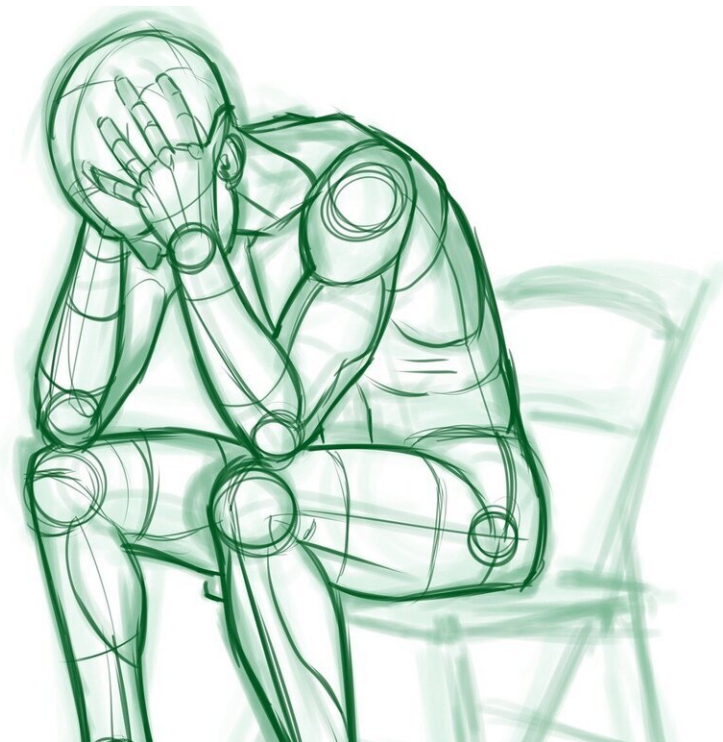


Potential vocal tracking app could detect depression changes

June 9 2021



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According to the World Health Organization, more than 264 million people worldwide have Major Depression Disorder and another 20 million have schizophrenia.

MDD and schizophrenia are among the most common precursors to

suicide and, according to a 2018 CDC report, suicide is the second-leading cause of death in youth and [young adults](#) between 10 and 34 years of age, the second-leading cause of death of Black children between 10 and 14 years of age, and the third-leading cause of death for Black adolescents between 15 and 19 years of age.

During the 180th Meeting of the Acoustical Society of America, which will be held virtually June 8-10, Carol Espy-Wilson, from the University of Maryland, will discuss how a person's mental health status is reflected in the coordination of [speech](#) gestures. The keynote lecture, "Speech Acoustics and Mental Health Assessment," will take place Tuesday, June 8.

A speech inversion system maps acoustic signals to vocal track variables, showing the timing and spatial movement of speech gestures. Espy-Wilson said speech coordination changes when a person becomes depressed.

"Depression is accompanied by psychomotor slowing. As a result, they cannot think as fast, and their speaking rate is slowed with more and longer pauses than if they are not depressed," Espy-Wilson said. "This results in a simpler coordination of the articulators. What this means is that there is less coproduction of neighboring sounds and more of the sounds are fully articulated, that is, the articulators reach their targets."

The use of machine-learning techniques can help provide data for a deep-learning model for mental health classification. The goal of the research is to use technology, perhaps in the form of a smartphone application, to help patients and those around them stay informed about their mental [health](#), something Espy-Wilson said would have a huge impact.

"Ideally, therapists will give the app to patients who suffer with MDD when they are in remission or only have mild [depression](#)," she said.

"That is, they are in a state where they are likely to use it regularly, so their [mental health](#) status can be tracked, and the appropriate people will be alerted if the app detects that the severity of the depression is increasing.

"In that way, we hope there will be intervention before their depression increases to a level where they may consider suicide."

More information: acousticalsociety.org/asa-meetings/

Provided by Acoustical Society of America

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