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The goal of this study was two-fold: 1) to investigate whether gay, lesbian, and bisexual (GLB) adults, compared to heterosexual adults, used alcohol and cigarettes daily to a greater extent, and 2) to test the moderating role of daily stress and well-being on the association between GLB status and alcohol and cigarette use. We analyzed data from 3,421 adults (GLB = 98; age range = 20-83 years) who completed an 8-day daily diary protocol as part of the Midlife in the U.S. Study (MIDUS). Compared to heterosexual adults, GLB participants reported greater daily alcohol and cigarette use. However, among GLB individuals, more negative affect was associated with less daily alcohol use and people who reported more stressor days and physical symptoms across the week consumed less alcohol. We will discuss how daily affect, stress, and substance use may function differently among GLB people in middle and older adulthood.

## SESSION 7800 (SYMPOSIUM)

### DESIGNING TECHNOLOGY FOR AGING AND DISABILITY

Chair: Shelia Cotten

Technology has massive potential to improve the lives of older adults in terms of their health, wellbeing, quality of life, and independence. However, benefits will not be realized unless these technologies are designed considering the needs, abilities, and attitudes of the diverse population of older adults. This is especially true when we consider older adults experiencing physical, sensory, or cognitive impairments that influence their ability to adopt and use technology-based solutions. This symposium highlights a variety of approaches to using technology to support older adults living with disability, and important design considerations. The first talk will highlight the important role technology can play in helping persons with cognitive and /or physical impairment in the workplace. The next talk outlines a framework and methodology designed to provide older adults with hearing or visual impairments the capability to use and adapt digital health tools. This is followed by a discussion of a research agenda to use technology to help older adults experiencing disability as a result of cognitive impairment participate in their community. Then, there will be a discussion of how digital health technologies, when considering their unique needs and abilities, can support older adults with cognitive impairment and dementia. The final talk focuses on the intersection of technology, cognitive impairment, and leisure, and explores engagement with digital games by older adults with and without dementia. Common themes that emerge and future directions will be highlighted.

### WORKPLACE ADAPTIVE TECHNOLOGIES FOR WORKING ADULTS WITH COGNITIVE AND PHYSICAL DISABILITIES

Patricia Heyn, *University of Colorado Anschutz Medical Campus, Aurora, Colorado, United States*

Individuals with disabilities usually have difficulty in finding and maintaining employment prospects and thus,

they are extremely underrepresented in the workforce. These challenges are even greater when the person has both cognitive and physical disabilities. While there is evidence supporting the benefits of employing individuals with disabilities in the workforce, employers are usually unprepared to hire individuals with disabilities. They are also concerned that the work productivity may be impacted by the employee with a disability. Thus, technology can play an important role in helping a person with cognitive and /or physical impairment work on tasks that require memorization and assembly performance. We will present a mobile technology system that was planned and piloted with working adults with physical and cognitive impairments. Founded on our pilot study, mobile technologies hold the potential to help people with disabilities to perform jobs that require memorization as well as systematic assembly tasks.

### BUILDING DIGITAL HEALTH TOOLS FOR OLDER ADULTS WITH DISABILITIES

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*New Haven, Connecticut, United States*

Adults with disabilities are more likely to be excluded from digital health research compared to those without. In this symposium, we will describe how user experience (UX) research can be used to successfully develop digital health tools that are both usable and acceptable by older adults with physical disabilities. Our framework and methodology are designed to provide older adults, age 60+ with hearing or visual impairments, the capability to use and adapt digital health tools (including tools that run on mobile devices like smart phones and tablets). Our approach includes one-on-one sessions to evaluate the ease of use and usefulness of digital health for older adults, including 6 blind, 6 deaf, 6 low vision, 6 hard of hearing. This approach allows us to increase the scope of the research participants and, eventually, end users to include adults with disabilities that we may not normally include in research study design.

### INTRODUCING THE ENHANCE (ENHANCING NEUROCOGNITIVE HEALTH, ABILITIES, NETWORKS, & COMMUNITY ENGAGEMENT) CENTER

Walter Boot,<sup>1</sup> Sara Czaja,<sup>2</sup> Wendy Rogers,<sup>3</sup> and

Neil Charness,<sup>1</sup> 1. *Florida State University, Tallahassee,*

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Cognitive impairment (CI) refers to changes in cognition that result in difficulties remembering, learning new things, concentrating, making decisions important to everyday life, responding to environmental demands, or understanding social cues, and these difficulties can result in disability (limiting one or more major life activities). Existing and emerging technology applications hold promise for providing everyday support for older adults with CI, promoting independence and community living. However, these solutions will only be viable if they consider the needs, preferences, and abilities of older adults experiencing cognitive impairment. This talk introduces a new center, funded by the National Institute on

Disability, Living, and Rehabilitation Research (NIDILRR), with the aim of supporting older adults with CI (MCI, CI as a result of traumatic brain injury or stroke) through adaptive and individualized technology solutions.

