Abstracts from the 2016 AAGP Annual Meeting
Washington, DC
March 17–20, 2016
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Dear Annual Meeting Attendee:

The American Association for Geriatric Psychiatry (AAGP) Annual Meeting is the premier educational program focused solely on late-life mental illness. The AAGP Annual Meeting provides the latest information on clinical care, research innovations, and models of care delivery.

This Supplement of the *American Journal for Geriatric Psychiatry* (AJGP) contains the abstracts of the scientific presentations that are scheduled for the 2016 Annual Meeting, “New Perspectives on Brain Health and Aging,” including session and poster presentations. We hope you find it a useful resource for years to come.

We are pleased that we can provide this Supplement to those attending the AAGP Annual Meeting to maximize your attendance at the educational, research, and clinical presentations of interest to you, and also provide these abstracts, through on-line access (www.AJGPonline.org) to the subscribers of the AJGP.

Charles F. Reynolds, III, MD  
Editor-In-Chief  
AJGP

Gary W. Small, MD  
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AAGP

Paul A. Newhouse, MD  
Annual Meeting Chair  
AAGP
Notes

Session Abstracts

Within this supplement, session abstracts are organized by session number.

Poster Abstracts

Within this supplement, poster abstracts are organized by poster session and poster number at the time this publication went to print. Poster abstracts are also listed alphabetically by first author listed and by title.

* All Session and Poster Abstracts appear as originally submitted to AAGP with only minor editing to conform to the style of this supplement.

* The abstracts in this supplement for *The American Journal of Geriatric Psychiatry* are not peer-reviewed. Information contained in these abstracts represents the opinions of the authors.
WHAT’S PALLIATIVE CARE GOT TO DO WITH IT?

Session 100
Laura B. Dunn1; Maria I. Lapid2; Teresa Rummans3

1University of California, San Francisco, CA
2Mayo Clinic, Rochester, MN

Abstract: This session will provide an overview of palliative care principles and practices relevant to geriatric mental health. Maria Lapid, M.D. will define palliative care, describe philosophies underlying palliative care, and review core evaluation and management strategies for highly prevalent symptoms. Dr. Lapid will also discuss unique contributions of palliative care in the context of caring for geriatric patients with psychiatric symptoms and syndromes. She will also identify strategies for identifying how and when to make referrals for palliative care consultation and how to work collaboratively with palliative care providers. Laura Dunn, M.D., will define spiritual care, highlight the importance of identifying and addressing spiritual needs in older adults with serious or life-limiting illnesses, and describe the Spiritual Assessment and Intervention Model (Spiritual AIM) which can help guide geriatric professionals caring for older adults. Case examples of the use of Spiritual AIM with geriatric palliative care patients will be presented. Teresa Rummans, M.D. will discuss pain management in older adults with chronic pain or at the end of life. She will focus on how the principles and practices of palliative care can improve pain control, and she will provide a model for weighing the risks and benefits of opioid use depending on the older patient’s goals and clinical circumstances.

Faculty Disclosures:
Laura B. Dunn
Nothing to disclose

Maria I. Lapid
Nothing to disclose

Teresa Rummans
Nothing to disclose

DIVERSITY IN ACTION: ASSESSING AND ADDRESSING BIASES IN THE WORKPLACE AND PATIENT CARE

Session 101
Tatyana Shthinlukht1; Lisa T. Eyler3; Jin Hui Joo3; Ali Asghar Ali4

1UMass Medical School, Worcester, MA
2UC San Diego Healthcare System, San Diego, CA
3Johns Hopkins University, Baltimore, MD
4Baylor College of Medicine, Houston, TX

Abstract: Despite explicit acceptance of the importance of diversity within academic medicine, inequities still exist, and members of under-represented groups often do not feel included or supported. Growing evidence suggests that implicit, or unconscious, biases play a large role in the persistence of inequities and unfavorable climates and have their influence through subtle discriminatory behaviors. Dr. Lisa Eyler, PhD will present the study of the workshop developed at UC San Diego for faculty and trainees regarding unconscious bias, with the goals of increasing awareness, providing shared language for...
addressing bias-related incidents, and improving climate for all department members in order to attract more diverse trainees and faculty.

With the ageing of the population, there is increased need for empathic and complex care for the elderly. Dr. Ali Abbas Asghar-Ali, MD will address the impact of ageism which is defined as "negative or positive stereotypes, prejudice and/or discrimination against (or to the advantage of) elderly people on the basis of their chronological age or on the basis of a perception of them as being "old" or "elderly". Dr. Asghar-Ali will talk about implicit or explicit ageism that can be expressed on a micro-, meso-, or macro-level. He will elaborate on many of the causes of ageism and the need for it to be addressed systematically by individuals, organizations and policymakers.

Dr. Jin Hui Joo, MD will share the results of her work on exploring ethnic bias in the minority older adults that led to skepticism about participation and engagement in the depression care services. She will describe the model of a community based participatory research framework that helped the development of a service delivery in which peer mentors who have experiential knowledge of depression work with a mental health professional to extend depression care into the community to improve engagement and depression outcomes. Dr. Tatyana Shteinlukht, MD, PhD will serve as a session chair and discussant.

Faculty Disclosures:
Ali Asghar Ali
Nothing to disclose

Lisa T. Eyler
Nothing to disclose

Jin Hui Joo
Nothing to disclose

Tatyana Shteinlukht
Nothing to disclose

ELDER NEGLECT AND EXPLOITATION: GLOBAL CHALLENGES AND LOCAL SOLUTIONS
Session 102
Jason Schillerstrom1; Eve H. Byrd2

1UTHSCSA, San Antonio, TX
2Emory University, Atlanta, GA

Abstract: State agencies such as Adult Protective Services face the challenge of protecting elders from abuse, neglect, and exploitation while preserving the principles of least restrictive interventions and respect for autonomy and individual rights. Many models have been put forth by multiple states to standardize the assessment of elders reported to protective services. Perhaps the most challenging obstacle to overcome is working with the decisionally incapacitated elder with limited social support. Many agencies agree that geriatric psychiatrists are ideal for identifying incapacity and making recommendations to the court. However, geriatric psychiatrists are few and the cost of these assessments is high. This symposium will explore the challenges faced by multiple states and describe how geriatric psychiatry can alleviate the burden faced by our social support agencies and judicial systems while protecting the rights of elders and guarding against neglect and exploitation.

Faculty Disclosures:
Eve H. Byrd
Nothing to disclose

Jason Schillerstrom
Nothing to disclose
LATE LIFE SCHIZOPHRENIA: ADVANCES IN RESEARCH

Session 103
John Kasckow1,2; Carl Cohen3; Tarek K. Rajji4; Candace Fraser1

1University of Pittsburgh Medical Center, Pittsburgh, PA
2VA Pittsburgh Health Care System, Pittsburgh, PA
3SUNY Downstate Medical Center, Brooklyn, NY
4University of Toronto, Toronto, ON, Canada

Abstract: Schizophrenia is a serious illness and one of the most expensive psychiatric disorders. As the general population ages, it is anticipated that the number and proportion of older patients with schizophrenia will continue to increase. This research symposium will include papers by investigators from sites across North America which present and discuss recent research in older patients with schizophrenia. Dr. Kasckow will serve as chair. The topics will range from research studies examining longitudinal studies on coping strategies in older adults with schizophrenia (Dr. Cohen), research examining cognitive behavioral therapy and social skills training in older adults with schizophrenia (Dr. Rajii), clinical and demographic factors associated with suicidal ideation in hospitalized older adults with schizophrenia (Dr. Fraser) and the evidence base for psychosocial treatments in older adults with schizophrenia (Dr. Kasckow). Dr. Carl Cohen will serve as the symposium discussant and will relate these findings towards treating this population. This session will discuss important new advances in research pertaining to older patients with schizophrenia.

Faculty Disclosures:
Carl Cohen
Nothing to disclose

Candace Fraser
Nothing to disclose

John Kasckow
Nothing to disclose

Tarek K. Rajji
Nothing to disclose

OVERAGE DRINKING: ALCOHOL USE DISORDERS IN OLDER ADULTS AND ROLE OF SBIRT AS EVIDENCE-BASED APPROACH TO DIAGNOSIS AND MANAGEMENT

Session 104
Shilpa Srinivasan1; Rebecca Payne1,2; Rushiraj Laiwala2

1University of South Carolina School of Medicine, Columbia, SC
2Palmetto Health, Columbia, SC

Abstract: With the rising population aged 65 and above, alcohol use disorders (AUDs) among older adults are expected to increase. According to the 2013 National Survey on Drug Use and Health (NSDUH), over 40 percent of individuals age 65 and above drink alcohol and almost 10 percent drink at unhealthy levels consistent with binge drinking, defined as five or more drinks on the same occasion (i.e., at the same time or within a couple of hours of each other) on at least 1 day in the past 30 days. The health impact of unhealthy alcohol use includes psychiatric and neurocognitive sequelae, medical illnesses such as alcohol-related liver cirrhosis, pancreatitis, interaction with prescription medications, as well as alcohol-related trauma and injury (falls, motor vehicle accidents), and alcohol-associated self injurious behavior. Despite the increasing prevalence of alcohol use disorders in elderly, under-diagnosis and under-treatment continues to be a challenge in health care settings. SBIRT—Screening, Brief Intervention and Referral to Treatment, a SAMHSA-developed national evidence-based initiative to address alcohol and substance use disorders has demonstrated effectiveness in clinical settings. Using validated screening tools,
and motivational interviewing techniques, SBIRT underscores universal screening in health care settings, followed by brief interventions for patients with alcohol and/or substance use disorders. Just as importantly, SBIRT has been applied with individuals who are at risk for developing these disorders. A growing body of research is examining the effectiveness of SBIRT in older adults. This session will provide an overview of the prevalence of alcohol use and alcohol use disorders in older adults, along with trends over the last 10 years. The role of SBIRT in older adults will be discussed. Evidence-based treatment of alcohol use disorders in elderly will be reviewed.

Faculty Disclosures:
Rushiraj Laiwala
Nothing to disclose

Rebecca Payne
Nothing to disclose

Shilpa Srinivasan
Nothing to disclose

SENSORS, SMARTPHONES AND GERIATRIC PSYCHIATRY
Session 105
Ipsit V. Vahia1; Azziza Bankole2; John Torous3; Stephen J. Bartels4

1UC San Diego, La Jolla, CA
2VirginiaTech Carilion School of Medicine, Roanoke, VA
3Dartmouth Geisel Medical School, Lebanon, NH
4Beth Israel Deaconess Medical Center, Boston, MA

Abstract: The growing shortage of physicians and specialty care providers equipped to manage to mental health care of older adults, combined with a move away from traditional hospital or clinic-based care, has resulted in geriatric psychiatrists facing a need to develop and utilize methods of patient monitoring in their patients’ living environments. Moreover, there is an urgent need for clinical information that not only captures a patient’s day-to-day functioning, but can is also able to process these data for efficient clinical interpretation. Extraordinary growth in several technologies including communication, sensors and machine learning can facilitate this process. This session will feature 3 presentations which focus on this. Dr. John Torous will discuss the use of active and passive data collection through smartphones and real time analytics to map patient behavior. Dr. Azziza Bankole will discuss the use of motion sensing technology to assess and predict agitated behavior in a home environment for persons with dementia. Dr. Ipsit Vahia will discuss wearable technology and environmental gas sensors, and their application to geriatric psychiatry. Dr. Stephen Bartels will serve as discussant and highlight systems and policy implications of technology.

Faculty Disclosures:
Azziza Bankole
Nothing to disclose

Stephen J. Bartels
Nothing to disclose

John Torous
Nothing to disclose

Ipsit V. Vahia
Nothing to disclose
CAN WE CHANGE THE INEVITABLE? AMELIORATING BRAIN AGING AND COGNITIVE DECLINE
Session 106
Warren D. Taylor¹; Cyrus Raji³; Lihong Wang²; Helen Lavretsky³

¹Vanderbilt University, Nashville, TN
²University of Connecticut Health Center, Farmington, CT
³UCLA Medical Center, Los Angeles, CA

Abstract: Even successful, normal aging is associated with cognitive and brain changes. With changing physical and cognitive abilities, the brain adapts to environmental challenges by modifying neural connectivity and brain function. Such neuroplastic changes do not always result in improved function, and may predict future decline. However, experience-related neuroplastic changes, induced by modification of social environments and physical activity may have significant benefit. This symposium will focus on how lifestyle changes may benefit cognition and how such clinical benefits are reflected in brain connectivity and function. The core of the discussion will be on how physical activity—discussed from a perspective of both observational and experimental studies—benefits cognition in older adults. We will incorporate recent research utilizing neuroimaging to further explain this relationship. We will present data on how neuroimaging may be used clinically to predict cognitive decline. We will also focus on how physical activity alters brain connectivity in conjunction with improving cognitive ability.

Dr. Warren Taylor (chair/discussant) will provide a brief introduction to current theories of cognitive aging and introduce concepts of how experiential changes may modify brain aging.

Dr. Cyrus Raji (presenter) will introduce the concept of preventive neuroradiology, or how imaging markers may be instrumental as quantitative measures and indicators of early adverse or pathological brain aging. He will additionally present data on how obesity and physical activity may affect brain and cognitive aging. He will focus this talk on these concepts as applied to a geriatric psychiatry clinic.

Dr. Lihong Wang (presenter) will next present data from a study investigating effects of a 6-week Wii video game fitness exercising training program. She will discuss how the regimen provided benefit on measures of memory performance and how such positive cognitive changes were correlated with change in brain functional connectivity.

Dr. Helen Lavretsky (presenter) will then present data from a 12-week randomized trial comparing yoga, a mind-body intervention) with a “gold standard” cognitive training program, memory enhancement training. She will discuss how these interventions affected cognitive performance and how cognitive change was associated with changes in brain functional connectivity.

Dr. Taylor will then provide a brief summary, highlighting areas of common findings and discuss challenges of translating and disseminating these findings into clinical practice. This will serve to stimulate discussion with and questions from the audience.

Faculty Disclosures:
Helen Lavretsky
Research Support: Actavis/Forest Research Inst—research grant
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Research Support: Alzheimer’s Research and prevention foudnation—grant/contract
Other: Oxford Univ Press—royalties
Other: Hopkins Univ Press—royalties

Cyrus Raji
Consultant: Brainreader ApS—I scientifically advise this company
Consultant: Brain Imaging Foundation—I provide global guidance to this foundation

Warren D. Taylor
Nothing to disclose

Lihong Wang
Nothing to disclose
CAREER CHOICES FOR IMG GERIATRIC PSYCHIATRISTS
Session 107
Rajesh Tampi1,2; Iqbal Ahmed3; Amita Patel4; Ipsit V. Vahia5

1Yale University School of Medicine, New Haven, CT
2Case Western Reserve University, Cleveland, OH
3University of Hawaii, Honolulu, HI
4Wright State University, Dayton, OH
5University of California at San Diego, San Diego, CA

Abstract: International Medical Graduates (IMGs) constitute almost half of the work force of geriatric psychiatrists. The IMGs have had successful career as clinicians, educators, academics and researchers in geriatric psychiatry. In this symposium we will review the roles of IMGs as private practitioners, educators, academicians and as researchers.

Faculty Disclosures:
Iqbal Ahmed
Nothing to disclose

Amita Patel
Nothing to disclose

Rajesh Tampi
Nothing to disclose

Ipsit V. Vahia
Nothing to disclose

PAYING IT FORWARD II: AN INTERACTIVE WORKSHOP ON MENTORSHIP
Session 108
Laura B. Dunn1; Stefana B. Morgan1; Denise G. Feil2

1University of California, San Francisco, CA
2University of California, Los Angeles, CA

Abstract: This symposium builds upon the foundation of the 2015 AAGP Symposium (“Paying It Forward: Developing Mentor-Mentee Relationships to Advance Geriatric Mental Health”). This year’s symposium will provide an in-depth, interactive workshop focused on advanced topics in mentoring relationships. We will explore specific areas where challenges commonly arise, including communication, trust, expectations, timelines, performance gaps, intellectual “ownership,” and authorship. Small group role-playing exercises utilizing three specific and challenging vignettes, followed by audience-wide discussion, will enable participants to practice advanced techniques to address these challenges and enhance their mentoring relationships.

Faculty Disclosures:
Laura B. Dunn
Nothing to disclose

Denise G. Feil
Nothing to disclose

Stefana B. Morgan
Nothing to disclose
PSYCHOSIS AND DEMENTIA: WHEN TWO WORLDS COLLIDE

Session 109
Corinne Fischer1,2; Colleen P. Millikin3; David G. Munoz4,5; Robert A. Sweet5,6

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2Department of Psychiatry, Division of Geriatric Psychiatry, University of Toronto, Toronto, ON, Canada
3Department of Clinical Health Psychology, Faculty of Medicine, University of Manitoba, Winnipeg, MB, Canada
4Department of Laboratory Medicine and Pathobiology, University of Toronto, Toronto, ON, Canada
5Department of Psychiatry and Neurology, University of Pittsburgh, Pittsburgh, PA
6VA Pittsburgh Healthcare System, Pittsburgh, PA

Abstract: Psychotic symptoms are estimated to occur in approximately one half of patients with Alzheimer’s disease and associated dementias. In addition, they are associated with a number of adverse clinical outcomes including premature institutionalization, rapid disease progression and increased caregiver burden. In spite of the prevalence of these symptoms and their association with adverse outcomes, clinical management remains challenging. This symposium will review the latest research findings in the field of psychosis in dementia, including assessment, clinical management and biomarkers. More specifically, Dr. Colleen Millikin, a clinical neuropsychologist, will review the literature on risk factors for the development of psychosis in dementia and MCI. She will also review non-pharmacological approaches to management. Dr. Corinne Fischer, a geriatric psychiatrist, will review the clinical assessment of psychosis in MCI and dementia and discuss pharmacological management. Dr. David Munoz, a neuropathologist, will review the literature and discuss the clinical utility of biomarkers in psychosis in MCI and dementia. During the course of their presentations, all authors will use illustrative cases and present data from the NACC and ADNI databases. Dr. Rob Sweet, a leader in the field of psychosis and dementia, will act as a discussant, commenting on the broader clinical implications of the presented research findings.

Faculty Disclosures:
Corinne Fischer
Nothing to disclose

Colleen P. Millikin
Nothing to disclose

David G. Munoz
Nothing to disclose

Robert A. Sweet
Nothing to disclose

SLOWING, INFLAMMATION, AND DEPRESSION: IMPLICATIONS FOR ASSESSMENT AND TREATMENT OF OLDER DEPRESSED INDIVIDUALS

Session 110
Patrick Brown1,2; Bret Rutherford1,2; Ebrahim Haroon3; Steven Roose1,2

1Columbia University, New York, NY
2New York State Psychiatric Institute, New York, NY
3Emory University, Atlanta, GA

Abstract: Human aging is associated with chronic, low-grade inflammation (inflammaging). Inflammaging has adverse affective, cognitive, motor, and neurostructural consequences for older adults. In addition to these direct pathological changes in later life, inflammation is associated with morbidity and mortality by contributing to syndromes such as depressive illness and frailty. Research has established a link between inflammation and depressive illness. Adults treated with the inflammatory cytokine interferon alpha were at substantial risk of developing a major depressive illness, providing evidence that elevated
inflammatory processes may play a causal role in the development of depression. This depressive illness was characterized by symptoms of fatigue, psychomotor retardation, and decreased appetite. This neurovegetative depression associated with an elevated inflammatory response is phenomenologically similar to the syndrome of frailty. Frailty too has been linked to elevated inflammatory processes and characterized by slowness, fatigue, weakness, shrinkage, and low physical activity. Of the characteristics of frailty, decreased gait speed, considered a "vital sign" to monitoring older adults, may have a particularly important influence on the inflammation-depression relationship. Dopaminergic dysfunction in the basal ganglia that may be caused or made worse by the chronic, low-grade inflammatory process concomitant with human aging is associated with increased slowing. Similarly, slow gait in the context of elevated depressive symptomatology has been associated with higher mortality in older women. Investigating the nature of the relationship between late life depression, inflammation, and slowing, and the impact this phenotype has on treatment and long-term prognosis will result in better patient identification and the personalization of interventions to maximize treatment effectiveness in complex geriatric patients. This symposium will focus on the identification of a high-risk phenotype comprised of elevated markers of inflammation, depression, and slow gait (Dr. Patrick Brown), the CNS correlates of peripheral immune dysregulation in patients with mid-late life depression (Dr. Ebrahim Haroon), and the implications for targeting dopamine as a treatment option in depressed elders with motor slowing (Dr. Bret Rutherford). Dr. Steven Roose will discuss implications for clinicians and researchers.

