

Low fruit and vegetable intakes and higher body fat linked to anxiety disorders

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Credit: Mary LaFrance/public domain

New research from the Canadian Longitudinal Study on Aging shows that adults who have low fruit and vegetable intakes have a higher likelihood of being diagnosed with an anxiety disorder.

"For those who consumed less than 3 sources of fruits and vegetables

daily, there was at least at 24% higher odds of [anxiety](#) disorder diagnosis," says study lead Karen Davison, [health](#) science faculty member, nutrition informatics lab director at Kwantlen Polytechnic University, (KPU) and North American Primary Care Research Group Fellow.

"This may also partly explain the findings associated with body composition measures. As levels of total body fat increased beyond 36%, the likelihood of anxiety disorder was increased by more than 70%," states co-author Jose Mora-Almanza, a Mitacs Globalink Intern who worked with the study at KPU.

"Increased body fat may be linked to greater inflammation. Emerging research suggests that some [anxiety disorders](#) can be linked to inflammation," says Davison.

Other factors associated with anxiety disorders among mid-age and older Canadians

In addition to diet and body composition measures, the prevalence of anxiety [disorders](#) also differed by gender, [marital status](#), income, immigrant status and several [health issues](#).

One in nine women had an anxiety disorder compared to one in fifteen men.

"Our findings are in keeping with previous research which has also indicated that women are more vulnerable to anxiety disorders than men," says co-author Karen Kobayashi, Professor in the Department of Sociology and a Research Affiliate at the Institute on Aging & Lifelong Health at the University of Victoria.

The prevalence of anxiety disorders among those who had always been single (13.9%) was much higher than among those who were living with a partner (7.8%). Approximately one in five respondents with household incomes under \$20,000 per year had anxiety disorders, more than double the prevalence of their richer peers.

"We were not surprised to find that those in poverty had such a high prevalence of anxiety disorders; struggling to afford basics such as food and housing causes relentless stress and is inherently anxiety inducing," says co-author Hongmei Tong, Assistant Professor of Social Work at MacEwan University in Edmonton.

Individuals with three or more health conditions had fivefold the prevalence of anxiety disorders in comparison to those with no chronic conditions (16.4% vs 3%). Those in chronic pain had double the prevalence of anxiety disorders in comparisons to those who were free of pain.

"Chronic pain and multiple health conditions make life very unpredictable and can be anxiety producing. One never knows whether health problems will interfere with work or [family responsibilities](#) and many activities become more challenging and time consuming," says co-author Shen (Lamson) Lin, a doctoral student at University of Toronto's Factor-Inwentash Faculty of Social Work (FIFSW).

Immigrants to Canada had a lower prevalence of anxiety disorders compared to their peers born in Canada (6.4% vs 9.3%).

"Immigrants may face a myriad of challenges associated with resettling in a new country, including language barriers, poverty, difficulties in getting qualifications recognized, and limited social support, so it seems counter-intuitive that they should have a lower likelihood of anxiety disorders than those born in Canada. It may be that potential immigrants

with anxiety disorders would find the challenges of relocation too anxiety-inducing and would therefore not choose to immigrate, so there is a 'self-selection' for those with lower anxiety," says senior author, Esme Fuller-Thomson, professor at FIFSW and director of the Institute for Life Course & Aging. Fuller-Thomson is also cross-appointed to the Department of Family and Community Medicine and the Faculty of Nursing.

The study team analyzed data from the Canadian Longitudinal Study on Aging which included 26,991 men and women between the ages of 45 and 85. The article was published this week in the *International Journal of Environmental Research and Public Health*.

An important limitation of the study was that the assessment of anxiety disorders was based upon self-reporting of a medical diagnosis. The authors also conducted multivariate analyses taking into account the use of a family physician in the past year to address the possibility of under-reporting of anxiety disorders among those who rarely visited health professionals. This adjustment was not found to substantially change the associations discussed above.

"It is estimated that 10% of the global population will suffer from anxiety disorders which are a leading cause of disability" says Karen Davison "Our findings suggest that comprehensive approaches that target health behaviors, including diet, as well as social factors, such as economic status, may help to minimize the burden of anxiety disorders among middle-aged and older adults, including immigrants."

More information: Karen M. Davison et al, Nutritional Factors, Physical Health and Immigrant Status Are Associated with Anxiety Disorders among Middle-Aged and Older Adults: Findings from Baseline Data of The Canadian Longitudinal Study on Aging (CLSA), *International Journal of Environmental Research and Public Health*

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