

Depressed Elderly Adults Who Attempt Suicide Ignore Previous Experience, Pitt Study Finds

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PITTSBURGH, March 15 – Being too focused on the present and not factoring past experience into decisions could contribute to suicide attempts in elderly depressed adults, according to a study by University of Pittsburgh School of Medicine and University of Cambridge researchers published today in the American Journal of Psychiatry.

Using a computerized test of the ability to change behavior based on positive and negative feedback, researchers found that those who have attempted suicide performed poorly.

“This is an important step forward in understanding why some people with depression take their own lives while others do not,” said Alexandre Y. Dombrovski, M.D., the study’s lead author and assistant professor of psychiatry in Pitt’s Department of Psychiatry.

Suicidal acts are most commonly linked to depression. While two-thirds of older adults who attempt suicide suffer from depression, the severity of the depression alone does not explain suicidal behavior. Identifying factors that are specific to suicidal behavior could help predict which individuals with depression are most at risk.

The researchers assessed 65 individuals, age 60 and older, using a computerized test that requires the individuals to make the best possible choices in an uncertain and changing environment. The task is made difficult by including occasional misleading feedback, where the participants are told that they are wrong after a correct response, and by changing the rule midway through the task. The study included participants who had attempted suicide, as well as those who were depressed and had contemplated suicide but hadn’t attempted it; who were depressed but not suicidal; and who were neither depressed nor suicidal.

The researchers found that most of the participants who had attempted suicide were able to learn the initial choice rule on the task, but had great difficulty re-learning it when the rule changed and were more sensitive to the misleading feedback. A smaller group of suicide attempters tended to continue following the old rule despite negative feedback for wrong answers. By building a machine-learning algorithm that matched the behavior of every participant, the researchers discovered that participants who had attempted suicide focused excessively on the last trial, ignoring prior experiences. Participants who were depressed but had never attempted suicide did not show the same problem and resembled healthy elderly volunteers.

“We consider this an important advance in understanding the decision processes in those elderly depressed patients who may be at high risk of attempting suicide,” said Dr. Dombrovski. “Older adults vulnerable to suicide seem to make overly present-focused decisions, ignoring past experiences. This may explain why people in a suicidal crisis fail to consider important deterrents and see suicide as the only solution. We are

now using brain imaging to look at brain activity in suicidal older adults as they make decisions. We hope that this research will help doctors develop talk therapies, medications and brain stimulation treatments for suicidal, depressed older people.”

Co-authors of the study include Katalin Szanto, M.D., Greg J. Siegle, Ph.D., Meryl A. Butters, Ph.D., and Naho Ichikawa, M.S., all from [Western Psychiatric Institute and Clinic](#) of UPMC and the University of Pittsburgh Department of Psychiatry; Barbara J. Sahakian, Ph.D., and Luke Clark, D.Phil, from the MRC/Wellcome Trust Behavioural and Clinical Neuroscience Institute, University of Cambridge, England.

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[Western Psychiatric Institute and Clinic \(WPIC\)](#) is considered to be one of the nation’s foremost university-based psychiatric care facilities and one of the world’s leading centers for research and treatment of mental health disorders. WPIC houses the Department of Psychiatry of the University of Pittsburgh School of Medicine and is the flagship of UPMC Behavioral Health, the psychiatric specialty division of the University of Pittsburgh Medical Center.

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