### STRATEGIES TO IMPROVE HEALTH TECHNOLOGIES FOR OLDER ADULTS WITH COGNITIVE IMPAIRMENT AND DEMENTIA

Stacey Schepens Niemiec, Elissa Lee, Jeanine Blanchard, and Adam Strizich, *University of Southern California, Los Angeles, California, United States*

Technology may improve health self-management of older people with cognitive deficits, yet these individuals may have unique needs influencing its utility. This study's purpose was to gather current strategies described in the literature and by expert stakeholders for utilizing digital health technologies in older adults with cognitive impairment (CI) or dementia. We conducted a rapid literature review to identify articles that featured digital health technology use in persons with CI/dementia. Additionally, we conducted interviews (n=12) with expert stakeholders who were identified through online academic, professional, and community organization biographies and snowball referral. Qualitative-based thematic analysis was used to identify emergent themes from selected literature and transcribed interviews. Recommended strategies addressed instructional methods (e.g., reducing distractions), technology adaptations (e.g., simplified interface), care partner involvement, and dosage/exposure. Findings are applicable to development of technology-driven interventions and products, with the aim of improving the effectiveness of such technology for older people with CI/dementia.

### PREDICTING ENGAGEMENT WHILE PLAYING COMPUTER GAMES IN OLDER ADULTS WITH AND WITHOUT DEMENTIA

Antonio Miguel-Cruz,<sup>1</sup>

Daniel Alejandro Quiroga-Torrez,<sup>2</sup>

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The purpose of this study was to determine what factors predict the level of engagement of older adults, with and without dementia, while playing computer games. Fourteen older adults with and without dementia (60%/40%) played a computer game over 16 sessions, each for 30 minutes. Variables included participants' demographics, game-play data and environmental factors. Mixed fixed model for longitudinal data analysis design was used to determine how these variables predicted engagement. Five variables predicted engagement at a statistically significant level: Participant's performance (B1=+0.16, p<0.03), age (B2=+0.20, p<0.00), previous experience with computer games (B3=+1.021, p<0.02), positive emotions (B4=+0.16, p<0.00), and distractions (noise) during gameplay (B5=-1.07, p<0.05). Cognitive impairment and general health status were correlated with engagement, but these correlations were not statistically significant. Previous experience using computer games and distractions during gameplay were the most important

predictors of engagement while older adults with and without dementia played computer games.

### SESSION 7805 (PAPER)

#### DEMENTIA, COGNITIVE IMPAIRMENT, AND MENTAL ILLNESS: PRESENTER DISCUSSION

#### BARRIERS AND FACILITATORS FOR OLDER ADULTS WITH SERIOUS MENTAL ILLNESS TO UTILIZING MEDICAID SMARTPHONE SERVICES

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As increasingly more older adults in the general population utilize smartphones to access health services, the digital divide between older adults with serious mental illness (SMI) and the general older adult population continues to widen. The purpose of this study was to examine older adult peer support specialists' and older people with SMI's perspectives of barriers and facilitators to utilizing Medicaid Safelink smartphone services. Data from two focus groups and five semi-structured interviews from older adult peer support specialists (N=10) and older adults with SMI (N=15) were analyzed using the Consolidated Framework for Implementation Science Research. A mixed methods convergent design integrated quantitative with qualitative data. Older adults with SMI (N= 15) had a mean age of 55 years and were mainly women (70%) and White (100%). Certified peer specialists (N= 10) had a mean age of 52 years (age range 45-67) and were mainly female (75%), 66% identified as White, and 33% identified as African American. Four themes that were identified across different aspects of barriers included technology knowledge, technology adoption, design features (i.e., smartphone size, option to increase font sizes, multi-modal capacity, navigational architecture, 508 compliance), and Safelink policies and procedures. Facilitators included free and continuous services, access to technical support, and smartphone capabilities to enable healthcare communications and facilitate the delivery of services. Improving upon the themes identified as barriers to utilizing Safelink may promote a continuum of care for older adults with SMI, closing the gap of services that occurs between in-person therapy and other interventions.

#### SIBLING DEATH IN THE FAMILY AND DEMENTIA RISK

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Growing evidence points to the role of stress in contributing to dementia risk, and experiencing the death of a family member is a particularly stressful life event. Sibling relationships are typically life-long relationships and the death of a sibling is likely to be a stressful event in the life course; however, there is little research illuminating the possible consequences of sibling loss for dementia risk. This study considers whether experiencing the death of a sibling before midlife is associated with subsequent dementia risk and how such losses, which are more common for Black