

Mishandling medications is commonly seen in persons with dementia, which can lead to poor treatment outcome and serious complications. Whether individuals with cognitive impairment can appropriately manage dental-related medication remains unknown, raising a liability concern for dentists who fail to recognize the patients at risk for mishandling their medications. To address this concern, we conducted a study with 51 participants with various cognitive impairment to describe their ability to handle dental-related medications. After cognitive assessment, participants were asked to set up an antibiotics pill-box and use a mouthwash as instructed, and their performance were scored. Number and type of prompts given to facilitate task completion were also documented. Mishandling of dental-related medications was common in participants with cognitive impairment. As expected, participants with poor cognition needed more assistance on handling their medications. Dentists should be aware of this concern and take it into consideration when treatment plan for these individuals. Part of a symposium sponsored by the Oral Health Interest Group.

SESSION 7235 (SYMPOSIUM)

TECHNOLOGY-BASED APPLICATIONS FOR THE ASSESSMENT AND MANAGEMENT OF ALZHEIMER'S DISEASE AND RELATED DISORDERS

Chair: Lauren Massimo

Discussant: George Demiris

Over the last decade, technological advances have made it possible for people to access health information right at their fingertips. Indeed, technology-based applications (apps) have been developed to tackle a wide range of health-related issues, including Alzheimer's disease and related disorders (ADRD). As such, there is a critical need to develop and test effective dementia apps that can ultimately be converted in to scalable programs. In this interdisciplinary symposium, we will discuss the development and testing of novel apps for the assessment and management of ADRD. The first session will discuss the development of an online money management credit card task to assess cognitively vulnerable older adults who are at risk for making poor financial decisions. The second session will describe the development and psychometric testing properties of a mobile app to detect the earliest features of preclinical Alzheimer's disease. The third session will highlight findings from a study testing a smartphone-based prompting app to improve everyday task completion in persons with mild cognitive impairment and mild dementia. The last session will share findings from a study testing a mobile app to increase goal-directed behavior and reduce apathy in persons with dementia. Together, these presentations describe how technology-based applications can be used to assess and manage cognitive and behavioral symptoms of ADRD.

DEVELOPMENT OF THE ONLINE MONEY MANAGEMENT CREDIT CARD TASK

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Older adults (OAs), a wealthy but vulnerable segment of our population, are at risk to make compromised financial decisions. Evidence suggests that OAs increasingly use technology to perform everyday financial transactions, such as to manage their credit card statements. However, current tools are lacking in terms of assessing how older adults navigate and handle the online financial milieu. We will discuss the development of a novel, simulated online money management (OMM) credit card statement task. OMM examines OAs performance on several indices including reaction time, nature and frequency of errors, and their ability to comprehend and trouble shoot problems. Psychometric properties related to the reliability and validity will be discussed. Ultimately, by examining the longitudinal performance of OMM in OAs, we can better characterize the natural course of OMM. Such an approach will enable clinicians to accurately and objectively examine OMM and identify those at risk for making financial errors.

DETECTION OF ALZHEIMER'S DISEASE-RELATED COGNITIVE CHANGE WITH THE MOBILE COGNITIVE APP PERFORMANCE PLATFORM

Dawn Mechanic-Hamilton, Sean Lydon, Alexander Miller, Kimberly Halberstadter, Jacqueline Lane, Sandhitsu Das, and David Wolk, *University of Pennsylvania, Philadelphia, Pennsylvania, United States*

This study investigates the psychometric properties of the mobile cognitive app performance platform (mCAPP), designed to detect memory changes associated with preclinical Alzheimer's Disease (AD). The mCAPP memory task includes learning and matching hidden card pairs and incorporates increasing memory load, pattern separation features, and spatial memory. Participants included 30 older adults with normal cognition. They completed the mCAPP, paper and pencil neuropsychological tests and a subset completed a high-resolution structural MRI. The majority of participants found the difficulty level of the mCAPP game to be "just right". Accuracy on the mCAPP correlated with performance on memory and executive measures, while speed of performance on the mCAPP correlated with performance on attention and executive function measures. Longer trial duration correlated with measures of the parahippocampal cortex. The relationship of mCAPP variables with molecular biomarkers, at-home and burst testing, and development of additional cognitive measures will also be discussed.