Faculty Disclosures:
Patrick Brown
Nothing to disclose

Ebrahim Haroon
Nothing to disclose

Steven Roose
Consultant: Post-Graduate Physicians Press—N/A

Bret Rutherford
Nothing to disclose

THE EXAM STARTS IN THE HALLWAY: MOVEMENT DISORDERS IN GERIATRIC PSYCHIATRY

Session 111
Laura Marsh1; Nikolaus McFarland1; William M. McDonald2; Sarah M. Fayad3

1Baylor College of Medicine, Houston, TX
2Emory University School of Medicine, Atlanta, GA
3University of Florida College of Medicine, Gainesvilled, FL

Abstract: Dr. McFarland will review assessment of movement abnormalities in older patients with an emphasis on the phenomenology and differential diagnosis of Parkinson’s disease and atypical parkinsonian syndromes, including those associated with dementia syndromes. Dr. McDonald will describe drug-induced movement abnormalities and their phenomenology in geriatric psychiatry patients. Prevention, recognition, and management of drug-induced movement abnormalities will also be discussed. Dr. Fayad will discuss the distinguishing clinical features (motor and non-motor) and management of psychiatric disturbances associated with atypical parkinsonian syndromes in the geriatric patient.

Faculty Disclosures:
Sarah M. Fayad
Nothing to disclose

Laura Marsh
Nothing to disclose
ELECTION 2016: THE STAKES FOR MENTAL HEALTH AND AGING ADVOCATES
Session 201
Ilse R. Wiechers1,2; David Wasserman3

1US Department of Veterans Affairs, West Haven, CT
2Yale University School of Medicine, West Haven, CT
3Cook Political Report, Washington, DC

Abstract: This workshop, sponsored by the Public Policy Caucus, will explore the upcoming November 2016 Congressional and Presidential elections, the potential composition of the 115th Congress, and what those factors may mean for advocates of mental health and aging policies and programs. It will provide participants with a look forward to the 2016 elections and the impact of those elections on health care and aging issues over the next two years.

Faculty Disclosures:
David Wasserman
No Answer

Ilse R. Wiechers
Nothing to disclose

ETHICAL, LEGAL AND FORENSIC ISSUES IN GERIATRIC PSYCHIATRY
Session 202
Aarti Gupta1,2

1Yale University School of Medicine, New Haven, CT
2Department of Mental Health and Addiction Services, Middletown, CT

Abstract: Physical and cognitive decline in old age often leads to dependence on others and puts the autonomy of older adults at risk. A comorbid neuropsychiatric disorder can further compound this problem making this population liable to abuse. Such situations raise serious ethical issues that may easily be overlooked if the caregivers are not sensitive to the rights of the older adults with mental health disorders. One of the most important issues encountered in care of older adults is loss of their decision-making capacity, which raises questions about a person’s ability to consent to medical treatment and need for a surrogate decision maker or conservatorship. Psychiatrists are often entrusted with the responsibility of making this determination through capacity assessment and must be educated to recognize the need for such an evaluation. In this session, we will first review the ethical and legal issues in geriatric age group including capacity assessment, informed consent and appointing a surrogate decision maker and discuss some tools that may be helpful in making these assessments. As a unique corollary to loss of decision-making capacity, we will discuss assessment of criminal responsibility and competence to stand trial in aging offenders in the latter part of our presentation. Geriatric forensics is a lesser discussed topic in geriatric psychiatry, but with an increase in geriatric offenders, specialized training to deal with issues specific to this population has become important.

Faculty Disclosures:
Aarti Gupta
Nothing to disclose
KING LEAR AND GERIATRIC PSYCHIATRY: “THOU SHOULDST NOT HAVE BEEN OLD TILL THOU HADST BEEN WISE”
Session 203
Mark Rapoport
Sunnybrook Health Sciences Centre, University of Toronto, Toronto, ON, Canada

Abstract: Shakespeare’s King Lear resonates strongly in contemporary clinical geriatric psychiatry practice. The stubbornness of the octogenarian Lear’s favorite daughter sets him into a rage, and he wills his inheritance to his elder daughters who ultimately betray him, igniting a descent into disorientation, confusion, tangentiality, hallucinations and delusions. There are many possible diagnoses in this play of an older man who prepares to “crawl toward death”. The presentation will include reflection on how contemporary clinical experience and research literature parallels the story of Lear, and how the multiple potential clinical interpretations parallel the choices available to artists interpreting the play. The importance of various perspectives in history taking, longitudinal followup, persisting delirium symptoms, lucidity amidst impairment, terminal cognitive decline, wisdom in “foolishness”, as well as the devastating impacts of abuse and losses will be highlighted. Note that this abstract was accepted for AAGP 2015 but not presented due to family crisis.

Faculty Disclosures:
Mark Rapoport
Nothing to disclose

PSYCHIATRIC DISTURBANCES IN PARKINSON’S DISEASE: WHAT’S NEW?
Session 204
Laura Marsh1,2; Gregory Pontone3; Joel Mack4,5

1Baylor College of Medicine, Houston, TX
2Michael E. DeBakey Veterans Affairs Medical Center, Houston, TX
3Johns Hopkins University School of Medicine, Baltimore, MD
4Oregon Health & Science University, Portland, OR
5Portland Veterans Affairs Medical Center, Portland, OR

Abstract: Laura Marsh will review the recent literature on depressive disturbances in PD with a focus on the overlap of depressive phenomena overlap with motor, cognitive, anxiety, psychotic, and behavioral phenomena, as well as current and emerging treatment strategies.

Gregory Pontone will present data on the epidemiology, risk factors, characteristics, course, and treatment of anxiety disturbances in PD. Special attention will be paid to the diverse phenomenology of anxiety disturbances in PD and current research on treatment.

Joel Mack will discuss the features and clinical management of cognitive changes associated with PD, including dementia, mild cognitive impairment, and the “typical” cognitive profile. The characteristics and treatment of psychosis in PD will be described in the context of co-occurring cognitive deficits, and how cognitive impairment complicates psychiatric treatment of PD.

Faculty Disclosures:
Joel Mack
Nothing to disclose

Laura Marsh
Nothing to disclose

Gregory Pontone
Nothing to disclose
RECENT RESEARCH IN GERIATRIC ANXIETY DISORDERS

Session 205
Mary E. Dozier1,2; Catherine R. Ayers2,3; Emily S. Bower1,2; Julie Wetherell1,3

1SDSU/UCSD Joint Doctoral Program in Clinical Psychology, San Diego, CA
2VA San Diego Healthcare System, San Diego, CA
3UC San Diego, San Diego, CA

Abstract: There is a dearth of research on older adults suffering from disorders associated with the acute threat construct of the activation of the negative valence system, commonly known as anxiety disorders, including hoarding disorder (HD) and fear of falling. This session will focus on expanding the clinician’s knowledge of the impact of fear of falling and hoarding symptom severity on geriatric patient functionality. This session will also educate mental health providers on a novel intervention for HD in late life. Mary Dozier, M.S., will serve as chair and will also discuss the impact of excessive clutter, a core symptom of HD, on social and personal functioning, even when controlling for anxiety and depression. Emily Bower, M.S., will discuss results which suggest that fear of falling is associated with poorer functional recovery up to 52 weeks after hip fracture in older adults, even after controlling for age and other health-related variables. Catherine Ayers, Ph.D., will discuss the outcomes of a recently completed randomized controlled trial, which suggested that cognitive rehabilitation and exposure/sorting therapy (CREST) may be an effective treatment for late life hoarding. Julie Wetherell, Ph.D., will serve as discussant for the session.

Faculty Disclosures:
Catherine R. Ayers
Nothing to disclose

Emily S. Bower
Nothing to disclose

Mary E. Dozier
Nothing to disclose

Julie Wetherell
Nothing to disclose

UPDATE ON GERIATRIC PSYCHIATRY MAINTENANCE OF CERTIFICATION PROGRAM

Session 207
Jeffrey M. Lyness

University of Rochester School of Medicine & Dentistry, Rochester, NY

Abstract: Maintenance of Certification is a program required for continued board certification in geriatric psychiatry by the American Board of Psychiatry and Neurology. This symposium will provide AAGP meeting attendees with an update from a Psychiatry Director of the ABPN about its Maintenance of Certification (MOC) program (including recent changes in response to revised requirements issued by the American Board of Medical Specialties), information about how the AAGP can help support its members to maintain subspecialty certification, and an opportunity for participants to discuss issues related to maintaining ABPN subspecialty certification.

Faculty Disclosures:
Jeffrey M. Lyness
Nothing to disclose
AGEISM IN MEDICAL EDUCATION: HOW CAN WE CREATE ENDURING ATTITUDBINAL CHANGE?
Session 208
Susan W. Lehmann¹; Mary C. Blazek²; William B. Brooks³

¹Johns Hopkins University School of Medicine, Baltimore, MD
²University of Michigan School of Medicine, Ann Arbor, MI
³University of South Alabama College of Medicine, Mobile, AL

Abstract: The rapid aging of the U.S. population and shortage of clinicians who are adequately trained to care for older patients present an urgent challenge. Most geriatric mental health care will be delivered by clinicians who do not have specialized geriatric training. Consequently, all medical students must be prepared to assess and adequately care for older patients. Generational gaps between millenial medical students and older patients, as well as stigma about aging, can impede communication and delivery of care. Negative attitudes about aging pervade our society and can be present in the learning environment for medical students and trainees. Ageism in clinical settings can undermine educational efforts to engage medical students with older patients. In this symposium, three geriatric psychiatrists, who are also medical student educators, will address the problem of stigma related to aging and will discuss reasons why current approaches to geriatric education and attitudinal change are not working. Dr. Mary Blazek will discuss the nature of ageism and how it presents in society and in the hospital/clinic learning environment. Dr. W. Bogan Brooks will review current curricular approaches to geriatrics education in the medical school curriculum and their impact on medical knowledge and attitudes about aging. Dr. Susan Lehmann will explore possible new approaches to changing how we teach our current cohort of millennial medical students to diminish negative attitudes and bias about aging.

Faculty Disclosures:
Mary C. Blazek
Nothing to disclose

William B. Brooks
Nothing to disclose

Susan W. Lehmann
Nothing to disclose

CLINICAL ADVANCES IN ECT FOCUSED ON ELDERLY PATIENTS
Session 210
William M. McDonald¹; Georgios Petrides²; Adriana Hermida¹; Charles Kellner³

¹Emory University Medical School, Atlanta, GA
²UMDNJ, Camden, NJ
³Mount Sinai School of Medicine, New York, NY

Abstract: William McDonald will moderate a discussion of the latest clinical advances in ECT based on new research findings. George Petrides will outline the current understanding of the mechanisms of action of ECT and the implications in the elderly for responding optimally to ECT. Adriana Hermida will discuss the efficacy of ECT in treating neurobehavioral symptoms in elderly patients with neurological disorders such as Parkinson’s disease, Alzheimer’s disease and stroke. Charles Kellner will present the most recent data from the Consortium on Research in ECT (CORE) group on the Prolonging Remission in Depressed Elderly or PRIDE multicenter ECT clinical trial.

Faculty Disclosures:
Adriana Hermida
No Answer
CURRENT AND PROSPECTIVE PROGRAMS IN GERIATRIC TELEPSYCHIATRY
Session 211
Taya Varteresian1; Alex Threlfall2; Pei Huey Nie3

1LA County DMH, Los Angeles, CA
2Veterans Administration, Santa Rosa, CA
3Aligned TeleHealth Inc, Agoura Hills, CA

Abstract: This session will provide an overview of various models of care utilizing telepsychiatry for a variety of geriatric psychiatry populations. The history of telepsychiatry and unique challenges facing the delivery of such services in the geriatric population will be discussed including strategies for more effective delivery of care. There will be a description of the delivery telepsychiatry services to patients in outpatient psychiatry clinics, nursing homes, inpatient psychiatric facilities and emergency room as well as home visits. Populations included in the various models will include veterans as well as minority populations and strategies for delivering culturally sensitive approaches will be discussed.

Faculty Disclosures:
Pei Huey Nie
Other: Aligned Telehealth—Employed by Aligned TH and future shareholder

Alex Threlfall
Nothing to disclose

Taya Varteresian
Nothing to disclose

TAMING THE ELEPHANT IN THE ROOM: INTERVENTIONS FOR IMPROVING DEMENTIA CARE USING TECHNOLOGY
Session 212
Malaz Boustani1; Quincy Samus2; Helen C. Kales3; Constantine G. Lyketsos2

1Indiana University, Indianapolis, IN
2Johns Hopkins University, Baltimore, MD
3University of Michigan, Ann Arbor, MI

Am J Geriatr Psychiatry 24:3, Supplement 1
Abstract: Dementia affects over 5 million Americans, and with the aging of the population, that number is projected to grow to 16 million by 2050. Families are profoundly affected with over 15 million family caregivers providing an estimated 18 billion hours of unpaid care per year valued at $220 billion—an amount 8 times the 2012 total revenue of McDonald’s. Healthcare spending on dementia ($203 billion per year) makes it the country’s most expensive healthcare condition, but current systems of care are like a “crazy quilt”—disorganized and poorly connected. Outpatient providers on the “front-lines” of dementia care often have had no formal (or even informal) training in managing the illness and involving families. When patients get sick and require hospitalizations, they and their families face a nightmare of emergency rooms and hospitals ill-equipped to deal with their needs. Numerous hospitalizations are “potentially preventable”, meaning better preventative care in the outpatient arena and family support could have averted the need for a costly and difficult experience for the person and their family. Many potentially preventable hospitalizations are associated with the very difficult behaviors that almost universally accompany the dementia syndrome and which families are left on their own to figure out. The current state of dementia care including management of functional changes and behavioral symptoms of dementia is literally the elephant in the room—too little discussed in the national dementia conversation focused on “the cure”. Improving and coordinating dementia care can bring costs down significantly and improve quality of life immensely. Although a number of model programs for dementia care have been created in recent years, most have not been able to be scaled or fully disseminated. Problems with dissemination may have to do with time and resource constraints operating in the primary care settings where most patients with dementia are treated. One way to move past these constraints is by marrying dementia care interventions with technology. This session will describe three unique and innovative dementia care interventions, the Aging Brain Care Medical Home (ABC MedHome), MIND at HOME, and WeCareAdvisor, all of which use technology in various ways to improve their impact. Additional discussion will include how components of the various interventions presented may be incorporated into clinical practice with or without technology.

Faculty Disclosures:
Malaz Boustani
Nothing to disclose

Helen C. Kales
Nothing to disclose

Constantine G. Lyketsos
Consultant: Astra-Zeneca, Glaxo-Smith Kline, Eisai, Novartis, Forest, Supernus, Adlyfe, Takeda, Wyeth, Lundbeck, Merz, Lilly, Pfizer, Genentech, Elan, NFL Players Association, NFL Benefits Office, Avanir, Zinfandel, BMS, Abvie, Janssen, Orion, Otsuka, Servier, Astellas—Several consulting projects
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Other: Pfizer, Forest, Glaxo-Smith Kline, Health Monitor—Honorarium or travel support

Quincy Samus
No Answer

TOO OLD FOR THAT? DIAGNOSTIC AND CLINICAL IMPLICATIONS OF ADHD IN OLDER ADULTS
Session 213
Shilpa Srinivasan1; James G. Bouknight1,2; Juliet A. Glover1,2; Kimberly Kruse2

1University of South Carolina School of Medicine, Columbia, SC
2Palmetto Health, Columbia, SC

Abstract: Attention-Deficit Hyperactivity Disorder (ADHD) is a clinical condition, symptoms of which include inattention, impulsivity and/or hyperactivity. Clinical presentations include inattention, distractibility and forgetfulness, executive problems with organization and task completion, as well as restlessness, impulsivity and/or hyperactivity. Although it is well known in children/adolescents, and with a growing body of scientific literature on ADHD in adults, epidemiologic data is limited to individuals under age 50. However, it remains under-researched, under-recognized, and under-addressed in older adults.
Determining the etiology of ADHD symptoms in older adults can be challenging. However, diagnostic challenges include differentiating between ADHD and neurocognitive disorders in elderly. Collateral information sources commonly used during diagnostic processes in children or younger adults, such as school records and family members to validate early attention problems, are often unavailable. Clinical presentations of ADHD in elderly and symptoms over the life span are also poorly understood. During this symposium, a review of ADHD in older adults will be presented. The role of neuropsychological testing in the diagnostic evaluation will be discussed. Clinical vignettes will highlight diagnostic and treatment implications.

Faculty Disclosures:
James G. Bouknight
Nothing to disclose

Juliet A. Glover
Nothing to disclose

Kimberly Kruse
Nothing to disclose

Shilpa Srinivasan
Nothing to disclose

VIVE LA DIFFÉRENCE: SEX DIFFERENCES IN COGNITIVE AND EMOTIONAL AGING
Session 214
Paul Newhouse¹; Julie A. Dumas²; Monique Cherrier³; C.N. Epperson⁴

¹Vanderbilt University, Nashville, TN
²University of Vermont, Burlington, VT
³University of Washington, Seattle, WA
⁴University of Pennsylvania, Philadelphia, PA

Abstract: Sex differences emerge very early in life and appeared to influence virtually every part of cognitive and emotional functioning. Risk for psychopathology is also linked to sex and gender with greater risk for depression in women and substance abuse and suicide in men. Biological events such as menopause for women and “andropause” for men can impact brain function, cognitive performance, and emotional processing.

This symposium will explore recent research on biological and cognitive/emotional changes that occur beginning in middle-age and moving into old age. Changes in brain functioning occur with aging differentially by sex, for example loss of estrogen may put women at increased risk of Alzheimer’s disease (AD) whereas men who undergo decline of androgens may show effects on cognitive cognition, but not increased AD risk.

Emotional functioning during the aging process may be differentially experienced and expressed between the sexes. How this is affected by sex and gender is less well understood, especially with the differential risk for psychopathology. Stress responsivity also may change with aging, partly as a result of cognitive factors but also as a result of a changing biological and hormonal milieu.

The presenters will focus on recent studies that illuminate changes in female and male functioning across reproductive aging, middle and old age. Dr. Julie Dumas (University of Vermont), will review models of normal cognitive aging and how they differ by sex, and extend this work into an examination of how changing sex hormones in aging women alters the activity of brain systems involved in cognitive performance. Dr. Monique Cherrier (University of Washington) will review the effects of changing androgen levels on cognitive and emotional performance in men and examine the how sex impacts the cognitive and emotional effects of cancer treatment and chemotherapy in older individuals. Dr. Neill Epperson (University of Pennsylvania) will discuss emotional changes that occur at the menopause transition, the biological reasons for these changes, and brain changes with premature menopause. Dr. Paul Newhouse (Vanderbilt) will act as chair and present information on how sex-related hormonal and cognitive systems impact stress responsivity and mood and how this changes with aging.

