

Poverty may be risk factor for reduced cognitive function in midlife

September 28, 2016 - 4:55pm

By Suzanne Leigh [1] | *Originally published on UCSF News* [2]



Kristine Yaffe, MD [3]

Persistent poverty in young adulthood and midlife may elevate one's risk for lower cognitive function by age 50, according to the results of a study that tracked income levels of close to 3,400 adults over a 25-year duration.

Researchers from UC San Francisco and five other institutions questioned participants six times over the years about the amount of time they had spent in poverty, defined as less than 200 percent of the federal poverty level. This translates to an annual income of \$44,630 for a four-person household in 2010, the last year they were surveyed.

The participants, who were aged 18 to 30 at recruitment, were categorized according to their poverty frequency levels: never, less than one third of the time, more than one third of the time, or all of the time. The results of the study were published in the *American Journal of Preventive Medicine* [4] on Sept. 27, 2016.

Previous research has shown that exposure to poor socioeconomic conditions in childhood and adulthood is associated with cognitive deficits, but most of these studies have involved older adults, said senior author Kristine Yaffe, MD [3], professor in the UCSF departments of Psychiatry, Neurology, and Epidemiology and Biostatistics. We wanted to see if economic adversity impacts cognitive health earlier in the life course.

Financial hardship also implicated in cognition

The researchers found that participants whose income placed them in the all-of-the-time poverty bracket had lower cognitive scores than those who had never been in poverty. They scored an average 0.92 points less on verbal memory, from a range of zero to 15; 11.60 points less on processing speed, from a range of 8 to 125; and fared slightly lower on a test that measured the ability to respond to some stimuli while suppressing others.

Similar differences in cognition were found when the researchers compared the participants who reported they always experienced financial hardship, such as difficulty paying for food and heating, with those who had never experienced it.

Maintaining cognitive abilities is a key component of health, said first author Adina Zeki Al Hazzouri, PhD, of the Division of Epidemiology, Department of Public Health Sciences at the University of Miami. Findings from this relatively young cohort place economic hardship as being on the pathway to cognitive aging and as an important contributor to premature aging among economically disadvantaged populations.

Small difference at 50 may lead to bigger difference later

Our findings reveal a clear graded relationship such that cognitive performance, and processing speed in particular, was worse with cumulative exposure to economic adversity, said Yaffe, who is also Chief of Neuropsychiatry at the San Francisco Veterans Affairs Medical Center.

While the difference in cognitive function was small between the group that had always been in poverty and the group that never been in poverty, the real issue is what do those differences mean over time. If there is a small difference at age 50, there may be a significant difference later in life. It's important that those in long-term poverty are followed with a view to possible interventions.

The 3,383 participants were recruited from the University of Alabama at Birmingham; the University of Minnesota in Minneapolis; Northwestern University in Chicago; and Kaiser Permanent in Oakland, Calif.

The study was supported by grants from the National Institutes of Health; National Institute on Aging; National Heart, Lung and Blood Institute; and the UCSF Center for Aging in Diverse Communities.

The study's co-authors are Tali Elfassy, MSPH, of the University of Miami; Stephen Sidney,

MD, MPH, of Kaiser Permanente in Oakland, Calif.; David Jacobs, PhD, of the University of Minnesota in Minneapolis; and Eliseo J. Perez Stable, MD, of the National Institute of Minority Health and Health Disparities in Bethesda, Md.

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[3] <http://profiles.ucsf.edu/kristine.yaffe>

[4] <http://www.ajpmonline.org/article/S0749-3797%2816%2930329-4/fulltext>

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