

# Researchers work to better measure delirium severity in older patients

July 8 2020

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In a study published in the journal *Dementia and Geriatric Cognitive Disorder*, researchers reported on their effort to improve and validate tools used to assess the severity of a condition called delirium, an acute

confusional state often experienced by older hospitalized patients. The aim was to more accurately define methods for detecting and measuring delirium symptom severity, which could in turn lead to improved prevention and treatment for patients at risk. Sharon K. Inouye, M.D., M.P.H., Director of the Aging Brain Center at the Hinda and Arthur Marcus Institute for Aging Research at Hebrew SeniorLife, was principal investigator. Lead author was Sarinnapha M. Vasunilashorn, Ph.D., Assistant Professor of Medicine at Harvard Medical School (HMS) and the Division of General Medicine at Beth Israel Deaconess Medical Center (BIDMC), and member of the Aging Brain Center Working Group at the Marcus Institute.

Delirium is a clinical syndrome characterized by acute decline in cognition, which can present as inattention, disorientation, lethargy or agitation, and perceptual disturbance. Delirium is common among older hospitalized patients, and can lead to poor outcomes, including prolonged hospital stays, deep psychological stress for patients and their families, functional decline, and in worst cases, death. With in-hospital mortality rates for patients with [delirium](#) of 25-33 percent and annual health care costs in excess of \$182 billion in the U.S. alone, delirium has garnered increasing attention as a worldwide public health and patient safety priority.

In large part because of Dr. Inouye's pioneering research on delirium, the condition has shown to be preventable, or at minimum its severity mitigated, with proper patient assessment and effective protocols included to detect and treat symptoms. Although several delirium severity assessment tools currently exist, most have been developed without use of advanced measurement methods and have not been rigorously validated.

Accurately identifying the severity of delirium a patient experiences is critical to developing effective treatment. For any medical disorder,

severity is a complex topic and may mean different things to different stakeholders. From a clinical perspective, severity may reflect the likelihood of an adverse outcome or the urgency for symptom treatment. For patients and their families, severity may impact the level of distress they experience or impair patient function and recovery.

Researchers in this study performed a literature review and used an expert panel process and advanced data analytic techniques to identify a set of items for use in developing a new delirium severity instrument. The process revealed several characteristics of an ideal instrument. It should address a broad spectrum of delirium symptoms, should be proven to be reliable, yield diagnosis by severity rating and criteria, and be able to be administered quickly and easily by minimally trained raters.

Using this information, the researchers developed a 17-item set of criteria that they, along with the panel of experts, agreed captures the severity of delirium. This study indicates that high-quality delirium severity instruments should ultimately have immediate relevant application to clinical care and quality improvement efforts.

"Moving beyond consideration of delirium as present or absent, delirium severity represents an important outcome for evaluating preventive and treatment interventions, and tracking the course of patients," said Dr. Inouye, who also holds appointments as Professor of Medicine at HMS and BIDMC.

Dr. Vasunilashorn, who is also Assistant Professor in the Department of Epidemiology at the Harvard T. H. Chan School of Public Health, added, "As a result of this study, we have more fully conceptualized delirium severity and have identified characteristics of an ideal delirium severity instrument."

**More information:** Sarinnapha M. Vasunilashorn et al, New Delirium Severity Indicators: Generation and Internal Validation in the Better Assessment of Illness (BASIL) Study, *Dementia and Geriatric Cognitive Disorders* (2020). DOI: [10.1159/000506700](https://doi.org/10.1159/000506700)

Provided by Hebrew SeniorLife Hinda and Arthur Marcus Institute for Aging Research

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