Faculty Disclosures:
Monique Cherrier
Nothing to disclose
ASSESSING FRONTAL LOBE-MEDIAL TEMPORAL LOBE CONNECTIVITY IN ALZHEIMER’S DISEASE AND RELATED DEMENTIAS
Session 300
Azziza Bankole
Virginia Tech Carilion School of Medicine, Roanoke, VA

Abstract: Coordinated oscillations in membrane potentials provide a neurobiological basis for brain network efficiency. Non-uniform neural circuitry disruption is a hallmark of Alzheimer’s diseases (AD) dysfunction, disproportionately impacting prefrontal and temporal circuits. Oscillations in the gamma frequency are thought to be critical for memory formation and retrieval processes. Our aim was to determine specific neural network dysfunction in AD prefrontal and temporal circuitry during implicit and explicit memory performance in the gamma frequency. Eight patients diagnosed with mild to moderate AD and 15 age-matched controls were scanned using EEG. One hour prior to scanning, subjects performed a picture-naming task. During scanning, subjects performed an implicit picture-naming task and explicit recognition task (i.e., old/new judgments). Behaviorally, naming facilitation (i.e., priming; Novel-Repeated) was not significantly different (p = 0.32) between patients (mean = 0.06 s, SD = 0.2) and controls (mean = 0.09 s, SD = 0.04), suggesting relative sparing of implicit memory. In contrast, during the explicit memory task, prominent differences in behavioral performance between groups were observed (Control mean = 74.8% correct, SD = 5.6; AD mean = 42.4% correct, SD = 11.6; p < 0.01), with AD patients performing at chance. These findings suggest that aberrant gamma oscillations in the prefrontal cortex and anterior ventral temporal cortex differentiate intact vs. defective explicit memory performance. However, implicit memory performance, activating more lateral inferior temporal cortex, demonstrated intact gamma oscillations in AD. These findings suggest a longitudinal temporal gradient in gamma dysfunction that correlates with behavioral sparing and impairment in AD.

Faculty Disclosures:
Azziza Bankole
Nothing to disclose
Abstract: Self-reported attitudes of Americans towards racial and ethnic minorities, women, homosexuals and transgendered individuals have grown steadily more positive since the 1960’s. Despite this, inequities in healthcare remain, and there has been very slow progress towards increasing the numbers of historically under-represented individuals in academic and medical settings. For example, despite the fact that 48% of medical school graduates last year were women, nationwide, only 13% of academic medical school department chairs and deans are women. Only 7% of all academic medical faculty are from under-represented minority groups, although these comprise 26% of the general US population. Disparities in the level and quality of mental healthcare for people from minority groups are also well-documented. These statistics, and recent controlled studies, show a disconnect between explicit attitudes and policies, on the one hand, and equal treatment and opportunities, on the other. One important reason for the discrepancy is likely to be the influence of implicit or unconscious biases, i.e., reactions and attitudes that occur without awareness, control, intention, or attentional resources. This workshop will address why fairness, inclusiveness and cultural competence are important for success in geriatric mental health care. It will describe unconscious bias and explain where it comes from, and how it is relevant to our clinical, teaching, and research activities. Last, this workshop will discuss strategies of what we can do individually and institutionally to reduce unintended negative consequences of implicit attitudes and improve our professional interactions and climate. The workshop includes both didactic presentation and interactive exercises to engage the audience in learning about and exploring the consequences of implicit biases.

Faculty Disclosures:
Sheena I. Dev
Nothing to disclose

Nanette M. Dowling
Nothing to disclose

Lisa T. Eyler
Nothing to disclose

Tatyana Shteinlukht
Nothing to disclose

IS AGING A DISEASE? SUBJECTIVE COGNITIVE IMPAIRMENT AND PHYSIOLOGIC FACTORS
Session 302
Barry Reisberg1; Yonas E. Geda2; Davangere P. Devanand3; Gary W. Small4

1New York University Langone Medical Center, Department of Psychiatry, New York, NY
2McGill University, Centre for Studies in Aging, Faculty of Medicine, Montreal, QC, Canada
3Mayo Clinic, Department of Psychiatry & Psychology, Scottsdale, AZ
4Mayo Clinic, Department of Neurology, Scottsdale, AZ

Abstract: Studies are identifying psychological and physiological factors which antedate dementia and demise, e.g., in the Global Deterioration Scale (GDS), 3 predementia stages were described (Reisberg et al., Am J Psychiatry, 1982): GDS stage 1 = a No Cognitive Impairment (NCI) stage, GDS stage 2 = a Subjective Cognitive Impairment (SCI) stage, and GDS stage 3 = a Mild Cognitive Impairment (MCI) stage. In 1986, an estimated duration for the SCI stage (15 years), was published (Reisberg, Geriatrics, 1986). In 2006, Prichep et al., published an 8.9 year outcome study of SCI persons and observed that 27 of 44 declined. The decline rate differed by only 0.23% from the 6.67% annual change rate which would occur if the SCI baseline population was uniformly distributed and SCI lasts precisely 15 years. In Barry Reisberg’s current study, SCI outcome was examined over a 2.13 year mean interval in 98 healthy SCI persons. At follow-up, 8 subjects reverted to NCI, 68 subjects remained SCI, and 22 declined to MCI or dementia. The annual progression rate was calculated using the formula:

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improved = +1, unchanged = 0, and declined = −1. Therefore, 6.707% progressed per year, differing from the 1986 estimated rate of progression by only 0.04%. Hence, the SCI stage of eventual Alzheimer’s disease is a remarkably robustly identifiable entity, beginning 15 years before the advent of MCI. Community studies have indicated that this SCI condition is very common, occurring in 25 to 56% of persons ≥ age 65.

Yonas Geda and colleagues examined the role of the apolipoprotein E ɛ4 genotype on the risk of SCI. They conducted a case control study of 114 persons (mean age, 69 years) of which 47 were APOE ɛ4 carriers. They found that the odds of having SCI were significantly higher among APOE ɛ4 carriers who were >70 years of age, but not in persons ≤70 years of age. They concluded that the odds of having SCI are dependent on APOE ɛ4 carrier status and age.

Davangere Devanand and colleagues studied elderly persons using a smell identification test. They followed 757 of their subjects at 2 & 4 year intervals. They found that lower scores on the smell test at baseline predicted subsequent cognitive decline and also Alzheimer’s dementia (p < 0.0001). They also found a very significant association between lower baseline smell test scores and mortality (p < 0.0001). This association remained very significant after controlling for demographic variables, dementia status, medical comorbidity, vision and hearing impairment (p < 0.001). They concluded that olfactory testing can be useful in estimating clinical outcome and prognosis in older adults.

Gary Small, an expert in brain aging and dementia will discuss these new clinical and physiological markers of cognitive change and demise in older persons.

Faculty Disclosures:
Davangere P. Devanand
Consultant: AbbVie—Scientific Advisory Board
Consultant: Lundbeck—Scientific Advisory Board
Consultant: Intracellular Therapeutics—Adviser

Yonas E. Geda
Nothing to disclose

Barry Reisberg
Research Support: US Department of Health and Human Services, Grants AG03051 and P30 AG08051 from the National Institute of Aging of the U.S. National Institutes of Health—They have and are providing research support for our studies
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Research Support: The Louis J. Kay and June E. Kay Foundation—They are providing research support for our studies
Research Support: The Hagedorn Foundation—They are providing research support for our studies
Research Support: Mr. William Silberstein—They had provided research support for our studies
Research Support: Mrs. Miriam Glaubach and Dr. Felix Glaubach—They are providing research support for our studies
Other: Barry Reisberg, MD PC—Developer and Copyright Holder of Research Instruments Used in our studies
Research Support: Zachary and Elizabeth M. Fisher Center for Alzheimer’s Research Foundation—They are providing research support for our studies
Research Support: The Stringer Foundation—They are providing research support for our studies
Research Support: Forest Laboratories—They were providing research support for our studies

Gary W. Small
Speakers Bureau: Forum Pharmaceuticals—Alzheimer’s education
Consultant: Forum Pharmaceuticals—Alzheimer’s education
Shareholder: TauMark, LLC—Brain imaging company
Research Support: Pom Wonderful—Clinical trial
Speakers Bureau: Activis—Alzheimer’s education
Consultant: Activis—Alzheimer’s education
Consultant: Novartis—Alzheimer’s education
Speakers Bureau: Novartis—Alzheimer’s education
Consultant: Cogniciti—Memory assessment tools
Speakers Bureau: Herbalife—Brain health education
Consultant: Herbalife—Brain health education
Consultant: Lilly—Alzheimer’s education
Speakers Bureau: Lilly—Alzheimer’s education
MANAGING DEMENTIA RESIDENTS IN LONG-TERM CARE USING TELEHEALTH
Session 303
Susan Scanland

Abstract: A geriatric psychiatrist and gerontological nurse practitioner will present their personal experience using telehealth services to manage dementia, depression and other chronic mental illnesses in rural long-term care facilities. The session will discuss the logistics of being a clinical provider for services: scheduling, medical record review, interdisciplinary collaboration, billing, staff, family and resident acceptance. Benefits and challenges of offering remote dementia and geropsychiatric expertise will be reviewed. Case studies will be presented on common clinical presentations that the geriatric psychiatrist and gerontological nurse practitioner analyze in their facilities. An emphasis will be made on strategies to decrease antipsychotic use in dementia.

Faculty Disclosures:
Susan Scanland
Speakers Bureau: Actavis/Allergan
Speakers Bureau: Avanir

MINDFULNESS TRAINING AND EXERCISE: BENEFITS FOR BRAIN, MIND, AND BODY
Session 304
Eric Lenze1; Julie Wetherell2; Steve D. Hickman3; David Sinacore1

1Washington University School of Medicine, St Louis, MO
2University of California San Diego, San Diego, CA

Abstract: Increasingly, geriatric mental health providers are interested in the concept of Integrative health. For older adults, this means incorporating mind-body modalities into care, as part of attending to brain, mind, and body. We will focus on two modalities: mindfulness training and exercise. In this symposium, we will discuss the benefits and mechanisms of these modalities. We will describe recent research into the benefits (for health, cognitive function, and symptoms). Our group will include clinical experts in both modalities who will describe them as interventions and provide a “how to” for geriatric mental health providers looking to incorporate them into care plans. Finally, we will present the rationale for a recently-funded study, “MEDEX” (meditation, education, and exercise for older adults) which will provide definitive answers regarding the brain benefits of these modalities.

Faculty Disclosures:
Steve D. Hickman
Nothing to disclose

Eric Lenze
Nothing to disclose

David Sinacore
No Answer

Julie Wetherell
Nothing to disclose
FROM PHONE TO HOME: UTILIZING TELEPHONIC CASE MANAGEMENT, HOME HEALTH CARE AND PSYCHIATRIC INTEGRATION TO IDENTIFY AND TREAT HOMEBOUND OLDER ADULTS WITH MENTAL DISORDERS
Session 305
Gary Kennedy; Jerome Z. Korenblatt; Janice Korenblatt; Mirnova E. Ceide

Montefiore Medical Center/Albert Einstein College of Medicine, Bronx, NY

Abstract: 20% of older adults have a mental health need but only 3% of them will seek care from a mental health specialist. The majority of older adults will receive treatment for a mental health problem in a medical setting. To address this need, hospital systems are integrating mental health services into medical settings like primary care clinics. Improvement in patient psychiatric symptoms and medical indices like hemoglobin A1C utilizing collaborative care models such as Improving Mood: Access to Collaborative Treatment (IMPACT) and a multi-condition collaborative care intervention known as TEAMcare illustrate the benefit of integrated inter-professional models of care. Cognitive disorders, depression and anxiety are twice as prevalent in homebound older adults compared to non-homebound older adults. Although mental health integration in primary care settings has been successful, frail or homebound older adults may be unable to engage in these programs. Integrating mental health screening and services into telephonic case management and certified home health care agencies may be the best way to engage these patients. Federal and State agencies have recognized the importance of screening for depression and cognitive impairment; and screening questions are now embedded into Medicaid Uniform Assessment System (UAS) and home care assessment tools like the Outcome and Assessment Information Set (OASIS). However screening is only as beneficial as the services and care coordination that are available once a patient screens positive. This session will illustrate how telephonic case management can successfully screen for mental disorders like depression and trigger in home assessments of home bound older adults by partnering with a certified home health agency and a colocated geriatric psychiatry program. During this session, presenters will describe how telephonic case management, a home health care social work department and a colocated psychiatric program can collaborate to develop comprehensive and practical plans to provide mental health care to home bound patients and minimize unnecessary health care utilization. Presenters will use case examples to illustrate how case management, home care and psychiatry were able to collaborate across the health network to maintain homebound older adults safely in the community.

Faculty Disclosures:
Mirnova E. Ceide
Nothing to disclose

Gary Kennedy
Nothing to disclose

Janice Korenblatt
Nothing to disclose

Jerome Z. Korenblatt
Nothing to disclose

HONOR SCHOLARS ALUMNI SESSION
Session 306
Michelle Conroy

Yale School of Medicine, West Haven, CT

Abstract: Each Honors Scholar is required to complete a scholarly project under guided mentorship. This session allows for three to four Honors Scholars to present their work. The selections will be made by the Scholars Program chairs, and Teaching/Training Committee Chair.
LIFESTYLE INTERVENTIONS IN LATE-LIFE NEUROPSYCHIATRIC DISORDERS
Session 307
Soham Rej1; Martha Sajatovic2; Julie Wetherell3,4; Helen Lavretsky5

1University of Toronto, Toronto, ON, Canada
2University Hospitals Case Medical Centre, Cleveland, OH
3University of California, San Diego (UCSD), San Diego, CA
4San Diego Healthcare System, San Diego, CA
5University of California, Los Angeles (UCLA), Los Angeles, CA

Abstract: Title: Lifestyle Interventions in Late-Life Neuropsychiatric Disorders

Chair: Soham Rej, MD, MSc1

Faculty: Martha Sajatovic, MD2, Julie Wetherell, PhD, ABPP3,4, Helen Lavretsky, MD5

Discussant: Helen Lavretsky, MD5

Lifestyle interventions such as exercise, mindfulness, tai-chi, and yoga are becoming recognized as legitimate therapies in geriatric mental illness and for promoting brain health. In this session, presenters will discuss new data examining how lifestyle interventions can be helpful in treating and preventing a broad range of late-life neuropsychiatric disorders. We will first explore how exercise can improve depressive symptoms and cognition in Parkinson’s disease (Dr. Sajatovic). We will then examine how mindfulness-based stress reduction can enhance neurocognitive function and lower serum cortisol levels in older patients with anxiety and depression (Dr Wetherell, with thanks to Dr. Eric Lenze). We will also explore how a brief intervention incorporating aspects of mindfulness and Tai Chi is tolerated by older adults with psychosis and other severe mental illnesses (Dr. Rej). Finally, we will observe how yoga improved verbal memory and default mode network connectivity in older adults with subjective memory complaints (Dr. Lavretsky). Following the presentations, there will be discussion about the clinical applications of lifestyle interventions and future directions for research.

Faculty Disclosures:
Helen Lavretsky
Research Support: Actavis/Forest Research Inst—research grant
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Other: Oxford Univ Press—royalties
Other: Hopkins Univ Press—royalties

Soham Rej
Nothing to disclose

Martha Sajatovic
Research Support: Janssen—Research grant
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Research Support: Merck—Research grant
Consultant: Otsuka—Expert consultation
Consultant: Sunovion—Expert consultation
Consultant: Amgen—Expert consultation
Consultant: Bracket—Expert consultation
Consultant: Prophase—Expert consultation
2016 AAGP Annual Meeting

Julie Wetherell
Nothing to disclose

POLICY AND ADVOCACY 101
Session 308
Alex Threlfall\textsuperscript{1,2}; Ilse R. Wiechers\textsuperscript{3,4}; Paul D. Kirwin\textsuperscript{4,5}; Steven Huege\textsuperscript{6}

\textsuperscript{1}San Francisco VA Healthcare System, San Francisco, CA
\textsuperscript{2}University of California San Francisco, San Francisco, CA
\textsuperscript{3}NEPEC, Office of Mental Health Operations, Department of Veterans Affairs, West Haven, CT
\textsuperscript{4}Yale University School of Medicine, New Haven, CT
\textsuperscript{5}VA Connecticut Healthcare System, West Haven, CT
\textsuperscript{6}Perelman School of Medicine of the University of Pennsylvania, Philadelphia, PA

Abstract: This workshop, sponsored by the Public Policy Caucus, will explore aging and mental health policy issues and help prepare participants to engage in effective advocacy for our patients and the field of geriatric psychiatry. Presentations will review the key current issues in aging and mental health policy, discuss effective strategies for engaging and communicating with policymakers, provide an insider’s perspective into Congressional policy making, and discuss how to educate and garner interest amongst trainees in health care advocacy.

Faculty Disclosures:
Steven Huege
Nothing to disclose

Paul D. Kirwin
Nothing to disclose

Alex Threlfall
Nothing to disclose

Ilse R. Wiechers
Nothing to disclose

STATEWIDE CLINICAL OUTREACH PROGRAM FOR THE ELDERLY: A SYSTEM OF CARE FOR MANAGING BEHAVIORAL DISTURBANCES IN DEMENTIA
Session 309
Deborah Klaszky\textsuperscript{1}; Lucille M. Esralew\textsuperscript{2}; Martin M. Forsberg\textsuperscript{1}

\textsuperscript{1}Rowan University School of Osteopathic Medicine, Stratford, NJ
\textsuperscript{2}Trinitas Regional Medical Center, Cranford, NJ

Abstract: The Statewide Clinical Outreach Program for the Elderly (S-COPE) provides crisis response and clinical outreach to older adults (55+) residing at nursing facilities who experience mental health and/or behavioral crises. S-COPE provides on-site assessments, consultations and clinical interventions at screening centers, psychiatric inpatient units and within long term care facilities. The specialized consultation program is intended to enhance the professional skills of staff persons who provide services to the elderly population, with particular attention to the prevention, assessment, treatment and intervention of psychiatric and behavioral crises. In addition, S-COPE offers in-service trainings, on-site coaching of staff, short term counseling to residents and consultations with staff. The program has been helpful in reducing unnecessary emergency room visits, designated screening visits, and inpatient psychiatric hospitalizations in the elderly. The team provides around the clock seven day a week response. All services are provided free of charges. S-COPE received recognition as an innovative program by Harvard’s Ash Center through its Bright Ideas program.

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TRANSFORMING THE GERIATRIC WORKFORCE: TODAY AND TOMORROW
Session 310
Sandra S. Swantek1; Lisa L. Boyle2; Elizabeth J. Santos3; Joel E. Streim4

1Rush University Medical Center, Chicago, IL
2University of Wisconsin School of Medicine and Public Health, Madison, WI
3University of Rochester, Rochester, NY
4University of Pennsylvania, Philadelphia, PA

Abstract: Health and Human Services has announced over $35 million in awards to 44 organizations in 29 states to create the Geriatrics Workforce Enhancement Program (GWEP). The GWEP seeks to transform care for older adults by integrating geriatrics with primary care and by building educational and clinical infrastructure that responds to national, regional and local needs through change that improves healthcare outcomes. GWEP will build the knowledge and skills of providers while enhancing collaboration across the continuum of care from hospital to outpatient to community and home settings in multiple settings; urban, suburban and rural. Each GWEP has 3 years to realign clinical training efforts so that training is consistent with transformative healthcare systems and breaks down barriers to collaboration within health care teams. The anticipated outcome is a healthcare workforce tailored to the needs of individual communities and improved health outcomes for older adults. Geriatric Psychiatrists are making significant contributions to the GWEP. This session introduces attendees to four of these programs, their models, and unique responses to the needs of their communities.

Faculty Disclosures:
Lisa L. Boyle
Nothing to disclose

Elizabeth J. Santos
Nothing to disclose

Joel E. Streim
No Answer

Sandra S. Swantek
Nothing to disclose

AMYLOID IMAGING: USING A NEW BIOMARKER TO IMPROVE DIAGNOSIS
Session 311
Yvette I. Sheline1; Norman L. Foster2; John Seibyl3

1University of Pennsylvania, Philadelphia, PA
2University of Utah, Salt Lake City, UT
3Institute for Neurodegenerative Disorders, New Haven, CT

Am J Geriatr Psychiatry 24:3, Supplement 1
Abstract: The purpose of this course is to provide participants an update on the clinical implementation of recently approved PET radiotracers for detecting brain amyloid deposition. The emphasis will be on appropriate clinical use and difficult diagnostic and disease monitoring issues. In particular, focus will be on training, clinical challenges of image interpretation, appropriate referrals, as well as forward looking issues of incorporating image quantitation into clinical practice. A discussion of cases with audience and faculty will be conducted to focus on whether to scan or not.

