

Depression symptoms increase during medical internship

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The percentage of clinicians who meet criteria for depression appears to increase significantly during medical internship, according to a report posted online that will appear in the June print issue of *Archives of General Psychiatry*, one of the JAMA/Archives journals. Increased work hours, medical errors, genetic predisposition and receiving a medical education in the United States are among factors that appear to be associated with depressive symptoms among medical interns.

"We know that internship is a time of high stress," says Srijan Sen, M.D., Ph.D., assistant professor in the Department of Psychiatry at the University of Michigan Medical School. "While doing my internship, it was clear to me that even people who seemed to be well adjusted during our initial orientation started to struggle as the internship progressed; never smiling, and they were having difficulty with sleep and losing or gaining a lot of weight."

Although some studies have assessed rates of depression among medical interns and found them higher than in the general population, few have explored the specific factors responsible.

To better understand the reasons behind what Sen observed during his internship at Yale University, he and fellow intern at the time, Constance Guille, M.D., and colleagues studied 740 interns entering residency programs in 13 U.S. hospitals in 2007 or 2008.

Study participants completed a secure online survey to assess their

symptoms of depression, along with personal and medical education factors and several psychological measures. After three, six, nine and 12 months, the interns completed follow-up surveys regarding [depressive symptoms](#), internship variables (such as work hours and perceived [medical errors](#)) and other life stresses. A subgroup of participants (63 percent) provided saliva samples for [genetic analysis](#).

Average depression scores increased during internship; on a scale of zero to 27, where scores of 10 or greater suggested depression, the average score increased from 2.4 before internship to an average of 6.4 during internship. In addition, the proportion of participants who met criteria for depression increased from 3.9 percent before internship to an average of 25.7 percent during internship.

A series of factors measured prior to internship: female sex, U.S. medical education, difficult early family environment and history of major depression and during internship: increased work hours, perceived medical errors and stressful life events, were associated with a greater increase in depressive symptoms during internship, according to the study. A number of factors, such as medical specialty and age, were not associated with the development of depression.

In addition to internship factors, researchers also assessed the genetic make-up of subjects at a well-studied variant within the serotonin transporter gene called 5HTTLPR. While researchers found no difference in depression among participants in the low-stress period before internship, subjects with the less functional version of the serotonin transporter gene reported a significantly greater increase in depressive symptoms during internship.

This work adds to growing body of studies designed to identify genetic factors that predispose individuals to developing depression under stress.

"With effective interventions currently available to help prevent depression, the predictive factors identified in this study could allow at-risk interns to take steps before they start to have symptoms to lower their chances of developing [depression](#)," Sen says. "This information may also be valuable to medical residency program directors as they seek to make their programs healthier, both for their medical trainees and the patients that they treat."

More information: Arch Gen Psychiatry. 2010; 67[6]:
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