cognition relative to older adults, such as memory ability and speed of processing, are now getting smaller over time. This means that when we compare young and older adults today, the gap is smaller than it was in the past.

"Therefore, the decline an individual might expect to experience as they become older is smaller than originally thought. In other words, we can expect to be more cognitively able than our grandparents were when we reach their age.

"Finally, as older adults are performing better in general than previous generations, it may be necessary to revise definitions of dementia that depend on an individuals' expected level of ability. This is because dementia is defined as cognitive ability that is below normal and the current results suggest that as healthy older adults become more

cognitively able, we may need to revise our definition of normal when diagnosing dementia."

More information: Stephen P. Badham, The older population is more cognitively able than in the past and age-related deficits in cognition are diminishing over time, *Developmental Review* (2024). DOI: 10.1016/j.dr.2024.101124

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