

For Better Understanding, Researcher Simulates Schizophrenia in Healthy People

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To better understand schizophrenia, a University of Missouri-Columbia psychology researcher simulated one of its more common symptoms - the inability to speak clearly or respond to questions in a precise manner - in people who don't have the illness.

"This study is about working with people who are not schizophrenic and observing whether, under experimental conditions, we could make them act like people with schizophrenia," said John Kerns, assistant professor of clinical psychology in the College of Arts and Science. "In the lab, we challenged their working memory ability as they spoke and simulated deficits found within people with schizophrenia."

He discovered that communication disturbances, or poor communication skills, occur - even in healthy people - when rigorous demands are placed on working memory, which is the brain's ability to maintain information. The study also revealed that an even greater degree of speech disorganization happens when other mental processing requirements are combined with working memory stress.

Findings from this study are consistent with a recent experiment related to the illness. In May, Kerns established a link between poor communication skills and working memory in people with schizophrenia. However, no causation was established because the study was correlational and working memory ability or level of symptoms could not be experimentally manipulated.

"It's two ways of reaching the same conclusion," he said. "In the study with patients, we find that working memory correlates with disorganized speech. With healthy people, working memory manipulation causes an increase in disorganized speech."

There were 82 healthy participants in the study. While conducting speech tasks, Kerns manipulated the levels of stress on their brains. Participants were asked to talk while listening to letters through a set of headphones. In another phase of the study, they looked at a picture on two separate occasions and were asked to tell two completely different stories about the picture. The sessions were recorded and Kerns' research team evaluated the data and scored the speech impairments.

"Potentially, performing any secondary task, while speaking, will throw off your speech because of a general increase in cognitive demands," Kerns said. "We wanted to compare conditions and see if doing any task disrupts speech, or is it specifically working memory demands. We found that it was only the working memory demands that caused an increase in disorganized speech."

The current study, "Experimental Manipulation of Cognitive Control Processes Causes an Increase in Communication Disturbances in Healthy Volunteers," will be published in the July issue of *Psychological Medicine*.

Kerns' previous study, "Verbal Communication Impairments and Cognitive Control Components in People with Schizophrenia," was published in the May issue of the *Journal of Abnormal Psychology*.

Source: University of Missouri

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