Investigator Spotlight

Real World Data Scholars Program

NIA IMPACT COLLABORATORY
TRANSFORMING DEMENTIA CARE



Minzhi Ye, PhD
Assistant Professor
University of Texas Rio Grande Valley

"This award will strengthen my ability to integrate EHRs and natural language processing to identify and measure sleep disturbance in dementia populations and advance research on sleep health in long-term care."

Dr. Ye is an assistant professor in the School of Social Work and the Department of Sociology at the University of Texas Rio Grande Valley. Her research focuses on how social, structural, and environmental contexts shape health outcomes in vulnerable aging populations, with a particular interest in sleep disturbance and dementia care. Dr. Ye's work integrates interdisciplinary approaches from sociology, health services research, and data science to identify modifiable determinants of health and inform evidence-based interventions for older adults living in community and long-term care settings.

Measuring Sleep Disturbance in Dementia Using EHR Data in Long-Term Care

Sleep disturbance is highly prevalent among nursing home residents living with dementia, yet it is frequently under-recognized in structured diagnostic fields within electronic health records (EHR). Despite its associations with agitation, medication use, cognitive decline, and fall risk, sleep disturbance is often documented in narrative clinical notes rather than standardized data elements. This project addresses a key measurement gap by integrating structured EHR data with natural language processing (NLP) analysis of clinical notes to develop an enhanced measure of sleep disturbance in long-term care EHR data. This award will provide Dr. Ye with the training and experience using the Long-Term Care (LTC) Data Cooperative EHR and linked Medicare data to: (1) Develop an NLP-enhanced EHR-based measurement tool for sleep disturbance among nursing home residents with dementia; (2) Validate this measure using medication use, behavioral symptoms, and claims-based indicators; and (3) Examine how individual, clinical, and facility-level factors relate to the completeness and structural patterning of sleep disturbance measurement in long-term care data. This project will generate a scalable and validated approach for identifying sleep disturbance in nursing home residents with dementia using real-world data. By improving detection of sleep problems in long-term care settings, this project will enable research on its association with health outcomes and care processes. This work will lay the foundation for future efforts leveraging real-world data and NLP for research in aging populations.