

Adolescent depression and reduced cognitive performance



MONTREAL, March 6, 2018 – Recent studies have shown that major depression is associated with a series of neuropsychological deficits, such as attention, memory, decision-making and behavioural inhibition deficits in adults and seniors. Although the rate of clinical depression in children and young teens is low, there are often sub-clinical symptoms of depression that emerge around age 13. A new study by researchers at CHU Sainte-Justine and Université de Montréal, published in the *Journal of Affective Disorders*, shows that early-onset depressive symptoms can affect cognition in adolescents. Depression in adolescence is associated with poorer performance in delayed recall memory and perceptual reasoning tasks. “Our findings suggest that adolescent onset depression is associated with reduced cognitive development, and these detrimental effects are even more prevalent in early adolescence,” specifies **Mohammad H. Afzali**, PhD, first author of the study.

To understand the connection between depression and neuropsychological functioning in adolescence, the research team followed a sample of 3,826 Canadian adolescents over a period of four years. “Using multi-level evaluation models, we were able to observe the concurrent and subsequent effects of depressive symptoms on the initial level and evolution of four neuropsychological domains—spatial working memory, delayed recall memory, perceptual reasoning, and inhibitory control,” explains **Patricia Conrod**, Researcher at CHU Sainte-Justine and Professor in the Department of Psychiatry at Université de Montréal. Findings suggest that over and above any potential pre-existing relationship between depression and cognitive functions, increases in depressive symptoms in a given year were associated with poorer performance in delayed recall memory and perceptual reasoning tasks that same year. Such symptoms were also shown to have longer-lasting effects on spatial working memory performance, which were observed even if depressive symptoms reduced to baseline levels. This demonstrates the persistent effects of depressive symptoms in certain cognitive areas.

The economic burden of mental disorders in Canada is estimated at 51 billion dollars per year. Psychopathology in adolescents carry high economic costs in terms of loss of productivity and poorer quality of life in relation to health, rehabilitation and incarceration. In better understanding the correlation that exists between mental disorders at adolescence and cognitive performance, the research team hopes to implement an early intervention program with young people who are at risk. “The sooner these vulnerable young people are provided with preventative interventions, the more we can protect them from the negative consequences of depression on neuropsychological outcomes,” says Mohammad H. Afzali.

In light of these findings, the researchers are highlighting the need for an in-depth examination of the neuropsychological correlates of depressive symptoms in adolescents. However, “adolescence is a time of great physical and emotional changes, and important neuromaturation,” adds Patricia Conrod. “Our findings suggest that depression has real, potentially long-term consequences on the child’s neuropsychological functioning. They highlight the need to increase early and preventive interventions in childhood depression.”

About the study

The article entitled “Effect of depressive symptoms on the evolution of neuropsychological functions over the course of adolescence” was published in the *Journal of Affective Disorders* in March 2018. The first author is Mohammad H. Afzali, PhD, postdoctoral research fellow, under Patricia Conrod. The primary author is Patricia Conrod, PhD, Researcher and Director of the Lab Venture laboratory at CHU Sainte-Justine, Full Professor in the Department of Psychiatry of Université de Montréal and holder of the Chair Dr Julien/Fondation Marcelle et Jean Coutu en pédiatrie sociale en communauté of Université de Montréal. The study was funded by the Canadian Institutes of Health Research (CIHR). Mohammad H. Afzali received a postdoctoral fellowship from the CIHR. Maeve O’leary-Barrett received a postdoctoral fellowship from the Luxembourg National Research Fund, and Patricia Conrod and Jean R. Séguin were supported by a Research Scholars – Senior Grant from the Fonds de recherche du Québec – Santé (FRQS). The authors do not report any biomedical financial interest or potential conflict of interest. The sponsors did not play any part in the preparation of the study, data collection, analysis, interpretation of findings, drafting of reports or submission of manuscripts.

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