

Emotional flatness can be mistaken for depression in Alzheimer's patients

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Watching a loved one struggle with Alzheimer's disease can be a painful process, but for the patient, the experience may be a muted one.

Alzheimer's patients can appear withdrawn and apathetic, symptoms often attributed to [memory problems](#) or difficulty finding the words to communicate.

A new University of Florida study found that they may also have a decreased ability to experience emotions; that is, they do not feel emotions as deeply as their healthy peers. This finding in a small group of patients may be useful for doctors assessing whether Alzheimer's patients are clinically depressed.

The study, published online in the spring issue of the Journal of Neuropsychiatry & Clinical Neurosciences, suggests that when Alzheimer's patients are asked to place an [emotional](#) value on pictures, they measure the pleasant images as less pleasant and the negative scenes as less negative compared with a control group of normal elderly people. This emotional flatness could be incorrectly interpreted as a symptom of depression.

“We found that the Alzheimer's patients as a rule tend to go more toward the middle,” said Dr. Kenneth Heilman, senior author of the paper and a professor of neurology at the College of Medicine and UF's McKnight Brain Institute. “They don't feel as positive toward the positive pictures or as negative toward the negative ones. They're not depressed, but their

emotional experience appears to be flattened.”

Further research is needed, but the findings could be valuable for clinicians trying to learn whether a patient is depressed as well as for families concerned about a loved one’s apparent indifference.

The study presented seven patients with Alzheimer’s disease pictures of positive and negative scenes, such as babies and spiders, and asked them to rate each picture. Patients recorded their emotional reaction to the picture by marking on a piece of paper with a happy face on one and a sad face on the other. The closer their mark was to either emoticon, the stronger they felt.

Most of the time they placed their mark in the appropriate direction, said Heilman, who is also director of the UF Cognitive and Memory Disorders Program.

“For a puppy, they wouldn’t rate it as high (as the control group members did), but they would put it more toward the happy face, showing that they appear to understand the picture,” he said. “But they also made more inconsistent markings than the normal control group, such as when being shown a spider putting their mark toward the happy face.”

The study’s authors proposed several reasons for why the Alzheimer’s patients show a flattened affect.

Previous studies reveal that such symptoms of Alzheimer’s are caused by deterioration of neural systems, Heilman said.

“Even in its early stages, Alzheimer’s destroys the areas of the brain that produce chemical neurotransmitters such as norepinephrine, which is essential for experiencing fear and anger,” he said. “If we prescribed medication to patients that replace or increase these neurotransmitters,

maybe they would better experience emotions.”

Misinterpreting the images or not understanding the meaning of some pictures — a comprehension disorder — could have skewed the results, but the volunteers were given a naming test to minimize this possibility. Though Alzheimer’s patients often suffer from depression, researchers ruled it out as a cause for lower emotional response based on yearly face-to-face evaluations conducted throughout the study.

The Alzheimer’s Association estimates 5.1 million Americans age 65 and older suffer from Alzheimer’s disease, a number that is expected to rise to 13.5 million by 2050 if treatments are not improved.

“One important implication of this work is that when an Alzheimer’s patient appears emotionally blunted, the clinician or caregiver should not assume the patient is depressed and automatically treat with antidepressants, as other organic factors could be at work,” said Dr. Todd Feinberg, a professor of clinical neurology and psychiatry at Beth Israel Medical Center in New York, who did not participate in the research.

The findings also bring new understanding to families of Alzheimer’s patients.

“Caregivers also should be helped to understand that it is not ‘their fault’ if a loved one seems emotionally indifferent to them,” Feinberg said.

Heilman and his colleagues used a more thorough approach to distinguish depression from Alzheimer’s symptoms, said Dr. Yonas Geda, an associate professor of neurology and psychiatry at the Mayo Clinic College of Medicine in Rochester, Minn., who reviewed the study. In larger studies, thoroughness is sacrificed in favor of large sample size by using questionnaires of 10 or 20 questions answered by

caregivers or patients themselves.

“Unlike questionnaire-based studies, Heilman and his colleagues’ study raises serious questions about potential neurobiological issues to account for the observed behavior,” Yonas said. “Can we replicate this thorough face-to-face evaluation in a larger sample size? Perhaps computers and technology may help us to administer a rigorous evaluation that Heilman’s team did on a larger sample size.”

Yonas also suggested that futures studies use neuroimaging techniques along with the picture test to probe a little more into the mechanism of experiencing emotion.

Provided by University of Florida

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