Faculty Disclosures:
Norman L. Foster
Speakers Bureau: EISAI—presented 3 lectures in South Korea
Shareholder: PAMS, Inc.—CEO and Investigator
Consultant: Piramal—consulting on scientific survey
Research Support: GE Healthcare—PE and amyloid imaging
Research Support: Merck & Co., Inc.—clinical trial
Research Support: Quintiles Transnational Corp.—clinical trial

John Seibyl
Shareholder: Molecular Neuroimaging, LLC—Equity
Consultant: GE Healthcare—Ad Board member
Consultant: Piramal Imaging—Speaker, trainer image interpretation

Yvette I. Sheline
Nothing to disclose

CAM FOR THE GOOSE AND THE GANDER: DEMONSTRATIONS OF MIND-BODY PRACTICES FOR PATIENTS AND PRACTITIONERS
Session 312
Soham Rej1; Moria J. Smoski2; Helen Lavretsky3; Paul Newhouse4

1University of Toronto, Toronto, ON, Canada
2Duke University Medical Center, Durham, NC
3University of California at Los Angeles, Los Angeles, CA
4Vanderbilt University School of Medicine, Nashville, TN

Abstract: A growing body of research supports the use of mind-body practices to promote health and well-being in aging. Interventions that include movement-based (yoga, tai-chi) and contemplative meditation practices have been shown to reduce psychological distress including depression and anxiety; improve physiological risk factors such as pro-inflammatory gene expression and immune function; and support cognition. Neuroimaging studies have demonstrated improvements in connectivity in salience, default mode, and attention networks following mind-body interventions. These interventions are also a growing part of self-care and burnout prevention programs for health care professionals. For those who are not familiar with meditative practices, a lack of exposure can be a barrier to recommending practices to patients or to considering implementing a personal practice.

This symposium will present orientations and demonstrations of three types of CAM practices that have been shown to increase quality of life and reduce distress in both patients and health care providers. We will begin with a demonstration of seated tai-chi movements. Next, we will demonstrate two practices employed in Mindfulness Based Stress Reduction (MBSR) and other mindfulness-based interventions: mindfulness of breath, as well as a loving-kindness meditation. A third demonstration will focus on yoga meditation. We will end the symposium with a discussion of the practices and how they can be used to support health and well-being across geriatric mental health contexts.

Faculty Disclosures:
Helen Lavretsky
Research Support: Actavis/Forest Research Inst—research grant
Research Support: NIMH—grants
Research Support: NCCIH—grants
DELIIRIUM AND POST-OPERATIVE COGNITIVE DECLINE: WHO IS AT RISK FOR THE LONG-TERM NEUROCOGNITIVE AND NEUROPSYCHIATRIC EFFECTS?

Session 313
Sophia Wang1; Patrick J. Smith2; Jeffrey Browndyke1

1Duke University Medical Center/Durham VAMC, Durham, NC
2Duke University Medical Center, Durham, NC

Abstract: This presentation panel will discuss risk factors for delirium and post-operative cognitive decline and their neuropsychiatric sequelae. We will focus our presentations on the populations who are at high risk for developing these neurocognitive and neuropsychiatric disorders: those who were hospitalized in the intensive care unit, underwent cardiac surgical procedures, and received lung transplantation. Delirium, which is common in patients hospitalized for medical and surgical events, has been traditionally viewed as an acute neuropsychiatric disorder. Recent data suggest that delirium may be better conceptualized as a chronic neuropsychiatric disorder, with potentially preventable risk factors and subsequent cognitive impairment. We will discuss the neurocognitive and neuropsychiatric sequelae of delirium for patients who were hospitalized in the intensive care unit (ICU) or received lung transplantation. Finally, we will discuss the phenomena of post-operative cognitive decline (POCD) and post-operative mood decline. POCD may affect up to 40% of older post-operative patients and can persist well beyond acute stabilization and recovery. We will also present neuropsychological and neuroimaging research which has revealed common cognitive patterns associated with POCD.

Faculty Disclosures:
Jeffrey Browndyke
Nothing to disclose

Patrick J. Smith
Nothing to disclose

Sophia Wang
Nothing to disclose

DEVELOPING YOUR CLINICIAN/EDUCATOR CAREER

Session 314
Dennis M. Popeo1; Alessandra Scalmati2; Lory E. Bright-Long3; Elizabeth J. Santos2

1NYU School of Medicine, New York, NY
2University of Rochester School of Medicine and Dentistry, Rochester, NY
3Albert Einstein College of Medicine, Bronx, NY
4SUNY at Stony Brook School of Medicine, Stony Brook, NY

Am J Geriatr Psychiatry 24:3, Supplement 1
Abstract: Numerous members of the AAGP, specifically those involved in the teaching and training committee identified a need for the organization to better support members on the clinician/educator track (C/ET) in academic institutions. This is not surprising, as a general lack of support for those in the C/ET has been noted in the literature. In order to help meet this need, we propose a special 2 hour symposium entitled “Developing Your Clinician/Educator Career.” This matches a similar symposium currently geared towards members interested in a research career. In our symposium, we will present topics of interest to clinician educators including advice on creating a teaching portfolio and using that portfolio for promotion, presenting new teaching skills and allowing participants to practice them, while encouraging networking for support and scholarly collaboration. Dennis Popeo will introduce the program and discuss the process of creating an educational portfolio. Elizabeth Santos and Jeffrey Lyness will discuss the process of promotion in an academic institution from both sides: one as a recently successful candidate for promotion and the other as a member of the school’s promotion committee. Brandon Yarns, Allesandra Scalmati and Lory Bright-Long will present a new paradigm for teaching and review methods of providing effective feedback.

Faculty Disclosures:
Lory E. Bright-Long
Nothing to disclose

Dennis M. Popeo
Nothing to disclose

Elizabeth J. Santos
Nothing to disclose

Alessandra Scalmati
Nothing to disclose

References

FROM TBI TO CTE: A REVIEW AND UPDATE ON DIAGNOSIS, MANAGEMENT AND PATHOPHYSIOLOGY OF MILD TBI AND CHRONIC TRAUMATIC ENCEPHALOPATHY
Session 315
Luisa Skoble1; Stephen Correia1; Stephen Mernoff1; Todd M. Solomon2

1Warren Alpert School of Medicine, Brown University, Providence, RI
2Boston University School of Medicine, Boston, MA

Abstract: Traumatic Brain Injury is a common clinical syndrome. It is most common in the very young (ages 1–4) and in adolescents and young adults (15–24 years) with another peak in the elderly (age >65 years). In older patients, falls are the leading cause of TBI. The diagnosis of this condition is easily made in cases of severe injury but can be more difficult in cases of mild TBI. The term concussion is often used synonymously with mild TBI; it can present with numerous symptoms such as changes in cognition, mood and behavior that may come to the attention of the geriatric psychiatrist; however diagnosing mild TBI can be more challenging. Repetitive instances of mild TBI can lead to a condition referred to as Chronic Traumatic Encephalopathy (CTE) which often presents with various neuropsychiatric symptoms and leads to morbidity and premature mortality.

This symposium will focus on mild TBI and CTE. Dr. Luisa Skoble will do a very brief overview of TBI and the epidemiology and moderate the session. Dr. Todd Solomon will present information on the pathophysiology of concussion and repeated subconcussive injury and CTE. He will review data from the UNITE and LEGEND studies and present examples of actual patients with their clinical histories and their brain pathology from the brain bank of the Chronic Traumatic Encephalopathy
Center at of the Boston University School of Medicine where he is a post-doctoral fellow doing research with Dr. Ann McKee. Dr. Stephen Correia, a neuropsychologist and neuroimaging researcher at the Warren Alpert School of Medicine at Brown University will present information on multimodal MRI neuroimaging procedures for diagnosing mild TBI. Dr. Stephen Mernoff, a neurologist at the Warren Alpert School of Medicine at Brown University and the chief of neurology and the polytrauma clinic at the Providence VA Medical Center will present on the management of concussion from the perspective of a neurologist specializing in traumatic brain injury and cognitive rehabilitation.

Faculty Disclosures:
Stephen Correia
Nothing to disclose

Stephen Mernoff
No Answer

Luisa Skoble
Nothing to disclose

Todd M. Solomon
No Answer

GAY AND GRAY VI: “I THOUGHT I WOULD NEVER GET OLD!” WHAT GERIATRIC MENTAL HEALTHCARE PROVIDERS NEED TO KNOW WHEN CARING FOR INDIVIDUALS AGING WITH HIV
Session 316
Brandon C. Yarns1; Raeanne C. Moore2; Maria J. Marquine2; William J. Apfeldorf3

1Yale University Department of Psychiatry, New Haven, CT
2University of California San Diego Department of Psychiatry, San Diego, CA
3University of New Mexico Department of Psychiatry, Albuquerque, NM

Abstract: With the introduction of Highly-Active Antiretroviral Therapy (HAART) in the mid-1990s, HIV-infected (HIV+) persons who had thought their illness would kill them were brought back to life in what was called the “Lazarus Phenomenon.” Since then, HIV+ persons have been aging with—rather than dying from—their illness. Unlike Lazarus, those aging with HIV are at risk for HIV-associated neurocognitive disorder (HAND) and other adverse mental health outcomes, but recent literature shows that successful aging remains possible in people living with HIV. This edition of Gay and Gray will provide clinicians with an overview of the complications of aging with HIV and provide strategies to facilitate successful aging in their patients living with HIV.

Faculty Disclosures:
Brandon Yarns
Nothing to disclose

Raeanne Moore
Nothing to disclose

Maria Marquine
Nothing to disclose

William Apfeldorf
Nothing to disclose
NEXT STEPS: JOB SEARCH AND CAREER CHOICES 101

Session 317
Isis Burgos-Chapman¹; Paul D. Kirwin¹,²; Michelle Conroy¹,²; Ipsit V. Vahia³

¹Yale University School of Medicine, New Haven, CT
²West Haven VA Hospital, West Haven, CT
³University of California, San Diego, CA

Abstract: After years of medical training, trainees entering the workforce often feel ill prepared to embark upon the job search process and know little about the art of contract negotiations. Jackson & Coker, an Atlanta-based healthcare recruiting firm representing clients throughout the U.S., found that over half of 500 physicians in their study left their first job after five years, and more than half of those stayed only one or two years. This session will provide an outline of how to navigate the job search and interview process and include advice on how to determine career paths within and outside of academic institutions. This session will also review how to balance an early career in Geriatric Psychiatry, along with the challenges of having a young family and student loan debt. This session will also address specific requirements in job search timelines for international medical graduates.

This session has been sponsored by the Teaching and Training Committee.

Faculty Disclosures:
Isis Burgos-Chapman
Nothing to disclose

Michelle Conroy
Nothing to disclose

Paul D. Kirwin
Nothing to disclose

Ipsit V. Vahia
Nothing to disclose

ALTERNATIVE APPROACHES TO ENHANCE COGNITIVE AND EMOTIONAL FUNCTIONING IN AT-RISK OLDER ADULTS

Session 400
Daniel Jimenez¹; Stephen J. Bartels²; Philip S. Harvey³; Sara J. Czaja¹

¹University of Miami Miller School of Medicine, Miami, FL
²Geisel School of Medicine, Hanover, NH

Abstract: The identification of older adults at greatest risk for these disorders and the development of timely and empirically based interventions to treat these mental disorders are major public health challenges. Older adults from racial/ethnic minority groups, those who are socially isolated, as well as older adults living with severe mental illness (SMI) experience high levels of psychiatric and physical comorbidity, including increased risk of mortality. Poor diet, lack of physical activity, and little social activity or social isolation have been highlighted by the CDC and NIH as behavioral risks or threats to healthy. Given these risk factors, behavioral interventions that use counseling strategies to equip participants with the necessary knowledge and skills to modify and sustain a healthy diet, increase physical activity, and reduce social isolation seem particularly promising in at-risk older adult populations. Regular engagement in these health behaviors is protective and may diminish the toxic effects of chronic physical (e.g., diabetes mellitus) and mental (e.g., depression) illness on the brain. Additionally, older adults suffering from SMI are at increased risk for further cognitive decline and dementia. Therefore, interventions such as cognitive remediation, which uses drill and practice, compensatory and adaptive strategies to facilitate improvement in targeted cognitive areas, have been shown to positively impact cognitive functioning among older adults with SMI. Delivering these interventions presents a growing challenge to an inadequately prepared healthcare workforce. Effective approaches to this challenge are likely
to involve using non-traditional means that are acceptable in these at-risk populations. This session will illustrate novel strategies such as the use of paraprofessionals (e.g., community health workers) and technology (e.g., tablet) to deliver simple, scalable interventions.

Faculty Disclosures:
Stephen J. Bartels
Nothing to disclose

Sara J. Czaja
Nothing to disclose

Philip S. Harvey
Consultant: Acadia—Phase 3 trials
Consultant: Boehringer_Ingelheim—Phase 3 trials
Consultant: Forum Pharma—Phase 3 trials
Consultant: Otsuka America—Phase 3 trials
Consultant: Sunovion—Phase 3 trials
Consultant: Sanofi—Phase 3 trials
Consultant: Takeda—Phase 3 trials

Daniel Jimenez
Nothing to disclose

CLEARING THE MIND: BENZODIAZEPINES AND THE AGING BRAIN
Session 401
Melinda S. Lantz1,2; Pui Y. Wong1,2; Maria Varvara2; Amy Harsany1

1Mount Sinai Beth Israel, New York, NY
2Icahn School of Medicine at Mount Sinai, New York, NY

Abstract: The dangers of benzodiazepine use have been increasingly well-described. The risks of these agents are significant, including an increase in falls, hip fractures and cognitive impairment. Recent research indicates that use of benzodiazepines and related drugs is associated with an increased risk of dementia. The argument can be made that the risk of these agents outweigh the benefits for the majority of older persons.

The history of benzodiazepine use crosses decades of remarkable progress and development. These agents were marketed as miraculous cures of all anxiety, promoted to some of the most widely prescribed drugs world-wide and became a model for chemical dependency. Prescriptions of these agents to elderly patients remain robust and older adults continue to receive more benzodiazepines than other age groups despite the increased risk of adverse events. This continues despite advances in the treatment of anxiety, mood and sleep disorders that now includes several forms of CBT and alternative pharmacologic agents.

Reducing and eliminating the use of these agents, “clearing the mind”, in elderly patients may pose many challenges. We discuss a clinical pathway for the elimination and reduction in benzodiazepine use in elderly patients. This structured pathway uses patient engagement, alternative agents, psychotherapy and education. Both patient and physician factors correlate with successful reductions in benzodiazepine use.

Faculty Disclosures:
Amy Harsany
No Answer

Melinda S. Lantz
Nothing to disclose
INTEGRATED CARE: LESSONS FROM THE VETERANS ADMINISTRATION PC-MHI PROGRAM

Session 402
Paul D. Kirwin¹,²; Andrew Pomerantz³; Michelle Conroy¹,²; Ilse R. Wiechers¹,²

¹Yale University School of Medicine, New Haven, CT
²VA Connecticut Healthcare System, West Haven, CT
³Office of Mental Health Services, VHA, Washington, DC

Abstract: The Veterans Administration Primary Care-Mental Health Integration Program (PC-MHI) was established to enhance collaboration between Primary Care and Mental Health in attempts to increase access, decrease stigma, and provide immediate, time limited mental health care co-located in a primary care setting. The VA PC-MHI home page overview describes the effort as follows: “Integrated care can be administered either by primary care providers who are given appropriate support, or by collaborating behavioral health providers based in primary care. These types of arrangements can promote patient engagement in and adherence to treatment, avoid stigmatization, and allow providers to coordinate care for mental health problems and other medical conditions.” This approach is especially advantageous in early detection and treatment of neuropsychiatric disorders in late life.

Faculty Disclosures:
Michelle Conroy
Nothing to disclose

Paul D. Kirwin
Nothing to disclose

Andrew Pomerantz
No Answer

Ilse R. Wiechers
Nothing to disclose

SENIOR INVESTIGATOR WORKSHOP

Session 403
Helen Lavretsky¹; Molly V. Wagster²; George Niederehe³; Jovier Evans³

¹UCLA, Los Angeles, CA
²NIH/NIA, Bethesda, DC
³NIH/NIMH, Bethesda, CA

Abstract: The Research Committee will organize this workshop in collaboration with program officers from the NIMH and NIA who will serve as presenters (Jovier Evans, George Niederehe, and Molly Wagster are invited). The presenters will review program developments, and transitions within the NIMH and NIA that are critical for investigators to hear about at meeting time, as well as current funding opportunities, including relevant RFAs or other opportunities made available through the NIH Common Fund or Neuroscience Blueprint. Among the topics for discussion will be the evolving landscape at NIH for interventions’ research, especially critical for those investigators involved in intervention development. Funding priorities for
Alzheimer’s disease research will be presented. An update about the NIMH RDoC initiative and the use of dimensional constructs as compared to categorical diagnoses in psychopathology studies will be provided. The NIH staff will provide practical suggestions about the grant writing and application process, (including points to consider choosing among grant mechanisms). Potentially, this session will be best scheduled as a pre-meeting event to avoid interference with other events.

Faculty Disclosures:
Jovier Evans
Nothing to disclose

Helen Lavretsky
Research Support: Actavis/Forest Research Inst—research grant
Research Support: NIMH—grants
Research Support: NCCIH—grants
Research Support: Alzheimer’s Research and prevention foundation—grant/contract
Other: Oxford Univ Press—royalties
Other: Hopkins Univ Press—royalties

George Niederehe
Nothing to disclose

Molly V. Wagster
Nothing to disclose

COGNITIVE AGING: PROGRESS IN UNDERSTANDING AND OPPORTUNITIES FOR ACTION
Session 406
Robert Wallace

Abstract: The Institute of Medicine developed a consensus and evidenced based report on cognitive aging, as distinct from mild neurocognitive and major neurocognitive disorder. Cognitive aging is ubiquitous to the process of aging, yet highly variable across individuals and functions. Some functions decrease, such as memory and executive function. Others, such as wisdom and perhaps vocabulary, may increase. In contract to neurocognitive disorders, neuronal loss is minimal yet synaptic dysfunction does occur, suggesting the brain with aging is far more plastic than previously thought. Empirical studies support evidence based interventions which can retard or even improve cognitive function with aging, especially exercise, reduction of cardiovascular risk factors, and careful monitoring medications. These findings among others will be presented.

Faculty Disclosures:
Robert Wallace

EVALUATING MEDICATION RELATED ADVERSE EVENTS USING ADMINISTRATIVE HEALTH DATA: RESEARCH METHODS AND CLINICAL IMPLICATIONS FOR GERIATRIC PSYCHIATRY
Session 407
Mark Rapoport1,2; Dallas Seitz3; Andrea Iaboni2,4; Krista Lanctot1,2

1Sunnybrook Health Sciences Centre, University of Toronto, Toronto, ON, Canada
2University of Toronto, Toronto, ON, Canada
3Queen’s University, Kingston, ON, Canada
4University Health Network, Toronto, ON, Canada
Abstract: The increasing array of publications cautioning about the risks of psychotropic medications in older adults poses a challenge to the geriatric psychiatrist. Much of the literature on risks comes not from randomized controlled trials, but from observational studies. How valid are the findings from these studies, and how can they be applied to practice? Dr. Dallas Seitz will discuss the basics of pharmacoepidemiology using administrative health data, including their strengths and limitations. He will review aspects of methodology and design, as well as strategies for controlling for confounding in observational studies. Then, these principles will be applied to studies of the risks of falls (Dr. Andrea Iaboni), motor vehicle crashes (Dr. Mark Rapoport) and mortality (Dr. Krista Lanctot). Finally, an interactive session will involve participants in discussing case scenarios meant to highlight the challenges of translating the risk-related research to practice.

