



Evan C. Knutson uses the PLANS tool to help a client complete a cognitively challenging everyday task.

PLANS FOR INDEPENDENT LIVING

Individuals with healthy cognitive skills take many things for granted. But the ability to plan, manage time, control emotions and complete tasks can be challenging—if not impossible—for individuals with traumatic brain injury (TBI). To further complicate the issue, there’s no definitive treatment protocol that ensures a person with TBI will be able to make a successful transition back into the community.

“There are so many variables,” says Evan C. Knutson, a certified rehabilitation counselor and doctoral student researcher in the Clinical Rehabilitation and Mental Health Counseling (Counseling) program. “Every individual with TBI exhibits different physical and emotional complications that affect executive functioning.”

That is why Knutson is dedicated to helping clinicians determine cognitive functioning in the real world. With support from a grant from the Council on Brain Injury, he recently developed the Planning in Life and Adapting to Novel Situations (PLANS) tool, a naturalistic instrument that fills an important gap.

“Traditional psychological and neuropsychological assessments are typically used to identify impairments associated with brain injury,” says Clinical Neuropsychologist Michael McCue, professor and director of the Counseling program, who serves as Knutson’s PhD advisor and chair of his dissertation committee. “Unfortunately, these tests lack ecological validity, or the capacity to identify how persons might respond to naturally occurring demands and situations that they face.

“Evan’s work is a scientifically rigorous attempt to develop a tool that will identify the functional, everyday impact of brain injury,” McCue continues.

Knutson says the PLANS tool is designed to include open-ended, problem-solving demands that are similar to the task demands that individuals face in independent living and community environments.

The assessment takes place in a clinical setting where a community rehabilitation clinician such as an occupational therapist or a vocational rehabilitation professional can observe the planning process a client goes through to complete a cognitively challenging everyday task.

For example, an individual may be asked to plan out the steps to prepare a three-course meal for himself and a friend, and to pick up a medication for the friend. He will need to select a recipe from a cookbook, budget the cost of the meal, make a trip to the grocery store to purchase the ingredients and pick up the friend’s medication from the store pharmacy.

To assist with the planning, Knutson says the materials that are required to complete the task are laid out on a table space. They may include a cookbook, a map of the grocery store, a catalogue of ingredient prices and aisles, an audio player with the voicemail from the pharmacist and an envelope containing the money used to budget the dinner and medication.

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The assessment is timed, and is completed in approximately 45 minutes. The clinician can evaluate the plan execution by a series of rubrics and guidelines designed to identify cognitive performance in the following domains: Plan Accuracy, Adherence to Generated Plan, Strategic Behavior, Rule Following, Plan Execution Speed and Accuracy.

“The knowledge gained from such an ecologically valid tool is expected to provide persons with TBI and their clinicians detailed and reliable information upon which to make decisions about important community re-entry matters,” adds McCue. “They will identify the individual’s capacity to live independently or return to work, and to identify specific goals for cognitive rehabilitation intervention.”

It was important for Knutson to follow strict scientific guidelines in the development of the PLANS tool. He conducted interviews with rehabilitation professionals to determine the types of challenges that individuals with TBI face on a day-to-day basis. “Including stakeholder input makes any study so much more impactful,” says Knutson.

In addition, he did a scoping literature review to extract psychometric data from other naturalistic instruments.

Occupational Therapist Jessica Kersey, who is also a graduate research student working on her PhD, assisted Knutson with data extraction. “Evan and I each extracted data separately from the articles he included in his review, and then we looked for discrepancies,” reports Kersey. “This was to reduce the risk of errors in data extraction.

“I appreciate Evan’s emphasis on ecological validity,” Kersey continues. “It’s very important in cognitive assessment and often is under-valued.”

This fall, Knutson began a pilot study using the PLANS instrument, recruiting clients with mild to moderate brain injuries who are at least six months post-trauma. “Our goal is to identify levels of cognitive functioning as they apply to completing real-world tasks. With that information, clinicians can develop strategies and interventions that will contribute to an individual’s rehabilitation, and help them regain their independence.” ■