

# INNOVATE EVIDENCE-BASED MENTAL HEALTH RESEARCH



## Mobile Health Technology

What happens after a young adult is diagnosed with first episode psychosis? After they start their treatment and are functioning again, how can a psychiatrist or therapist know what's really happening in this young person's life? Conversely, how can someone who is coping with new mental health challenges stay in touch with their provider?

Tara Niendam, assistant professor in the Department of Psychiatry and Behavioral Sciences at UC Davis and director of operations for the EDAPT Clinic, believes she can find a better way to connect youth with their community outpatient service using something already in hand— smart phones.

Niendam received one of 23 Research

Pilot Awards from the Behavioral Health Center of Excellence at UC Davis for the study, “Using mobile technology to detect early warning signs of mental health challenges and enhance treatment delivery for youth with early psychosis in community outpatient settings.”

### Connecting in real time

The study uses a mobile app that asks individuals to complete daily questionnaires about their mood, socialization, medication adherence, sleep, and symptoms of depression, anxiety, hallucinations and delusions. They can also record their thoughts or experiences in a “diary” portion of the app to remember things they may want to discuss with their clinician later. The information collected in the questionnaires is conveyed to the clinician each day. The goal is to pick up on early warning signs and prevent relapse.

Participants, ages 12-30, and their families have been extremely receptive to incorporating technology into their care plans.

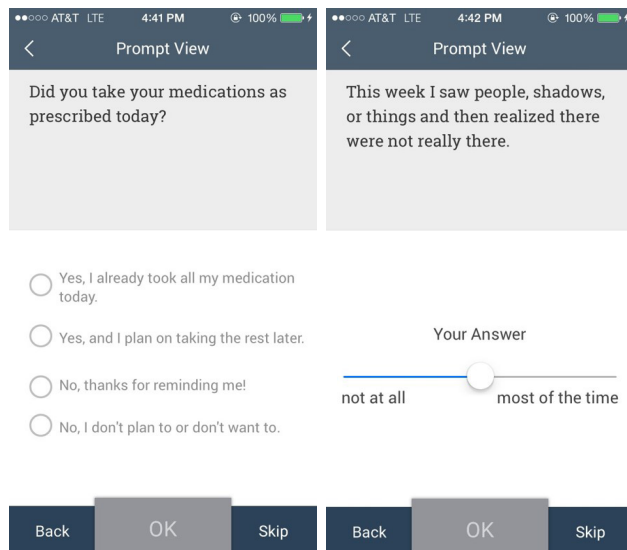
### Early intervention

Tech provides value for clinicians to more effectively utilize the limited appointment time with each patient and can function as a memory tool for patients to more accurately convey their symptoms and progress. Clients then become active collaborators in their treatment. Additionally, Niendam explains, “If an individual is having a bad week, we can see it in the data and reach out to them quickly, rather than waiting for them to call us or come in to the clinic for their next appointment.”

Technology is a staple in today's culture, from checking email and Instagram feeds to playing Pokemon Go; most young adults use apps on a daily basis. This project integrates clinical research and real-world experience to improve

*“As a parent, I appreciated knowing that by using the mobile app my daughter was also developing a habit essential to long-term symptom management, i.e. taking time each day to self-assess. This one simple step helped her start connecting the dots between her daily activities and her symptoms so she could start making better choices.”*

*-Bonnie Hotz, former EDAPT parent, caregiver and family advocate*



Screenshots of the app from the participant's perspective.

access to mental health care. Clients who don't have a smartphone that allows apps are provided with one through a partnership with T-Mobile.

### Trends

Journaling and mood tracking are widely regarded as useful tools during psychiatric treatment. Many clinicians request that their clients self-monitor their moods, sleep patterns, diet, medications and life events so that they can then review patterns and trends in behavior-associated symptoms. With this new app, that data is transmitted in real-time to a clinician that can then pick up on early warning signs and prevent emergencies. For example, Niendam's preliminary data show that a patient experiencing depression today will likely experience an increase in hallucinations and delusions two weeks from now.

### First Episode Psychosis

The early stage of psychotic illness, which affects an estimated 2 percent of Americans, represents a critical period for intervention. Eighty percent of individuals relapse within the first five years of receiving a diagnosis. Annual

health-care costs associated with psychosis are approximately \$23 billion. Evidence shows that early intervention improves outcomes for psychosis and that coordinated specialty care is one of the most effective ways for delivering treatment and preventing severe long-term disability. Niendam's pilot project works with clients from Sacramento, Solano and Napa county outpatient clinics to test the feasibility of its implementation across diverse California counties.

“Patients are encouraged to take an active role in their clinical care,” Niendam stated. “This project aims to improve therapeutic alliance, treatment adherence, and contribute to better patient outcomes.” Mobile apps have gained popularity as self-monitoring tools and yet real-time integration with a coordinated care team is something much more innovative. This pilot study could have substantial impact on informing clinical care plans and providing perceptive treatment for a vulnerable population through the use of data collected from a client's smart phone.

### EDAPT

The EDAPT and SacEDAPT Clinics serve youth with illnesses on the psychosis continuum. It offers comprehensive diagnostic and treatment services for children and young adults who recently have developed a psychotic disorder, or who are at high risk of developing such a disorder, with the goal of intervening as early as possible to limit or arrest the course of their disease. Visit <http://earlypsychosis.ucdavis.edu> for more information.

### Behavioral Health Center of Excellence at UC Davis

UC Davis launched the Behavioral Health Center of Excellence in October 2014 to advance mental health research and policy with initial funding from the Mental Health Services Act. The Innovate series highlights the Center's \$4.3 million Research Pilot Award program.

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