Faculty Disclosures:
Andrea Iaboni
Nothing to disclose

Krista Lanctot
Research Support: AbbVie Corporation—N/A
Consultant: AbbVie Corporation—N/A
Research Support: Novartis Canada—N/A
Research Support: Lundbeck—N/A

Mark Rapoport
Nothing to disclose

Dallas Seitz
Nothing to disclose

GERIATRIC MENTAL HEALTH SERVICES AND RESEARCH IN THE VETERANS HEALTH ADMINISTRATION
Session 408
John T. Little1,2; Marsden H. McGuire3,4; Theresa Gleason5; Richard M. Allman6

1U.S. Department of Veterans Affairs, D.C. Veterans Affairs Medical Center, Washington, DC
2Georgetown University School of Medicine, Washington, DC
3U.S. Department of Veterans Affairs, Veterans Health Administration, Mental Health Services, Washington, DC
4Johns Hopkins School of Medicine, Baltimore, MD
5U.S. Department of Veterans Affairs, Office of Research & Development, Washington, DC
6U.S. Department of Veterans Affairs, Veterans Health Administration, Office of Geriatrics and Extended Care, Washington, DC

Abstract: In this session, 2 presenters and our discussant from the Veterans Health Administration Central Office in Washington, DC will provide an overall view of geriatric mental health services and research that is being provided in the United States. VHA serves a large cohort of aging Veterans with complex medical, behavioral, and/or neurocognitive comorbidities. Integrated geriatric mental health services across health care settings are critical for meeting the needs of this population. Partnership between Mental Health and Geriatrics leadership enables integration of program and policy development, e.g., integration of psychologists and/or psychiatrists in Home Based Primary Care, Community Living Center (CLC, i.e., nursing home), Palliative Care, and Geriatric Primary Care teams. A range of dementia initiatives address dementia assessment, intervention, caregiver support, and staff training. For example, the STAR-VA program trains CLC interdisciplinary teams to manage challenging behaviors among CLC residents with dementia. VHA supports a robust portfolio of research directed towards better understanding of complex issues in aging Veterans considering medical, behavioral and psychiatric needs. VA’s geriatric psychiatry research covers a wide swath of funding mechanisms intended to support studies intended to develop or enhance evidence for treatments and care for this population. In fulfilling the objectives to advance geriatric care, VA also works with other federal research partners, including for example, working with other agencies in support of the National Alzheimer’s Project Act. This session is intended to provide an overview of the VA research portfolio on geriatric psychiatry and commonly occurring conditions, the funding mechanisms VA research supports, and major research initiatives for the near future. The Veterans Health Administration (VHA) Office of Geriatrics and Extended Care (GEC)
vision is to empower Veterans and the Nation to rise above the challenges of aging, disability or serious illness. We strive to achieve this vision through honoring Veterans' preferences for health, independence and well-being by advancing expertise, programs, and partnerships. The Office of Mental Health is one of our most important partners in these efforts.

Faculty Disclosures:
Richard M. Allman
Nothing to disclose

Theresa Gleason
Nothing to disclose

John T. Little
Nothing to disclose

Marsden H. McGuire
Nothing to disclose

SCIENCE OR SNAKE OIL?: REVIEW OF USE OF TESTOSTERONE AND VITAMINS/ NUTRIENTS IN THE ELDERLY
Session 409
Luisa Skoble1; Ellen Bosley2; Hilary B. Whitlatch1

1Warren Alpert School of Medicine, Brown University, Providence, RI
2Veterans Health Administration, Central Office, Washington, DC

Abstract: Patients frequently reach out for both prescription and over the counter treatments in the hope of improving their health and vigor and staving off disease. There is lot of information in the media and sometimes even in medical journals that can be confusing and even contradictory. Testosterone replacement is one example of a treatment that is being frequently used to treat non-specific symptoms that may or may not be attributable to the physiologic and usual normal decline in testosterone with aging. Another modality that is commonly used are dietary choices and dietary supplements such as vitamins. This session will seek to establish the evidence base for these commonly used treatments.

Faculty Disclosures:
Ellen Bosley
No Answer

Luisa Skoble
Nothing to disclose

Hilary B. Whitlatch
No Answer

YOU LET MY MOTHER DO WHAT?! SEXUAL INTIMACY AND DECISION-MAKING CAPACITY IN COGNITIVELY IMPAIRED OLDER ADULTS
Session 410
Eitan Z. Kimchi1,2; Daniel D. Sewell3; Gregory Dolin4,5; Jason Karlawish6

1Johns Hopkins University, Department of Psychiatry, Baltimore, MD
2Johns Hopkins Bayview Medical Center, Department of Psychiatry, Baltimore, MD
3University of California, San Diego, CA
4University of Baltimore School of Law, Baltimore, MD

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Abstract: The media recently drew attention to the unsettling trial of Henry Rayhons, a 78-year old man in Iowa accused of having sex with his wife while she was living in a nursing home with dementia. Staff members there believed she was mentally incapable of consenting to sex. The state charged Mr. Rayhons with sexual abuse in the third-degree, a felony, for which he was eventually found not guilty. This case highlights the challenge for our society to balance individuals’ rights to engage in one of life’s primal pleasures and acts of self-expression, with the clinical, legal, and ethical obligations to protect vulnerable individuals who may be unable to consent due to cognitive impairment. A panel, comprised of two geriatric psychiatrists, a geriatrician-ethicist, and an attorney-physician, will summarize the currently available information and published guidelines on how to assess whether a person living with dementia has the capacity to consent to sexual intimacy. We will consider whether sexual intimacy is able to fit within the current framework of competency and decision-making abilities, and explore how “consent” is conceptualized in other essential acts of self-expression, such as voting. We will review how laws and policies allowing law enforcement to bring charges of domestic abuse or sexual assault without the victim’s consent will need to be re-evaluated and adjusted in the context of cases like that of Mr. Rayhons. We will illustrate the importance of having open dialogue with patients and families on patients’ sexual preferences, akin to discussions on end-of-life care. We will discuss ways for health professionals to communicate patients’ wishes on intimacy to law enforcement when there is a question of consent.

Faculty Disclosures:
Gregory Dolin
Nothing to disclose

Jason Karlawish
Nothing to disclose

Eitan Z. Kimchi
Nothing to disclose

Daniel D. Sewell
Consultant: ActivCare, Inc—Advisory Board Member
Research Support: Hartford Foundation—Associate Director of the UC San Diego Hartford Center of Excellence in Geriatric Psychiatry

CITALOPRAM FOR AGITATION IN AD (CitAD): PHARMACOKINETIC STUDIES, SUBGROUP ANALYSES, AND EFFECT ON OTHER NEUROPSYCHIATRIC SYMPTOMS
Session 412
Constantine G. Lyketsos1; Bruce G. Pollock2; Lon Schneider3; Anton P. Porsteinsson4

1Johns Hopkins Medicine, Baltimore, MD
2University of Toronto, Toronto, ON, Canada
3UCLA, Los Angeles, CA
4University of Rochester, Rochester, NY

Abstract: Introduction: Citalopram for Agitation in AD (CitAD) was carried out by a collaborative of 8 universities that worked together implementing earlier clinical trials targeting neuropsychiatric symptoms (NPS) in Alzheimer’s disease (AD). CitAD findings were cited by Neurology Today as a Top 10 Advance in Neurology for 2014. Furthermore, NIA highlighted the importance of CitAD findings in its 2014 Annual Report.

Methods: CitAD was a 9-week, multi-center, randomized, placebo-controlled clinical trial that evaluated the efficacy and safety of citalopram at a target dose of 30 mg per day for agitation in AD. CitAD enrolled 186 participants with AD, Mini-Mental State Examination (MMSE) scores 5–28, and clinically significant agitation requiring pharmacologic therapy (agitation score >4 on the Neuropsychiatric Inventory (NPI) at baseline). The study achieved 91% participant retention, with 80% remaining on therapy over all 9 weeks.

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Results: As previously reported, citalopram at 30 mg daily was effective for agitation in patients with AD, with significant reductions in three measures of agitation: mADCS-CGIC, NBRS, and Cohen-Mansfield Agitation Inventory. About 40% of patients on citalopram had moderate or marked reduction in agitation, compared with 26% on placebo. We report here that in addition to agitation, citalopram improved affective symptoms and delusions. Compared with placebo, participants on citalopram declined more on MMSE and exhibited prolongation of the QTc interval. The adverse effects on MMSE and QTc were closely linked to R-citalopram blood concentrations, but efficacy was linked closely to S-citalopram concentrations. Few pre-specified predictors of response could be identified, but patients with nursing home residence did not benefit from citalopram, while an index of symptoms suggested a subgroup of patients who benefitted the most. For example, patients with predominately affective symptomatology did better on citalopram (52% substantial clinical improvement) vs. placebo (14%).

Discussion: Citalopram at a dose of 30 mg/day is effective for agitation in patients with AD and leads to broad improvement in NPS, including delusions. Adverse effects on cognition and cardiac conduction appear to be primarily linked to R-citalopram, suggesting that S-citalopram might be both safer and more effective. Finally, citalopram appears to be most effective for a subgroup of patients with agitation, especially those with prominent affective symptoms.

Faculty Disclosures:
Constantine G. Lyketsos
Consultant: Astra-Zeneca, Glaxo-Smith Kline, Eisai, Novartis, Forest, Supernus, Adlyfe, Takeda, Wyeth, Lundbeck, Merz, Lilly, Pfizer, Genentech, Elan, NFL Players Association, NFL Benefits Office, Avanir, Zinfandel, BMS, Abvie, Janssen, Orion, Otsuka, Servier, Astellas—Several consulting projects
Research Support: NIMH, NIA, Associated Jewish Federation of Baltimore, Weinberg Foundation, Forest, Glaxo-Smith-Kline, Eisai, Pfizer, Astra-Zeneca, Lilly, Ortho-McNeil, Bristol-Myers, Novartis, National Football League, Elan, Functional Neuromodulation—Several research projects
Other: Pfizer, Forest, Glaxo-Smith Kline, Health Monitor—Honorarium or travel support

Bruce G. Pollock
Nothing to disclose

Anton P. Porsteinsson
Research Support: AstraZeneca—To my institution
Research Support: Avanir—To my institution
Research Support: Biogen—To my institution
Research Support: Eisai—To my institution
Research Support: Ely Lilly—To my institution
Research Support: Merck—To my institution
Research Support: Roche—To my institution
Research Support: Transition Therapeutics—To my institution
Research Support: Toyama—To my institution
Consultant: Lundbeck—Advisory Board
Consultant: Merck—Advisory Board
Consultant: Functional Neuromodulation—DSMB
Consultant: NYPI—DSMB
Consultant: Quintiles—DSMB

Lon Schneider
No Answer

PSYCHIATRIC CARE FROM A DISTANCE—CURRENT CHALLENGES AND FUTURE IMPLICATIONS
Session 413
Ipsit V. Vahia1; Rujvi Kamat2; Shilpa Srinivasan3; Ching Yu4

1University of California, San Diego, CA
2University of South Carolina School of Medicine, Columbia, SC
3McGill University, Montreal, QC, Canada
Abstract: With our aging population and a limited number of geriatric psychiatrists, innovations will be needed in order to meet the ever-growing demands for geropsychiatric services. Novel information technologies such as telehealth or applications (“apps”) may effectively target unmet needs in geriatric psychiatry by facilitating access to health care for patients who have limited mobility or those who live in remote areas. It can also directly help enhance communication between mental health teams and their patients. However, certain logistical and technical challenges are yet to be resolved; these uncertainties have served as barriers to the widespread adoption of such technology. Dr. Kamat and Dr. Yu will begin the session with an overview of the current challenges, which include tolerability for the patients, adaptability of the technology, legal and privacy aspects of such technology. Dr. Kamat will present data from her pilot study on the use of various “apps” as interventions for behavioral disturbances in older adults with dementia. Dr. Srinivasan will present new data from her geriatric telepsychiatry services in a clinical setting and discuss successes and challenges in application. Dr. Yu will then present findings from his pilot study on the use of computer tablets for self-report measures (ie. BSI-53, PHQ-9, and ADL).

Faculty Disclosures:
Rujvi Kamat
Nothing to disclose

Shilpa Srinivasan
Nothing to disclose

Ipsit V. Vahia
Nothing to disclose

Ching Yu
Nothing to disclose

RESEARCH UPDATE: ADVANCES IN THERAPEUTICS IN GERIATRIC PSYCHIATRY SPONSORED BY THE AAGP RESEARCH COMMITTEE
Session 414
Helen Lavretsky¹; Martha Sajatovic²; William M. McDonald³; Krista Lanctot⁴

¹UCLA, Los Angeles, CA
²Case Western University, Cleveland, OH
³Emory University, Atlanta, GA
⁴University of Toronto, Toronto, QC, Canada

Abstract: The Symposium on the Advances in Therapeutics in Geriatric Psychiatry will provide an in-depth discussion of recent therapeutic advances in the treatment of geriatric mood disorders and dementing illnesses using pharmacological, neuromodulation, lifestyle and psychosocial interventions. Current approaches to diagnosing and treating major late-life mental disorders will be discussed and include late-life depression, bipolar disorders, cognitive decline, and dementia and behavioral disturbances. The role of comorbid medical and cognitive conditions in treatment response will be discussed. The basic mechanisms and biomarkers of treatment response in late-life neuropsychiatric disorders will be discussed. The Symposium will target broad audience of clinicians, researchers and trainees at various levels of training in psychiatry. Participants will gain familiarity with the applications of translational neuroscience research and will understand the effect of aging on treatment response in late-life neuropsychiatric disorders.

Faculty Disclosures:
Krista Lanctot
Research Support: AbbVie Corporation—N/A
Consultant: AbbVie Corporation—N/A
Research Support: Novartis Canada—N/A
Research Support: Lundbeck—N/A
SKY ABOVE CLOUDS: THE ONGOING CREATIVE AGE OF GENE COHEN. FEATURING WENDY MILLER IN THE 2ND ANNUAL GENE COHEN LECTURE

Session 415
Wendy L. Miller1; Marc Agronin2

1Create Therapy Institute, Kensington, MD
2Miami Jewish Health Systems, Miami, FL

Abstract: Gene Cohen was undeniably one of the founding fathers and great luminaries of the field of geriatric psychiatry. His groundbreaking work to develop the concept of creative aging has provided a blueprint for the future of aging where growth and development play as important a role as decline and disability. In the 2nd Annual Gene Cohen Lecture, his wife Wendy Miller describes their life and work together as it culminated in several final projects, now unveiled in her new book “Sky Above Clouds: Finding Our Way Through Creativity, Aging and Illness.” In a work that is both manual and memoir, Dr. Miller incorporates Gene Cohen’s voice and thinking into her own and describes how creative aging can enable individuals to grow beyond the limitations imposed by both illness and aging.

Faculty Disclosures:
Marc Agronin
Nothing to disclose

Wendy L. Miller
Nothing to disclose
Alphabetical List of Presenters at Education Sessions

Marc Agronin

Iqbal Ahmed
Career Choices for IMG Geriatric Psychiatrists

Richard Allman
Geriatric Mental Health Services and Research in the Veterans Health Administration

William Apfeldorf
Gay and Gray VI: “I thought I Would Never Get Old!” What Geriatric Mental Healthcare Providers Need to Know When Caring for Individuals Aging with HIV

Ali Asghar Ali
Diversity in Action: Assessing and Addressing Biases in the Workplace and Patient Care.

Alireza Atri MD, PhD
New Research Poster Session

Catherine Ayers
Recent Research in Geriatric Anxiety Disorders

Meera Balasubramaniam MD, MPH
Case Presentation Session 3

Azziza Bankole
Assessing Frontal Lobe-Medial Temporal Lobe Connectivity in Alzheimer’s Disease and Related Dementias Sensors, Smartphones and Geriatric Psychiatry

Stephen Bartels
Alternative Approaches to Enhance Cognitive and Emotional Functioning in At-Risk Older Adults

Bruce Bassi MD
New Research Poster Session

Kristen Berendzen M.D., Ph.D.
Early Investigator Posters

Kathleen Bingham MD
Early Investigator Posters

Mary Blazek
Ageism in Medical Education: How Can We Create Enduring Attitudinal Change?

Dan Blazer
Cognitive Aging: Progress in Understanding and Opportunities for Action
Emily Bomasang-Layno MD, MSc  
*Early Investigator Posters*

Ellen Bosley  
*Science or Snake Oil?: Review of use of testosterone and vitamins/nutrients in the elderly.*

James Bouknight  
*Too Old for That? Diagnostic and Clinical Implications of ADHD in Older Adults.*

Malaz Boustani  
*Taming the Elephant in the Room: Interventions for Improving Dementia Care Using Technology*

Emily Bower  
*Recent Research in Geriatric Anxiety Disorders*

Lisa Boyle  
*Transforming the Geriatric Workforce: Today and Tomorrow*

Lory Bright-Long  
*Developing Your Clinician / Educator Career*

Jessica Broadway MD  
*Case Presentation Session 2*

William Brooks  
*Ageism in Medical Education: How Can We Create Enduring Attitudinal Change?*

Patrick Brown  
*Slowing, Inflammation, and Depression: Implications for Assessment and Treatment of Older Depressed Individuals*

Jeffrey Browndyke  
*Delirium and Post-Operative Cognitive Decline: Who is at Risk for the Long-term Neurocognitive and Neuropsychiatric Effects?*

Sarah Brubaker BS  
*Early Investigator Posters*

Sarah Brunelle MD  
*Case Presentation Session 3*

Isis Burgos-Chapman  
*Next Steps: Job Search and Career Choices 101*

Amy Byers PhD, MPH  
*New Research Poster Session*

Eve Byrd  
*Elder Neglect and Exploitation: Global Challenges and Local Solutions*
Sarah Canham Ph.D.  
*Early Investigator Posters*

Erin Cassidy-Eagle Ph.D.  
*New Research Poster Session*

Mirnova Ceïde  
*From Phone to Home: Utilizing Telephonic Case Management, Home Health Care and Psychiatric Integration to Identify and Treat Homebound Older Adults with Mental disorders*

Lakshminarayana Chekuri MD, MPH, PhD(ABD)  
*Early Investigator Posters*

Stephen Chen MD  
*New Research Poster Session*

Monique Chérrier PhD  
*New Research Poster Session*  
*Vive la Différence: Sex Differences in Cognitive and Emotional Aging*

Christine Chiu MD  
*Early Investigator Posters*

Jun Ku Chung HBSc  
*New Research Poster Session*

Carl Cohen  
*Late Life Schizophrenia: Advances in Research*

Michelle Conroy  
*Honor Scholars Alumni Session*  
*Integrated Care: Lessons from the Veterans Administration PC-MHI Program*  
*Next Steps: Job Search and Career Choices 101*

Stephanie Correia  
*From TBI to CTE: a Review and Update on Diagnosis, Management and Pathophysiology of Mild TBI and Chronic Traumatic Encephalopathy*

Csilla Csoboth MD, PhD  
*New Research Poster Session*

Sara Czaja  
*Alternative Approaches to Enhance Cognitive and Emotional Functioning in At-Risk Older Adults*

Nicholas David BA  
*Early Investigator Posters*

Karina Davis MD  
*Early Investigator Posters*
Todd Derreberry MD  
_**Early Investigator Posters**_

Poonam Deshmukh MD, MPH  
_**Early Investigator Posters**_

Sheena Dev  
_Dealing with the Unseen: Assessing and Addressing Implicit Attitudes to Enhance Professional Success in Geriatric Mental Healthcare_  
_**Early Investigator Posters**_