SMARTPROMPT REMINDER APPLICATION IMPROVES EVERYDAY TASK COMPLETION AND REDUCES INEFFICIENT BEHAVIORS

Hackett Katherine, Sarah Lehman, Ross Drivers, Matthew Ambrogi, Likhon Gomes, Chiu Tan, and

Tania Giovannetti, *Temple University, Philadelphia, Pennsylvania, United States*

The SmartPrompt phone-based reminder application was designed according to neuropsychological theory and pilot testing to facilitate everyday functioning. A laboratory-based pilot of ten participants with MCI and mild dementia showed significantly greater task completion with significantly fewer checking behaviors when using the SmartPrompt versus a control condition. Younger individuals and those who engaged in more checking behaviors completed more tasks in the control condition, but these relations were not significant when using the SmartPrompt. After 15 minutes of training, caregivers achieved near perfect scores on a SmartPrompt configuration quiz. Participant and caregiver usability ratings were strong, even though participants reported relatively low computer proficiency and neutral/unfavorable attitudes towards technology. Piloting informed modifications of the SmartPrompt to enhance personalization (e.g., customized alarms/rewards) and improved human-computer-interaction for in-home testing. Preliminary in-home test data on individually-owned smartphones and conclusions regarding barriers and facilitators to the effectiveness of the modified SmartPrompt will be discussed.

ACTIVIDAILY: TURNING APATHY INTO ACTION IN NEURODEGENERATIVE DISEASE

Lauren Massimo, Sean Lydon, Alexander Miller, Katya Rascovsky, and Dawn Mechanic-Hamilton, *University of Pennsylvania, Philadelphia, Pennsylvania, United States*

Impairment of goal-directed behavior (GDB), often labeled apathy, is a common behavioral symptom in dementia. ActiDaily is a novel mobile app that engages both patients and caregivers to increase GDB to improve everyday function. ActiDaily targets key components of GDB (motivation, planning and initiation) and individualizes patient goals. Pilot testing in twelve patient/caregiver dyads occurred over 4 weeks of app use. Measures of behavior, everyday functioning, and psychological distress were assessed in a pre-post design. Goal Attainment Scaling (GAS) was used to establish individualized goals and measure progress on a standard scale. GAS showed that 79% of participants' goals were met at or above expectations. Caregiver depression and stress were significantly reduced. There was also a reduction in ratings of patient apathy. ActiDaily is an innovative intervention that individualizes treatment of apathy and has the potential to increase independence in day-to-day life and decrease caregiver burden.

CAN WE END THE AGE-OLD PROBLEM OF PRESSURE INJURIES?

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A pressure injury/ulcer (PrI) is a localized area of injured skin and tissue usually over a bony prominence and one of the highest priority problems identified in U.S. health care's federal quality initiatives; approximately 26.8 billion is spent for treatment each year. The problem is accentuated

for nursing home residents who are often immobile/bed-ridden. Currently, resident repositioning/movement by nursing staff every 2-hours is the cornerstone of prevention care. Successful interventions must be nurse-led and designed to facilitate the prevention care of nursing staff on the front lines. My research focuses on integrating movement into everyday care for institutionalized older adults and is advancing the science of PrI prevention through testing of cueing interventions for nursing staff to improve the care delivery. My goals for innovating preventive care include enhancing our understanding of nursing subcultures' influence on care outcomes and leveraging emerging technology to enhance the care team's collaborative efforts.

NAVIGATING THE TREACHEROUS WATERS OF GERIATRIC COMPLEXITY AND HETEROGENEITY WITH THE HELP OF TEAM SCIENCE

George Kuchel, *University of Connecticut, Farmington, Connecticut, United States*

Multifactorial complexity and heterogeneity challenge the care of older adults and research into the pathophysiology of common geriatric syndromes. Multicomponent interventions matching intervention components with individual risk factors are grounded in precision medicine by ensuring that interventions may be offered to those who will more likely benefit, sparing expense and side effects for those who will not. Nonetheless, the development of mechanism-guided interventions has been hampered by failure to identify single mechanisms for effective targeting within this multifactorial complexity, a problem worsened by historical barriers between research disciplines and silos. Geroscience-guided interventions target biological hallmarks of aging representing mechanisms that geriatric syndromes share with aging. We will present examples of multidisciplinary bench-to-bedside translational science seeking to transform the care of common geriatric conditions as diverse as frailty, voiding disorders and immunization against influenza and pneumococcal infections via geroscience-guided therapies applied with a greater emphasis on heterogeneity of aging and targeting.

DEPRESCRIBING IN OLDER ADULTS: IS EVIDENCE FOR CONTINUED MEDICATION USE GENERALIZABLE BEYOND AGE 75?

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Older adults over the age of 75 are severely underrepresented in many of the clinical trials used to justify the continued use of medications for chronic disease prevention in advanced age. The gaps in evidence in this population have fueled an interest in research to better understand the potential benefits and harms associated with the continued use of medications with uncertain benefit in advanced age. Deprescribing, the intentional reduction or discontinuation of medications, has recently gained traction as an important component of the prescribing process, but raises questions about the safety of stopping medications. This presentation will provide an overview of the evolution of deprescribing research and how this has shaped my