MedicalXpress

From architect to social worker: Complex jobs may protect memory and thinking later on

November 19 2014

Credit: Human Brain Project

People whose jobs require more complex work with other people, such as social workers and lawyers, or with data, like architects or graphic designers, may end up having longer-lasting memory and thinking

abilities compared to people who do less complex work, according to research published in the November 19, 2014, online issue of *Neurology*, the medical journal of the American Academy of Neurology.

"These results suggest that more stimulating work environments may help people retain their thinking skills, and that this might be observed years after they have retired," said study author Alan J. Gow, PhD, of Heriot-Watt University and the Center for Cognitive Aging and Cognitive Epidemiology in Edinburgh, Scotland. "Our findings have helped to identify the kinds of job demands that preserve memory and thinking later on."

For the study 1,066 Scottish people with an average age of 70 had their memory and thinking abilities tested at the University of Edinburgh. The tests looked at memory, processing speed and general thinking ability. Researchers also gathered information about the jobs participants held. The job titles were assigned scores for the complexity of work with people, data and things. For example, complex jobs might involve coordinating or synthesizing data, while less complex jobs might involve copying or comparing data. In terms of working with others, more complex roles might involve instructing, negotiating or mentoring, while less complex jobs might involve taking instructions or helping.

The analysis used levels of complexity according to the Dictionary of Occupational Titles. Examples of jobs that score highly for the complexity of work with people are: lawyer, social worker, surgeon, probation officer. Examples of jobs that have lower scores for complexity of work with people are: factory worker, bookbinder, painter, carpet layer.

Examples of jobs that score highly for the complexity of work with data are: architect, civil engineer, graphic designer or musician. Examples of jobs that have lower scores for complexity of work with data include:

construction worker, telephone operator or food server.

Researchers also had IQ scores from tests taken when the participants were 11 years old.

The study found that participants who held jobs with higher levels of complexity with data and people, such as management and teaching, had better scores on memory and thinking tests. The results remained the same after considering IQ at age 11, years of education and the lack of resources in the environment the person lived in (based on information from the area in terms of crime and access to services, for example).

Overall, the effect of occupation was small, accounting for about 1 percent to 2 percent of the variance between people with jobs of high and low complexity, which is comparable to other factors such as the association between not smoking and better thinking skills in later life.

Researchers have debated whether a more stimulating environment may build up a person's "cognitive reserve," acting as a buffer allowing the brain to function in spite of damage, or whether people with higher thinking skills are those who are able to go into more challenging occupations. "These results actually provide evidence for both theories," Gow said. "Factoring in people's IQ at age 11 explained about 50 percent of the variance in thinking abilities in later life, but it did not account for all of the difference. That is, while it is true that people who have higher cognitive abilities are more likely to get more complex jobs, there still seems to be a small advantage gained from these complex jobs for later thinking skills."

Provided by American Academy of Neurology

Citation: From architect to social worker: Complex jobs may protect memory and thinking later