Davangere Devanand  
_Is Aging a Disease? Subjective Cognitive Impairment and Physiologic Factors_

David DeWorsop MD, MFS  
_**Early Investigator Posters**_

Romika Dhar M.D.  
_**Early Investigator Posters**_

Gregory Dolin  
_You Let My Mother Do What?! Sexual Intimacy and Decision-Making Capacity in Cognitively Impaired Older Adults_

Nanette Dowling  
_Dealing with the Unseen: Assessing and Addressing Implicit Attitudes to Enhance Professional Success in Geriatric Mental Healthcare_

Mary Dozier  
_Recent Research in Geriatric Anxiety Disorders_

Julie Dumas  
_Vive la Différence: Sex Differences in Cognitive and Emotional Aging_

Laura Dunn  
_What's Palliative Care Got To Do With It?_  
_Paying it Forward II: An Interactive Workshop on Mentorship_

Dominique Elie MD, MSc  
_**Early Investigator Posters**_

Raisa Epistola BA  
_**Early Investigator Posters**_

C. Epperson  
_Vive la Différence: Sex Differences in Cognitive and Emotional Aging_

Jovier Evans  
_Senior Investigator Workshop_
Lisa Eyler
*Dealing with the Unseen: Assessing and Addressing Implicit Attitudes to Enhance Professional Success in Geriatric Mental Healthcare Diversity in Action: Assessing and Addressing Biases in the Workplace and Patient Care.*

Sarah Fayad
*The Exam Starts in the Hallway: Movement Disorders in Geriatric Psychiatry*

Denise Feil
*Paying it Forward II: An Interactive Workshop on Mentorship*

Julie Filips MD
*New Research Poster Session*

Corinne Fischer
*Psychosis and dementia: when two worlds collide*

Andrea Formella PharmD
*New Research Poster Session*

Candace Fraser
*Late Life Schizophrenia: Advances in Research*

Elizabeth Galik PhD, CRNP, FAANP
*New Research Poster Session*

Erica Garcia-Pittman MD
*Case Presentation Session 2*

Jennifer Gatchel MD, PhD
*Early Investigator Posters*

Marie Anne Gebara MD
*Early Investigator Posters*

Yonas Geda
*Is Aging a Disease? Subjective Cognitive Impairment and Physiologic Factors*

Ambreen Ghori MD
*Early Investigator Posters*

Jessica Gilbert
*Assessing Frontal Lobe-Medial Temporal Lobe Connectivity in Alzheimer's Disease and Related Dementias*

Oliver Glass MD
*Early Investigator Posters*

Theresa Gleason
*Geriatric Mental Health Services and Research in the Veterans Health Administration*
Juliet Glover
*Too Old for That? Diagnostic and Clinical Implications of ADHD in Older Adults.*

Nidhi Goel MD
*Case Presentation Session 1*

Kyle Goldberger BSc
*Early Investigator Posters*

Aarti Gupta
*Ethical, Legal and Forensic Issues in Geriatric Psychiatry*

Ebrahim Haroon
*Slowing, Inflammation, and Depression: Implications for Assessment and Treatment of Older Depressed Individuals*

Amy Harsany
*Clearing the Mind: Benzodiazepines and the Aging Brain*

Philip Harvey
*Alternative Approaches to Enhance Cognitive and Emotional Functioning in At-Risk Older Adults*

Corey Hassell BA
*Early Investigator Posters*

Kevin Hawkins PhD
*New Research Poster Session*

Saima Hedrick
*Amyloid Imaging: Using a New Biomarker to Improve Diagnosis*

Adriana Hermida
*Clinical Advances in ECT Focused on Elderly Patients*

Steve Hickman
*Mindfulness training and exercise: benefits for brain, mind, and body*

Nancy Hodgson PhD, RN, FAAN
*New Research Poster Session*

Amanda Holloway MD
*Early Investigator Posters*

Emily Holmes MD, MPH
*Early Investigator Posters*

Steven Huege
*Policy and Advocacy 101*
Andrea Iaboni MD DPhil  
*Case Presentation Session 1  
Early Investigator Posters  
Evaluating Medication Related Adverse Events Using Administrative Health Data: Research Methods and Clinical Implications for Geriatric Psychiatry.*

Daniel Jimenez  
*Alternative Approaches to Enhance Cognitive and Emotional Functioning in At-Risk Older Adults  
New Research Poster Session*  

Kim Johnson MD  
*Early Investigator Posters*  

Beverly Jones MD  
*Case Presentation Session 3*  

Jin Hui Joo  
*Diversity in Action: Assessing and Addressing Biases in the Workplace and Patient Care.*  

Helen Kales  
*Taming the Elephant in the Room: Interventions for Improving Dementia Care Using Technology*  

Rujvi Kamat  
*Psychiatric Care from a Distance - Current Challenges and Future Implications*  

Jason Karlawish  
*You Let My Mother Do What?! Sexual Intimacy and Decision-Making Capacity in Cognitively Impaired Older Adults*  

John Kasckow  
*Late Life Schizophrenia: Advances in Research  
New Research Poster Session*  

Christopher Kaufmann PhD, MHS  
*Early Investigator Posters*  

Charles Kellner  
*Clinical Advances in ECT Focused on Elderly Patients*  

Gary Kennedy  
*From Phone to Home: Utilizing Telephonic Case Management, Home Health Care and Psychiatric Integration to Identify and Treat Homebound Older Adults with Mental disorders*  

Rachel Kester DO  
*Early Investigator Posters*  

Asif Khan MD  
*Early Investigator Posters*  

Tamkeen Khurshid MBBS  
*Early Investigator Posters*
Eitan Kimchi
You Let My Mother Do What?! Sexual Intimacy and Decision-Making Capacity in Cognitively Impaired Older Adults

Paul Kirwin
Integrated Care: Lessons from the Veterans Administration PC-MHI Program
Next Steps: Job Search and Career Choices 101
Policy and Advocacy 101

Deborah Klaszky
Statewide Clinical Outreach Program for the Elderly: A System of Care for Managing Behavioral Disturbances in Dementia

Jessica Koenig M.D.
Early Investigator Posters

Janice Korenblatt
From Phone to Home: Utilizing Telephonic Case Management, Home Health Care and Psychiatric Integration to Identify and Treat Homebound Older Adults with Mental disorders

Jerome Korenblatt
From Phone to Home: Utilizing Telephonic Case Management, Home Health Care and Psychiatric Integration to Identify and Treat Homebound Older Adults with Mental disorders

Kimberly Kruse
Too Old for That? Diagnostic and Clinical Implications of ADHD in Older Adults.

Sanjeev Kumar MD
Early Investigator Posters

Rushiraj Laiwala MD
Early Investigator Posters
OVERAGE DRINKING: Alcohol Use Disorders in Older Adults and Role of SBIRT as Evidence-Based Approach to Diagnosis and Management

Krista Lanctot
Evaluating Medication Related Adverse Events Using Administrative Health Data: Research Methods and Clinical Implications for Geriatric Psychiatry.
Research Update: Advances in Therapeutics in Geriatric Psychiatry Sponsored by the AAGP Research Committee

Melinda Lantz
Clearing the Mind: Benzodiazepines and the Aging Brain

Maria Lapid
What’s Palliative Care Got To Do With It?

Helen Lavretsky
CAM for the Goose and the Gander: Demonstrations of Mind-Body Practices for Patients and Practitioners
Can We Change the Inevitable? Ameliorating Brain Aging and Cognitive Decline
Lifestyle Interventions in Late-Life Neuropsychiatric Disorders
New Research Poster Session
Research Update: Advances in Therapeutics in Geriatric Psychiatry Sponsored by the AAGP Research Committee
Senior investigator Workshop
Amanda Leggett PhD  
Early Investigator Posters

Susan Lehmann  
*Ageism in Medical Education: How Can We Create Enduring Attitudinal Change?*

Eric Lenze  
*Mindfulness Training and Exercise: Benefits For Brain, Mind, and Body*

Heather Leutwyler RN, PhD, FNP-BC  
*New Research Poster Session*

Luming Li MD  
Early Investigator Posters

Xiang Li Medical Student (Year 4)  
Early Investigator Posters

John Little  
*Geriatric Mental Health Services and Research in the Veterans Health Administration*

Matthew Lohman PhD  
Early Investigator Posters

*Case Presentation Session 1*

Constantine Lyketsos  
*Citalopram for Agitation in AD (CitAD): Pharmacokinetic Studies, Subgroup Analyses, and Effect on Other Neuropsychiatric Symptoms*  
*Taming the Elephant in the Room: Interventions for Improving Dementia Care Using Technology*

Jeffrey Lyness  
*Update on Geriatric Psychiatry Maintenance of Certification Program*

Joel Mack  
*Psychiatric Disturbances in Parkinson's Disease: What's New?*

Kristina Mani Candidate for BA  
Early Investigator Posters

Kevin Manning PhD  
Early Investigator Posters

Maria Marquine  
*Gay and Gray VI: "I Thought I Gay and Gray VI: "I thought I Would Never Get Old!" What Geriatric Mental Healthcare Providers Need to Know When Caring for Individuals Aging with HIV*
Laura Marsh  
_Psychiatric Disturbances in Parkinson’s Disease: What’s New?_  
_The Exam Starts in the Hallway: Movement Disorders in Geriatric Psychiatry_

Donovan Maust MD, MS  
_New Research Poster Session_

William McDonald  
_Clinical Advances in ECT Focused on Elderly Patients_  
_Research Update: Advances in Therapeutics in Geriatric Psychiatry Sponsored by the AAGP Research Committee_  
_The Exam Starts in the Hallway: Movement Disorders in Geriatric Psychiatry_

Nikolaus McFarland  
_The Exam Starts in the Hallway: Movement Disorders in Geriatric Psychiatry_

Marsden McGuire  
_Geriatric Mental Health Services and Research in the Veterans Health Administration_

Stephen Mernoff  
_From TBI to CTE: a Review and Update on Diagnosis, Management and Pathophysiology of Mild TBI and Chronic Traumatic Encephalopathy_

Wendy Miller  
_Sky Above Clouds: The Ongoing Creative Age of Gene Cohen. Featuring Wendy Miller in the 2nd Annual Gene Cohen Lecture_

Colleen Millikin PhD  
_New Research Poster Session_  
_Psychosis and dementia: when two worlds collide_

Raeanne Moore  

Rosalyn Moran  
_Assessing Frontal Lobe-Medial Temporal Lobe Connectivity in Alzheimer’s Disease and Related Dementias_

Stefana Morgan MD  
_Early Investigator Posters_  
_Paying it Forward II: An Interactive Workshop on Mentorship_

Ghizlane Moussaoui BSc Candidate  
_Early Investigator Posters_

David Munoz  
_Psychosis and dementia: when two worlds collide_

Cynthia Munro PhD  
_New Research Poster Session_
Peter Na MD  
*Early Investigator Posters*

Anusuiya Nagar MD  
*Early Investigator Posters*

Paul Newhouse  
*CAM for the Goose and the Gander: Demonstrations of Mind-Body Practices for Patients and Practitioners*  
*New Research Poster Session*  
*Vive la Différence: Sex Differences in Cognitive and Emotional Aging*

Sarah Nguyen MD  
*Early Investigator Posters*

Pei Huey Nie  
*Current and Prospective Programs in Geriatric Telepsychiatry*

George Niederehe  
*Senior Investigator Workshop*

Toshinari Odawara Professor, Director  
*New Research Poster Session*

Prasad Padala MD  
*New Research Poster Session*

Michelle Paggi PhD  
*Early Investigator Posters*

Amita Patel  
*Career Choices for IMG Geriatric Psychiatrists*

Rebecca Payne  
*OVERAGE DRINKING: Alcohol Use Disorders in Older Adults and Role of SBIRT as Evidence-Based Approach to Diagnosis and Management*

Renee Pepin PhD  
*Early Investigator Posters*

Georgios Petrides  
*Clinical Advances in ECT Focused on Elderly Patients*

Andrew Pierce MD  
*Early Investigator Posters*

Bruce Pollock  
*Citalopram for Agitation in AD (CitAD): Pharmacokinetic Studies, Subgroup Analyses, and Effect on Other Neuropsychiatric Symptoms*
Andrew Pomerantz  
Integrated Care: Lessons from the Veterans Administration PC-MHI Program

Gregory Pontone  
Psychiatric Disturbances in Parkinson's Disease: What's New?

Dennis Popeo  
Developing Your Clinician / Educator Career

Anton Porsteinsson  
Citalopram for Agitation in AD (CitAD): Pharmacokinetic Studies, Subgroup Analyses, and Effect on Other Neuropsychiatric Symptoms

Cyrus Raji  
Can We Change the Inevitable? Ameliorating Brain Aging and Cognitive Decline

Tarek Rajji  
Late Life Schizophrenia: Advances in Research

Mark Rapoport  
Evaluating Medication Related Adverse Events Using Administrative Health Data: Research Methods and Clinical Implications for Geriatric Psychiatry.  
King Lear and Geriatric Psychiatry: “Thou shouldst not have been old till thou hadst been wise”.  
New Research Poster Session

Badr Ratnakaran D.P.M  
New Research Poster Session

William Regenold MDCM  
New Research Poster Session

Barry Reisberg  
Is Aging a Disease? Subjective Cognitive Impairment and Physiologic Factors

Soham Rej  
CAM for the Goose and the Gander: Demonstrations of Mind-Body Practices for Patients and Practitioners  
Early Investigator Posters  
Lifestyle Interventions in Late-Life Neuropsychiatric Disorders

Meghan Riddle MD  
Early Investigator Posters

Juan Rodriguez-Guzman BS  
Early Investigator Posters

Steven Roose  
Slowing, Inflammation, and Depression: Implications for Assessment and Treatment of Older Depressed Individuals
Kasia Rothenberg MD, PhD  
*Early Investigator Posters*  
*New Research Poster Session*

Teresa Rummans  
*What's Palliative Care Got To Do With It?*

Bret Rutherford  
*Slowing, Inflammation, and Depression: Implications for Assessment and Treatment of Older Depressed Individuals*

Robert Rymowicz BSc  
*Early Investigator Posters*

Martha Sajatovic  
*Lifestyle Interventions in Late-Life Neuropsychiatric Disorders*  
*Research Update: Advances in Therapeutics in Geriatric Psychiatry Sponsored by the AAGP Research Committee*

Quincy Samus  
*Taming the Elephant in the Room: Interventions for Improving Dementia Care Using Technology*

Elizabeth Santos  
*Developing Your Clinician / Educator Career*  
*Transforming the Geriatric Workforce: Today and Tomorrow*

Parnika Saxena MD  
*Early Investigator Posters*

Alessandra Scalmati  
*Developing Your Clinician / Educator Career*

Susan Scanland  
*Managing Dementia Residents in Long-term Care Using Telehealth*

Jason Schillerstrom  
*Elder Neglect and Exploitation: Global Challenges and Local Solutions*

Lon Schneider  
*Citalopram for Agitation in AD (CitAD): Pharmacokinetic Studies, Subgroup Analyses, and Effect on Other Neuropsychiatric Symptoms*

John Seibyl  
*Amyloid Imaging: Using a New Biomarker to Improve Diagnosis*

Dallas Seitz  
*Evaluating Medication Related Adverse Events Using Administrative Health Data: Research Methods and Clinical Implications for Geriatric Psychiatry,*  
*New Research Poster Session*

Daniel Sewell  
*You Let My Mother Do What?! Sexual Intimacy and Decision-Making Capacity in Cognitively Impaired Older Adults*
Adonis Sfera Patton State Hospital  
*New Research Poster Session*

Dane Shiltz PharmD  
*New Research Poster Session*

Tatyana Shteinlukht  
*Dealing with the Unseen: Assessing and Addressing Implicit Attitudes to Enhance Professional Success in Geriatric Mental Healthcare* 
*Diversity in Action: Assessing and Addressing Biases in the Workplace and Patient Care.*

Adam Simning MD, PhD  
*Early Investigator Posters*

David Sinacore  
*Mindfulness Training and Exercise: Benefits For Brain, Mind, and Body*

Luisa Skoble  
*From TBI to CTE: a Review and Update on Diagnosis, Management and Pathophysiology of Mild TBI and Chronic Traumatic Encephalopathy* 
*Science or Snake Oil?: Review of Use of Testosterone and Vitamins/Nutrients in the Elderly.*

Stephen Smagula PhD  
*Early Investigator Posters*

Gary Small  
*Is Aging a Disease? Subjective Cognitive Impairment and Physiologic Factors*

Erica Smolcic MD  
*Early Investigator Posters*

Moria Smoski  
*CAM for the Goose and the Gander: Demonstrations of Mind-Body Practices for Patients and Practitioners*

Todd Solomon  
*From TBI to CTE: a Review and Update on Diagnosis, Management and Pathophysiology of Mild TBI and Chronic Traumatic Encephalopathy*

Anothai Soonsawat MD  
*Early Investigator Posters*

Shilpa Srinivasan  
*OVERAGE DRINKING: Alcohol Use Disorders in Older Adults and Role of SBIRT as Evidence-Based Approach to Diagnosis and Management* 
*Psychiatric Care from a Distance â€“ Current Challenges and Future Implications* 
*Too Old for That? Diagnostic and Clinical Implications of ADHD in Older Adults.*

David Steffens MD, MHS  
*New Research Poster Session*
Katia Stoletniy MD  
*New Research Poster Session*

Joel Streim  
*Transforming the Geriatric Workforce: Today and Tomorrow*

David Sultzer MD  
*New Research Poster Session*

Sandra Swantek  
*Transforming the Geriatric Workforce: Today and Tomorrow*

Robert Sweet  
*Psychosis and Dementia: When Two Worlds Collide*

Hala Tamim PhD  
*New Research Poster Session*

Rajesh Tampi  
*Career Choices for IMG Geriatric Psychiatrists*  
*Early Investigator Posters*

Warren Taylor  
*Can We Change the Inevitable? Ameliorating Brain Aging and Cognitive Decline*

Sivakumar Thangaraju MD  
*New Research Poster Session*

Alex Threlfall  
*Current and Prospective Programs in Geriatric Telepsychiatry*  
*Policy and Advocacy 101*

John Torous  
*Sensors, Smartphones and Geriatric Psychiatry*

Christopher Tsoutsoulas BSc (Hons)  
*Early Investigator Posters*

Christine Ulbricht PhD, MPH  
*Early Investigator Posters*

Ipsit Vahia  
*Career Choices for IMG Geriatric Psychiatrists*  
*Next Steps: Job Search and Career Choices 101*  
*Psychiatric Care from a Distance—Current Challenges and Future Implications*  
*Sensors, Smartphones and Geriatric Psychiatry*

Kimberly Van Orden PhD  
*New Research Poster Session*
Smita Varshney MD
New Research Poster Session

Taya Varteresian
Current and Prospective Programs in Geriatric Telepsychiatry

Lihong Wang
Can We Change the Inevitable? Ameliorating Brain Aging and Cognitive Decline

Sophia Wang
Delirium and Post-Operative Cognitive Decline: Who is at Risk for the Long-term Neurocognitive and Neuropsychiatric Effects?
New Research Poster Session
Sensors, Smartphones and Geriatric Psychiatry

David Wasserman
Election 2016: The stakes for mental health and aging advocates

Robyn Waxman MD, FRCPC
New Research Poster Session

Julie Wetherell
Lifestyle Interventions in Late-Life Neuropsychiatric Disorders
Mindfulness Training and Exercise: Benefits For Brain, Mind, and Body
Recent Research in Geriatric Anxiety Disorders

Hilary Whitlatch
Science or Snake Oil?: Review of Use of Testosterone and Vitamins/Nutrients in the Elderly.

