

An Adaptive Mobile Momentary Assessment System for Real-Time Assessment and Health Interventions

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BACKGROUND

High frequency data collection in a participant's usual environment (ecological momentary assessment, or EMA) offers a promising approach for understanding, and potentially intervening on, the precursors of clinically important states and behaviors in mental health disorders.

TECHNOLOGY DESCRIPTION

UCSD researchers have developed a “mhealth” method and companion software, which employ mobile phones/computers to collect self-reported data from patient and apply real-time statistical analyses within the individual to provide predictive projections to tailor behavior change interventions. The innovation uses (1) decision logic attached to individual elements of the survey to assess the momentary data on precursors to events such as behavioral crises, (2) the employment of statistical learning analyzes patterns of data for decision rules and branching to project values of variables in the future, and (3) the dynamic interaction with the server to determine which responses to send to intervene upon predicted trajectories, allowing the content presented to users to be highly personalized and preventative.

APPLICATIONS

The technology is useful for real-time data collection and associated public health interventions that can be delivered dynamically and outside of the clinical setting for a variety of behavioral assessment and behavioral change purposes, either for research studies, clinical programs, or commercial behavioral assessment/intervention uses.

STATE OF DEVELOPMENT

The technology has been applied to the self-monitoring data collected from 50 patients with bipolar disorder. The results indicate that the method is useful for identifying future clinically important states in some individual patients.

RELATED MATERIALS

- [The prediction of study-emergent suicidal ideation in bipolar disorder: a pilot study using ecological momentary assessment data.](#)
Thompson WK, Gershon A, O'Hara R, Bernert RA, Depp CA. Bipolar Disord. 2014 Nov;16(7):669-77. doi: 10.1111/bdi.12218. Epub 2014 Jun 5.

CONTACT

University of California, San Diego
Office of Innovation and
Commercialization
innovation@ucsd.edu
tel: 858.534.5815.



OTHER INFORMATION

KEYWORDS

ecological momentary assessment,

mental health, bipolar, behavior

monitoring

CATEGORIZED AS

- **Medical**
- Diagnostics
- Other

RELATED CASES

2014-829-0, 2014-828-0