Ilse Wiechers
Election 2016: The Stakes for Mental Health and Aging Advocates
Integrated Care: Lessons from the Veterans Administration PC-MHI Program
New Research Poster Session
Policy and Advocacy 101

Pui Wong
Clearing the Mind: Benzodiazepines and the Aging Brain

Matthew Woodward MSc, MS-3
Early Investigator Posters

Audra Yadack MD
Early Investigator Posters

Stephanie Yarnell MD, PhD
Early Investigator Posters

Brandon Yarns
Gay and Gray VI: “I Thought I Gay and Gray VI: “I thought I Would Never Get Old!” What Geriatric Mental Healthcare Providers Need to Know When Caring for Individuals Aging with HIV
Elmira Yessengaliyeva MD

Early Investigator Posters

Ching Yu

Psychiatric Care from a Distance - Current Challenges and Future Implications
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<th>Final ID</th>
<th>Presenting Author</th>
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Racial Differences in Older Homeless Adults: Findings in a Homeless Sample From Little Rock

Lakshminarayana Chekuri, MD, MPH, PhD(ABD)1; Carolyn L. Turturro, PhD2; Madhuri Nekkalapudi, BS3; Dinesh Mittal, MD1

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Introduction: Aging of the ‘baby boomer’ generation is significantly altering the demographic make up of several communities around the country. Minorities particularly African Americans are disproportionately affected by these changing demographics. In this article we describe racial disparities among older adults who are homeless.

Methods: Objectives: 1. Describe socio-demographic characteristics and prevalence of individual level risk factors in a sample of older homeless adults living in the Little Rock metropolitan area between 2007 and 2015. 2. Explore the racial disparities in prevalence of individual level risk factors in the older adult homeless sample. Study Population The study population included individuals residing in emergency and transitional homeless shelters, and visitors of soup kitchens located in the Little Rock metropolitan area during the years 2007 through 2015. Data was gathered biannually during point in time homeless counts (last week of January in 2007, 2009, 2011, 2013 and 2015). A convenience sample of 1500 homeless individuals were approached to participate in a survey using a structured instrument. Trained graduate and undergraduate social work and gerontology students helped participants complete the interview. Out of the 1500 contacts 151 (10.1%) individuals did not give their consent for the interview and were excluded from the study. Finally 1349 homeless individuals completed the survey, of which 545 (40.4%) individuals met criteria as older homeless adults (age ≥ 50 years). Out of these a small percentage of participants reported themselves to be American-Indian (2.6%), Asian (0.7%), Other (4.6%), or did not report their race (1.1%) and were excluded from this analysis. Of the remaining 496 older adults, 335 (67.5%) reported themselves to be Black/African American and 161 (32.5%) reported themselves as White/Caucasian and are included in the analysis. The study was approved by the institutional review board at University of Arkansas in Little Rock. Methodology Race is the outcome variable in this study. Gender, chronicity of homelessness, single/family, employment and military veteran status, history of mental and physical health problems, history of developmental disability, domestic violence, alcohol and illicit drug use comprised the predictor variables. Bivariate analysis of racial differences in socio-demographic and individual level risk factors for homelessness among older adults was carried out using the Chi-square statistic. In addition, logistic regression analysis was performed to assess the odds of risk factor prevalence among older adults who were Black compared with older adults who were White.

Results: Table 1 summarizes the bivariate analyses of socio-demographic and individual level risk factors. Chi-square analysis revealed significant differences between the racial groups. Older homeless adults who were Black were more often male in comparison to White older adults. White older adults were more likely to report history of mental illness, physical health problems, and domestic violence in comparison to Black older adults. Chronicity of homelessness, family status, employment and veteran status, reported history of developmental disability, alcohol and illicit drug use did not differ significantly between the two study groups. A multivariate analysis using direct logistic regression to compare older homeless adults by race revealed that in comparison to White older adults, Black older adults were significantly more likely to report history of mental illness (OR = 1.673, CI = 1.025–2.730) and less likely to report history of mental illness (OR = .582, 95% CI = .360–.941), history of health problems (OR = .651, 95% CI = .426–.994), and history of domestic violence (OR = .406, 95% CI = .209–.789). There were no significant differences found between the two groups in the multivariate analysis in regard to gender, chronicity of homelessness, family status, employment or veteran status, developmental disability or alcohol use.

Conclusions: Findings from this study suggest that Black/African American older adults are disproportionately vulnerable to homelessness compared with White/Caucasians. High prevalence of individual risk factors such as mental and physical health problems and domestic violence might be considered as perpetuating factors for homelessness among White older adults. Homelessness among older Black adults could be attributed largely to structural factors such as inadequate and unaffordable...
housing resources. Findings from this study add support for a targeted service delivery approach to vulnerable subgroups within the homeless cohort. For instance, older White homeless adults may particularly benefit from interventions such as mental health and physical health care delivery, and older black homeless adults might be in a greater need for affordable housing opportunities.

Poster Number: EI 2

Course of Suicidal Ideation among Home Health Patients in the CAREPATH Depression Care Management Trial
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Introduction: Suicidal ideation (SI) is a key risk factor for suicide and represents a clinically relevant, non-normative sign of distress in older adults. In home health populations, more than 10% of patients report experiencing either active or passive SI within the first month of care; however there are few evidence-based approaches to reducing SI among home health care patients. This study evaluated the course of SI among home health patients within a depression care management effectiveness trial.

Table 1. Socio-demographic characteristics and individual level risk factors

<table>
<thead>
<tr>
<th></th>
<th>Black N = 335</th>
<th>White N = 161</th>
<th>Chi Square Statistic</th>
<th>Probability level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>295 (88.1%)</td>
<td>127 (78.9%)</td>
<td>7.22</td>
<td>.007</td>
</tr>
<tr>
<td>Single</td>
<td>275 (82.6%)</td>
<td>134 (83.2%)</td>
<td>.032</td>
<td>NS</td>
</tr>
<tr>
<td>Unemployed</td>
<td>273 (82.2%)</td>
<td>131 (81.4%)</td>
<td>.055</td>
<td>NS</td>
</tr>
<tr>
<td>Veteran</td>
<td>80 (24.0%)</td>
<td>44 (27.3%)</td>
<td>.660</td>
<td>NS</td>
</tr>
<tr>
<td>Chronic Homeless</td>
<td>199 (60.1%)</td>
<td>90 (56.3%)</td>
<td>.667</td>
<td>NS</td>
</tr>
<tr>
<td>Domestic violence</td>
<td>25 (7.5%)</td>
<td>30 (18.6%)</td>
<td>13.67</td>
<td>.001</td>
</tr>
<tr>
<td>Developmental Disability</td>
<td>27 (8.1%)</td>
<td>6 (3.7%)</td>
<td>3.31</td>
<td>NS</td>
</tr>
<tr>
<td>Mental illness</td>
<td>69 (20.7%)</td>
<td>57 (35.4%)</td>
<td>12.45</td>
<td>.001</td>
</tr>
<tr>
<td>Physical Health Problems</td>
<td>98 (29.3%)</td>
<td>65 (40.4%)</td>
<td>5.99</td>
<td>.01</td>
</tr>
<tr>
<td>Alcohol use</td>
<td>98 (29.3%)</td>
<td>60 (37.3%)</td>
<td>3.14</td>
<td>NS</td>
</tr>
<tr>
<td>Illicit Drug use</td>
<td>108 (32.3%)</td>
<td>43 (26.7%)</td>
<td>1.62</td>
<td>NS</td>
</tr>
</tbody>
</table>

NS = Not significant.
Methods: Intervention: Data come from the Depression Care for Patients at Home (Depression CAREPATH) cluster-randomized effectiveness trial. The CAREPATH intervention integrates depression care management into the routine nursing visits of Medicare home health patients screening positive for depression. The CAREPATH intervention requires nurses to monitor and manage depression during home visits for patients who screen positive for depression on the two-item Patient Health Questionnaire (PHQ2) depression screen. Existing nursing teams were randomized to training in CAREPATH or enhanced usual depression care protocols. Sample: Participant eligibility criteria included absence of dementia, life expectancy greater than 6 months, no current suicide plan, English or Spanish speaking, and absence of significant hearing or speech impairment. Eligible Medicare home health patients were interviewed at baseline, 3, 6, and 12 months follow-up. Analysis: SI was measured using the Hamilton Rating Scale for Depression (HAM-D). We compared likelihood of SI between intervention and enhanced usual care patients using longitudinal logistic mixed-effects models, controlling for age, race, baseline major depression, medical comorbidity, perceived burdensomeness, and number of IADL limitations. Secondary analyses identified patient characteristics related to greater likelihood of suicidal ideation at baseline interview. Results: Of 306 eligible patients enrolled in the trial, 70 (22.9%) reported suicidal ideation at baseline (35 CAREPATH patients; 35 enhanced usual care patients). Among patients with suicidal ideation, patients treated by nurses randomized to CAREPATH were less likely to report SI over the study period (OR = 0.51, 95% CI; 0.24–1.07). At 12-month follow-up, 63.6% of usual care versus 31.3% of CAREPATH participants continued to report suicidal ideation. Baseline major depression, greater perceived burdensomeness, and greater functional disability were associated with greater likelihood of SI at baseline but not with remission over time. Conclusions: Suicidal ideation is common among Medicare home health patients, yet there are few interventions to address suicidal ideation in home care settings. Patients treated by CAREPATH-trained nurses were less likely to report SI compared to patients receiving enhanced usual care at one year follow-up. Long-term reduction in SI among high-risk patients, combined with relatively low burden of intervention on nursing staff, suggests the importance and feasibility of wider implementation of depression care management in home health nursing practices.

Poster Number: EI 3

The Efficacy of Unilateral and Bilateral Repetitive Transcranial Magnetic Stimulation for Treatment-Resistant Late-Life Depression

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²Department of Psychiatry, University of Toronto, Toronto, ON, Canada
³Temiety Centre for Therapeutic Brain Intervention, Centre for Addiction and Mental Health, Toronto, ON, Canada
Introduction: Treatment resistance presents a serious burden to older adults suffering from major depression. Repetitive transcranial magnetic stimulation (rTMS) targeting the dorsolateral prefrontal cortex (DLPFC) is a novel treatment modality for this patient population. High-frequency left-sided (HFL), low-frequency right-sided (LFR), and sequential bilateral (LFR then HFL) are different rTMS parameters with demonstrated efficacy in treatment-resistant depression (TRD) in younger adults. In a previous study, we identified superior efficacy for bilateral rTMS treatment compared to unilateral HFL or sham stimulation. In general, few studies examining the efficacy of rTMS in depression have included older adults and those that have included older adults have not provided sub-analyses. Thus, we undertook a sub-analysis of older adults in two randomized controlled trials that compared the efficacy of bilateral, unilateral HFL, and sham rTMS in TRD.

Methods: Subjects were recruited at a tertiary mental health centre in an urban centre (Centre for Addiction and Mental Health, Toronto, ON, Canada). Subjects included in the present analysis had a major depressive episode diagnosed by SCID-IV-TR, did not respond to two separate antidepressant trials, and were between the ages of 60–85. The data are drawn from two RCT’s (Clinical Trials.gov ID’s NCT00305045 and NCT01515215). Individuals were randomized to one of three treatment groups in both studies (bilateral, HFL, or sham). The stimulation parameters are outlined in Table 1. Localizing the DLPFC was determined either at 5 cm anterior to the site of maximal stimulation of the abductor pollicis brevis (NCT00305045) or through MRI-guided neuronavigation (NCT 01515215). The rates of remission (defined by a score $\leq 10$ on the 17-item Hamilton Depression Rating Scale; HDRS) were assessed and compared between the three groups. Further, response rates to treatment and change in HDRS score were examined.

Results: A total of 43 subjects were included in an intention-to-treat analysis. Demographic and baseline clinical variables are outlined in Table 2. By 6 weeks, 39 subjects (90.7%) completed treatment. Subjects lost to follow-up did not significantly differ from those who completed treatment regarding any baseline characteristics. Remission rates differed significantly between groups: bilateral (8/20, 40%), unilateral (0/11, 0%), and sham (0/12, 0%), $\chi^2(2) = 11.30, p = .004$. Remission for bilateral rTMS was significantly greater compared to unilateral (Fisher’s exact $p = .028$) and sham (Fisher’s exact $p = .014$); with no difference between the unilateral and sham groups (Fisher’s exact $p = 1$). The response rate to treatment differed between groups: bilateral (9/20, 45%), unilateral (0/11, 0%), and sham (2/12, 16.7%), $\chi^2(2) = 8.24, p = .016$. Response rates to bilateral rTMS were greater compared to unilateral (Fisher’s exact $p = .012$), but not sham (Fisher’s exact $p = .139$); with no difference between unilateral and sham (Fisher’s exact $p = .478$). The baseline HDRS scores were not significantly different between groups, F(2, 40) = 1.06, $p = .356$. However, the changes in scores from baseline to endpoint were significantly different, F(2, 40) = 3.44, $p = .042$. The mean (SD) change in the bilateral group, 10.5 (8.08), was significantly greater than the change in the unilateral, 4.5 (2.81), Tukey post-hoc; $p = .043$; but not the sham group, 6.7 (5.14), $p = .235$. The unilateral and sham groups were not significantly different, Tukey post-hoc; $p = .705$.

Conclusions: The present study compared the efficacy of bilateral, unilateral, and sham rTMS for older adults with TRD. Remission rates for the bilateral group were greater than the unilateral and sham groups. Furthermore, the rates of response and change in HDRS scores were significant across treatment conditions. Individuals receiving bilateral rTMS experienced a greater

### Table 1. Treatment Parameters

<table>
<thead>
<tr>
<th></th>
<th>Unilateral</th>
<th>Bilateral</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>NCT00305045</strong></td>
<td>Frequency: 10 Hz</td>
<td>Frequency: 1 Hz</td>
</tr>
<tr>
<td>120% RMT</td>
<td>Pulses Per Train: 30</td>
<td>Pulses Per Train: 100</td>
</tr>
<tr>
<td></td>
<td>Trains: 48 + 1 (10 pulses)</td>
<td>Trains: 4 + 1 (65 pulses)</td>
</tr>
<tr>
<td></td>
<td>Total Pulses: 1450</td>
<td>Total Pulses: 465 then</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Frequency: 10 Hz</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pulses Per Train: 30</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Trains: 25</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total Pulses: 750</td>
</tr>
<tr>
<td><strong>NCT 01515215</strong></td>
<td>Frequency: 10 Hz</td>
<td>Frequency: 1 Hz</td>
</tr>
<tr>
<td>120% AdjRMT</td>
<td>Pulses per train: 30</td>
<td>Pulses per train: 100</td>
</tr>
<tr>
<td></td>
<td>Trains: 70</td>
<td>Trains: 6</td>
</tr>
<tr>
<td></td>
<td>Total pulses: 2100</td>
<td>Total pulses: 600 then</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Frequency: 10 Hz</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pulses Per Train: 30</td>
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<tr>
<td></td>
<td></td>
<td>Trains: 50</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total Pulses: 1500</td>
</tr>
</tbody>
</table>

AdjRMT: RMT adjusted for coil-cortex distance.
response rate and HDRS change compared to those receiving unilateral or sham rTMS. Unilateral rTMS did not differ significantly from sham stimulation for any of the three outcome measures. The limitations of the study include the unbalanced groups and small sample sizes, which may have biased in favour of the bilateral group and may have contributed to the limited differences between bilateral and sham groups. Taken together, these findings support the efficacy for bilateral rTMS in older adults with TRD. The lack of efficacy findings in the unilateral group may be in keeping with past HFL studies, in which advanced age portends a weaker response to rTMS. Perhaps bilateral stimulation may overcome the effects of advanced age in managing treatment-resistant depression with rTMS. The remission rate of 40% in the bilateral group in this sample of older adults who have more than 2 adequate trials is clinically meaningful. The findings warrant further comparative effectiveness research involving bilateral rTMS in treatment-resistant late-life depression.

This research was funded by: Canadian Institutes of Health Research (CIHR) Ontario Mental Health Foundation.

Poster Number: EI 4

The Association of Socioeconomic and Health Factors with Technology Use among Older Adults in the United States
Renee Pepin, PhD; Amanda Leggett, PhD; Stephen J. Bartels, MD, MS

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**Introduction:** Background: Despite the high rates of chronic illness among older adults and numerous ways to use information and computer technology (ICT) to support health, older adults tend to underuse this resource. While older adults' ICT use is increasing, their use remains lower than other age groups. Furthermore, older adults with physical challenges report less technology use compared to older adults without physical challenges. Individuals who have chronic conditions, thus who may have more to gain from the personalized health supports available through ICT, have been shown to be less likely to access it. We must consider how older adults are using technology as well as barriers and facilitators to technology use to effectively support their engagement with such technology. Objective: To describe technology use as well as barriers and facilitators to technology use among older adults, using a nationally representative sample.

**Methods:** Methods: We used the Health and Retirement Study (HRS), a longitudinal survey of a nationally representative sample of the U.S. population over the age of 50. In 2012, the HRS included a module on “Technology Use: Barriers and Benefits” that was administered to a random subset of HRS 2012 core participants. We conducted descriptive, group comparison, and logistic and linear regression analyses to examine demographic, socioeconomic, health and technology specific predictors of technology use. Outcomes—Technology Use. To examine technology use, we used 14 items. These items referred to different ICT devices (e.g., ereader or tablet) and various tasks accomplished with technology (e.g., emailing, online banking, and use of an online wellness program). Outcomes were coded as yes or no. We combined these to create an overall, dichotomous “technology use” variable and a continuous summed number of technologies used variable. Predictors—Personal Characteristics. To examine demographic characteristics we used age, gender, race, education, income, verbal memory, depression, Activities of Daily Living (ADLS), and chronic conditions. Facilitators. To examine facilitators to technology use we used four items: technology saves time, provides flexibility in communication, is easy to use, and is easily available.

**Results:** Results: The Technology Use: Barriers and Benefits module was completed by a sample of 1,680. 75.74% (n = 1135) of participants used some type of ICT: 63.35% (n = 906) used email, 25% (n = 349) used a smartphone, and 22% (n = 300) used an ereader or tablet. In a logistic regression, technology use was associated with younger age, having more education, and endorsing more facilitators to technology. In linear regression, more technology use was associated with younger age, being white, having more education, fewer ADL limitations, and endorsing more facilitators to technology.

**Conclusions:** Consistent with prior reports, we found that younger age, being white, and having more education were associated with information and computer technology use. Although having fewer ADL limitations was associated with more technology use, chronic health conditions were not. Therefore, our results do not suggest that health status as measured by chronic conditions is a predictor of ICT use. Not surprisingly, those who reported more facilitators to technology were more likely to use technology. A potential strategy for to improve technology use with older adults would be to bolster their familiarity with the benefits and availability of technology.

This research was funded by: Drs. Pepin and Leggett were partially supported by T32 073553.

**Behavioral and Psychiatric Manifestations of Delirium Caused by Cerebral Hypo-Perfusion From Overaggressive Anti-Hypertensive Therapy and Carotid Stenosis in a Geriatric Patient with Mild Neurocognitive Disorder**

Xiang Li, Medical Student (Year 4)¹; Daniel Kim, MD²

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**Introduction:** The treatment of hypertension in the geriatric population is often a double-edged sword especially in those with neuro-cognitive deficits. On one hand, chronic untreated hypertension that begins in midlife could cause irreversible brain damage resulting in dysregulation and cognitive impairment that ultimately results in major neurocognitive disorder. Therefore, what is considered a normal or low blood pressure in individuals with cognitive impairment may not necessarily mean a well-controlled blood pressure. Instead, it may hinder sufficient perfusion of a damaged brain. The medical community has also been reluctant to use strict blood pressure control especially for patients with major neurocognitive disorder because these patients have low cerebral blood flow at baseline. In addition, the cerebral dys-regulation of perfusion can result in cerebral blood flow insufficiency and its accompanying consequences such as aggression, depression and cognitive impairment, depending on the location of the perfusion mismatch. Moreover, it has been shown that aggressive antihypertensive therapy in patients with minor or major neurocognitive disorders may negatively affect cognition and cause delirium from eliciting hypo-perfusion (watershed) strokes.

**Methods:** (N/A. Case report).
**Results:** An 82 year-old Caucasian female with a history of depression, hypertension, and hyperlipidemia was referred to our outpatient gero-psychiatry program four months prior to her hospitalization, for troubles with her IADLs. On testing, she had no focal neurological issues, but a MOCA of 19/30 indicated minor neurocognitive disorder. Neuroimaging revealed multiple chronic, lacunar infarcts. Four months later, she was referred to our voluntary inpatient facility when staff at her independent living facility reported erratic mood, irritability, agitation, along with poor medication compliance. During the first few days of her inpatient hospitalization, she demonstrated phases of irritability, confusion, and even combative behavior with staff. Her new MOCA of 12/30 also revealed a drastic decline from her baseline MOCA of 19/30 four months prior. On day four, an MRI was also ordered, which showed acute and sub-acute right hemisphere infarct in watershed distribution within both the parietal lobe PCA/MCA watershed territory and along the ACA/MCA watershed territory. At this time, we also discontinued both of the anti-hypertensives that had been recently started by her PCP. Furthermore, an accompanying carotid duplex showed significant right internal carotid artery occlusion of >90% and moderate left internal carotid artery occlusion of <70%. Following a successful, endovascular stent placement in the right carotid, the patient returned to our unit with improved mood and decreased irritability and agitation during the final course of her stay. Her neuropsychology testing prior to discharge showed that the patient had regained her baseline cognitive function of 18/30. However, patient was discovered to have new onset hemi-sided neglect.

**Conclusions:** While the patient has had a history of depression and was recently diagnosed with mild neurocognitive disorder, her current symptoms could not be explained by her past history. Her bouts of drastic cognitive decline, agitation, confusion, and labile behavior most resemble delirium. It is likely that the overly-aggressive blood pressure treatment and possibly her severe carotid stenosis caused the multiple, acute hypo perfusion ischemia. Studies examining the relationship between antihypertensive drugs and neurocognitive disorders have yielded conflicting results. Recent reports showed a decreased incidence of cognitive decline in treated hypertensive patients, while other studies failed to evidence an association. Nevertheless, it is very possible that the excessive antihypertensive therapy with two medications led to insufficient cerebral perfusion in light of her severely occluded carotids, created acute lesions in the watershed area and caused the behavioral disturbances. This hypothesis is also consistent with the patient’s neuropsychology testing after the carotid stenting, which revealed no additional cognitive decline. Thus, using over-aggressive blood pressure control in patients with minor and major neurocognitive disorders and especially with vascular risk factors may increase the possibility of delirium.

**Poster Number: E1 6**

**Metabolism, Mitochondrial Stress, and Aging: How Neuroendocrine Signaling Coordinates Metabolic State in Aging and Neurodegenerative Disease Models**

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2UC Berkeley, Berkeley, CA

**Introduction:** Metabolic and mitochondrial dysfunction have long been implicated in the pathogenesis and sequelae of numerous neurodegenerative diseases of aging. Diseases such as Alzheimer’s, Parkinson’s, and Huntington’s carry with them not only the accumulation of toxic, aggregated proteins but the subsequent effects on cellular metabolism and mitochondrial function. What is now evident is that the impact of these diseases is not limited to the nervous system, but extends to effects on peripheral metabolism at both the cellular and tissue levels. Among the many deleterious consequences of Huntington’s disease (HD), for example, the severe changes that occur in metabolic function across non-neuronal tissues remain among the most puzzling. In HD patients, the risk of developing diabetes is nearly seven times greater than in non-HD patients. Insulin secretion becomes impaired, basal resting energy expenditure increases, and glucose metabolism is reduced. It is likely that these metabolic changes are both caused by and capable of exacerbating disease states, and the metabolic dysfunction observed in HD patients is far from unique. Deleterious changes in metabolism have been reported in a range of neurodegenerative diseases, including Alzheimer’s, Parkinson’s, and amyotrophic lateral sclerosis. However, the mechanism by which stress in the central nervous system is communicated to other tissues is unknown. Invertebrate models, such as C. elegans and Drosophila melanogaster have been particularly valuable in elucidating the genetic and cellular pathways that fundamentally regulate organismal aging. We have used invertebrate models as well as human cell lines to study the metabolic effects of these diseases.

**Methods:** C. elegans, an invertebrate nematode, models as well as human cell culture models in which varying lengths of the polyglutamine portion of the Huntington’s disease related protein were neuronally expressed were examined for markers of mitochondrial stress. Analyses of lifespan as well as organismal metabolism by monitoring oxygen consumption were also conducted. We further used genetic techniques to isolate and identify neuroendocrine pathways that were required for communication of metabolic and mitochondrial stress to non-neuronal tissues.
**Results:** In our analyses, we found that expression of a polyglutamine (PolyQ) tract of a specific length expressed in neurons is sufficient to elicit a mitochondrial stress response in distal tissues. Association of the PolyQ protein with mitochondria correlates with the distal upregulation of mitochondrial stress chaperones and metabolic decline of the entire animal. Upregulation of the mitochondrial stress pathway in peripheral tissues requires the function of mitochondrial chaperones and transcription factors as well as dense core vesicle secretion from affected neurons. The application of exogenous serotonin is sufficient to rescue the defect in neuronal secretion and restore mitochondrial function. Importantly, a loss in serotonin synthesis is sufficient to block mitochondrial stress signaling to distal tissues, an effect rescued by the application of exogenous serotonin.

**Conclusions:** Together, these findings provide evidence that in neurodegenerative disease states, neurons use serotoninergic signaling to impact metabolic stress, altering mitochondrial function and metabolism throughout the organism. These findings suggest a mechanistic link between mitochondrial stress, endocrine signaling, and the peripheral metabolic decline found in neurodegenerative disease. Our findings also suggest a role for serotonin modulators in understanding and potentially treating the more widespread metabolic and psychiatric sequelae of neurodegenerative diseases. This work further sheds light on the mechanisms of stress response integration across an organism and throughout the lifespan.

Poster Number: EI 7

**Cognitive Impairment Predicts Subsequent Development of Major Depressive Disorder in the Elderly: An 8-Year Prospective Study in Chile**

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2Universidad de Concepcion, Concepcion, Chile

**Introduction:** Studies have shown that late-onset MDD can herald the emergence of a cognitive disorder. However, there is no longitudinal data available regarding baseline cognitive impairment as a possible predictor of later development of MDD.

**Methods:** 477 subjects aged 65 or older were recruited from 10 National Health Service primary care centers in two Chilean cities. At baseline, they were administered the Mini-Mental State Exam (MMSE) to assess cognitive functioning and the Composite International Diagnostic Interview (CIDI) to determine lifetime and 12-month prevalence of MDD. The CIDI affective disorders section was repeated at 1 year and 8 years to assess for MDD onset, remission or continuation. Education was categorized as illiterate, primary school, high school or post-high school. Analysis was done using logistic regression.

**Results:** The average age of the sample at baseline was 73.3 ± 5.8 with an MMSE score of 23.5 ± 5.2. 252 subjects completed the 8-year follow-up. The average age of the sample at 8-year follow-up was 78.7 ± 4.3 with an MMSE score of 24.2 ± 4.7. No relationship between MDD and MMSE score was noted at baseline or 1-year follow-up. However, MMSE at baseline was found to be associated with MDD at 8-year follow-up (non-adjusted p < 0.081; adjusted for age and education p < 0.035). At 8-year follow-up MMSE was not associated with MDD remission or chronic MDD. MMSE was associated with new-onset MDD in those who did not have 12-month prevalent MDD at baseline (non-adjusted p < 0.059; adjusted for age and education p < 0.026). The findings were similar when the analysis was repeated for new-onset MDD for those who did not have lifetime prevalent MDD at baseline (non-adjusted p < 0.088, adjusted for age and education p < 0.020).

**Conclusions:** Subjects with lower MMSE scores at baseline were more likely to have a new diagnosis of MDD at 8-year follow-up after controlling for age and educational level. Individuals with known cognitive disorders should be monitored closely for the emergence of depression over time. The MMSE may be a useful office-screening tool to identify those at heightened risk for the later development of MDD.

Poster Number: EI 8

**Have We Addressed Sexuality in Older Patients Appropriately as Healthcare Providers? Understanding Changes in Later-Life Sexuality and Using Psychosexual Models to Assess Problems**

Anothai Soonsawat, MD, MD; Randall Espinoza, MD, MPH, MD, MPH

UCLA, Los Angeles, CA

**Introduction:** When used colloquially, the term “sex” refers mainly to the physical aspects of intimacy and often only to the act of sexual intercourse. However, “sexual health” can be defined in a much broader sense, encompassing not only physical but also mental and social well being in relation to sexuality, which is acknowledged as an important component of quality of life.
along with personal relationships and physical health. Being sexually active at older age can be perceived as inappropriate and is likely to meet with disapproval by younger generations. Despite this social expectation, more than enough evidence shows that older adults continue to have sexual interest across the lifespan. However, with aging, older adults are at higher risk of experiencing a reduction in sexual function. Many of these dysfunctions are treatable if assessed in an unbiased way and managed appropriately. Thus, it is important for providers to become aware of this sensitive yet common issue. This project aimed to review sexual health evaluation in older adults and to provide recommendations for psychosexual assessment and systematic interventions to improve quality of care.

**Methods:** The literature search for this project spanned several databases including PubMed, PsycInfo, and Scopus. Search terms included age, aging, sexuality, sexual health, sexual problems, attitudes, healthcare providers, and other related terms. Review of articles showed several themes and obstacles to assessment of sexual health in older adults. Healthcare providers may not perceive sexuality as a legitimate topic for discussion in their clinical practice. Important barriers are an assumption that certain patients would be less likely to want to talk about their personal sexuality and the lack of training in this specific group of population. Unexpectedly, in the field of oncology, multiple models for psychosexual assessment have been studied, including PLISSIT, BETTER, and ALARM. These models were shown to be effective in identifying problems and allowing providers to approach patients systematically. Each one has different strengths and limitations, for example, the PLISSIT model focuses on psychosexual intervention, and the ALARM model focuses more on comprehensive assessment. Although sexuality can mean different things to different people, an assumption that older adults should be “sexually retired” is inappropriate. It is vital for healthcare providers to appreciate this concept and provide care with respect. Given the time constraint of busy practices, every second is valuable and a sexual history is sometimes abandoned. The implementation of one of the psychosexual assessment models, especially in geriatric practice, may allow healthcare providers to be more comprehensive in their evaluation and may assist in addressing the sexual healthcare needs of older patients more effectively.

This research was funded by: The Muriel Harris Endowed Chair of Geriatric Psychiatry.

Poster Number: EI 9

**Association between Mismatch Negativity and Psychopathology, Cognitive Impairment, and Health Status in Patients with Schizophrenia and Comparable Healthy Subjects**

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Barton W. Palmer, PhD\(^1,2\); Dilip V. Jeste, MD\(^1,2\)

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**Introduction:** There is growing recognition that sensory processing abnormalities contribute to widespread deficits in cognitive and psychosocial functioning in schizophrenia (SZ) patients. Mismatch Negativity (MMN) is an event-related potential component that is passively evoked in response to unattended changes in background stimulation. Previous studies have demonstrated that SZ patients have robust reductions in MMN that are correlated with their global clinical, cognitive, and functional status. To our knowledge, no studies have assessed the relationship of MMN to measures of psychopathology, cognitive impairment, and health status, and if these relationships vary between schizophrenia patients and healthy comparison subjects (HCS). The purpose of this study was to determine the association between MMN with these domains of health, and to examine differences in these associations between SZ patients and HCS.

**Methods:** SZ patients (n = 23) and HCS (n = 34) underwent testing via their participation in a study on accelerated aging in schizophrenia. Participants also completed a number of assessments related to psychopathology (i.e., Scale for the Assessment of Positive Symptoms [SAPS], Scale for the Assessment of Negative Symptoms [SANS], and 10-Item Center for Epidemiological Studies Depression Scale [CES-D]), cognitive impairment (i.e., Modified Telephone Interview for Cognitive Status [TICS-M] and Executive Functioning Scale), and health status (i.e., Short Form (36) Health Survey [SF-36] Physical and Mental Composite Score).

**Results:** As in previous studies, SZ patients exhibited significant MMN deficits (p < 0.001). In the pooled sample, MMN was significantly associated with the psychopathology ratings (all p’s < 0.02), cognitive functioning (all p’s < 0.001), and the physical and mental composite scores of the SF-36 (all p’s < 0.04). In the SZ patients, MMN values were positively correlated with the negative symptom severity (p = 0.016) and executive functioning (p = 0.049). No significant correlations were observed in the HCS.

**Conclusions:** This study demonstrates that MMN deficits are robustly related to measures of clinical, cognitive, and health status. While SZ patients had smaller MMN values relative to HCS, the correlations between these values and most measures
Utilizing a Direct Assessment to Identify Functional Impairments in Homeless Adults

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\textsuperscript{1}Yale University, New Haven, CT
\textsuperscript{2}VA Connecticut, West Haven, CT
\textsuperscript{3}Quinnipiac University School of Medicine, Hamden, CT

Introduction: Traditionally, assessments of instrumental activities of daily living in the elderly have been based on self-reports, but concerns about underestimating impairment have led to studies of directly observed function (Diehl et al., 1995). The Health Care for Homeless Veterans (HCHV) program at the Connecticut VA aims to provide housing assistance to patients who are homeless or at risk of homelessness. Several studies have reported a high prevalence of both cognitive and functional impairment among homeless adults, even at as young as age 50 (Deppe et al., 2015). This population often lacks collateral sources of information to confirm functional status. Therefore, we aim to utilize a directly observed assessment of function in a geriatric syndrome screening clinic that was established in collaboration with the HCHV at VA Connecticut.

Methods: As part of a collaborative quality improvement project, patients presenting to the homeless clinic at VA Connecticut were seen in the Screening PRogram to Identify Needs due to Geriatric Syndromes (SPRING) clinic. Patients were 18 years old or older, eligible for VA benefits, and homeless or at risk for homelessness. Patients received either a full or a partial screening as part of this project. The full screening included a revised form of the Direct Assessment of Functional Status (DAFS-R; McDougall et al., 2010) to assess skills in the domains of communication, finance, shopping, and medication management. In addition, subjective measures of functional status [Modified Katz Activities of Daily Living Scale, Brief Instrumental Functional Scale (BIFS)], depression screening (Patient Health Questionnaire 9), and cognitive assessments [Montreal Cognitive Assessment (MoCA), Trail Making Test Part B (Trails B)] are performed. The DAFS-R contains 55 items that assess the skills required for communication (using a phone and mailing a letter), financial affairs (counting currency and balancing checkbooks), shopping (recalling a shopping list and choosing the shopping list items from a shelf), and medication management (identifying information on a prescription bottle, using a telephone for prescription refills, and managing medications in a pillbox). Partial screening includes the subjective measures of functional status, depression screening, and the cognitive assessments. After assessments, clinicians reviewed the results of the full screenings and engaged patients in a planning conversation regarding further evaluation and treatment. The ultimate goal of this project is to identify and address functional impairment as a means of improving housing and health outcomes. Here we report the results of directly observed functional testing, as well as the associations with subjective measures of function and cognitive screening.

Results: A total of 17 patients received a full assessment including directly observed assessment of function. Average age was 55.8 ± 10.2 years and 93.4% were male. Patients reported an average education level of 12.7 ± 1.3 years. Based on chart diagnoses, 50.0% had a mood disorder, 37.5% an anxiety disorder, 12.5% a psychotic disorder, 43.8% an alcohol use disorder, 6.3% an opioid use disorder, and 18.8% a stimulant use disorder. Four patients (25%) had a chart diagnosis of MCI or dementia. None of the patients had a diagnosis of traumatic brain injury or stroke recorded in the chart. One patient (6.3%) had a seizure disorder. On direct assessment of functional status (DAFS-R), the mean score was 45.6 ± 8.2 (max score possible of 57). DAFS-R score was significantly correlated with MoCA score ($r^2 = 0.2399$, $p < 0.05$, Spearman correlation, Figure 1), but not with Trails B alone. Patients that had cognitive impairment (MoCA < 26 represented by horizontal red dotted line in Figure 1, or Trails B < -1.5 standard deviations below age and education adjusted norms) scored significantly lower on the DAFS-R than those without cognitive impairment ($p < 0.05$, Wilcoxon rank sum test, Figure 2). Importantly, subjective assessments of function completed by asking a patient about their needs using the BIFS had no correlation with the DAFS-R, MoCA, or Trails B.

Conclusions: This study demonstrates the need for directly observed assessments of function in homeless patients. Impairments are both prevalent and under-recognized by assessments based only on subjective interview. Identification and support of functional impairment may be an important intervention for patients with unstable housing whose impairment may...
contribute to continued housing instability or homelessness. Future goals of our work are to explore the relationship between housing instability and functional impairment and evaluate the impact of the SPRING clinic intervention on housing outcomes.

This research was funded by: This work is supported by a John A. Hartford Foundation Change AGEnts Action Award and VISN1 VA Innovations Grant. APM is supported by NIMH 5R25MH071584-07.

Poster Number: EI 11
Screening PRogram to Identify Needs Due to Geriatric Syndromes (SPRING): A New Perspective on Healthcare for Homeless Adults
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1Yale University, Department of Psychiatry, New Haven, CT
2VA Connecticut Healthcare System, West Haven, CT
3Quinnipiac University, Hamden, CT
Introduction: Cognitive and functional impairment is common among homeless adults with recent studies showing that between 25% and 75% have measurable cognitive impairment (Deep et al. 2015, Stergiopoulos et al. 2015, Brown et al. 2013). In addition, Gabriélian et al. showed an association between impaired processing speed and difficulty becoming stably housed for homeless patients participating in a residential substance abuse rehabilitation program (2015). Brown et al. have provided evidence that the cognitive impairment in homeless adults over 50 is highly correlated with functional impairment and other geriatric syndromes (2013). Given the high prevalence of geriatric syndromes in homeless populations, our goal is to screen for and characterize cognitive impairment, functional impairment, and frailty among homeless patients presenting to the Homeless Clinic at the VA Connecticut Healthcare System and link them to appropriate care. By identifying geriatric syndromes and providing appropriate resources, we aim to improve both housing and health outcomes for this vulnerable population. In addition, we aim to investigate the associations between performance on cognitive and functional testing and housing outcomes. In this report we describe our geriatric syndrome screening clinic and summarize the cognitive testing and demographic data collected.

Methods: We analyzed data collected from a prospective cohort of patients evaluated in a collaborative quality improvement project called the Screening Program to Identify Needs due to Geriatric Syndromes (SPRING) Clinic. Patients seen at the Healthcare for Homeless Veterans Clinic at VA Connecticut were contacted via telephone to participate in the SPRING Clinic. All patients were 18 years old or older, eligible for VA benefits, and homeless or at risk for homelessness. Patients seen at SPRING Clinic complete several geriatric syndrome screenings including cognitive assessments [Montreal Cognitive Assessment (MoCA), Trail Making Test Part B (Trails B), Wide Range Achievement Test 3—reading subtest], depression screening (Patient Health Questionnaire 9), subjective and objective measures of functional status (Modified Katz Activities of Daily Living Scale, Brief Instrumental Functioning Scale, Revised Direct Assessment of Functional Status), and subjective and objective measures of physical frailty (Fried Frailty Index). SPRING clinicians reviewed the results of screenings and made recommendations for further evaluation (e.g., laboratories, imaging, neuropsychological testing) and referrals (e.g., home services, physical therapy, occupational therapy, subspecialty care).

Results: A total of 37 patients underwent screening evaluations. Average age was 54.2 ± 15.0 years and 90.9% (30) were male. Patients reported an average education level of 12.9 ± 1.4 years. Based on chart diagnoses, 57.6% (19) had a mood disorder, 45.5% (15) an anxiety disorder, 9.1% (3) a psychotic disorder, 39.4% (13) an alcohol use disorder, 9.1% (3) an opioid use disorder, and 21.2% (7) a stimulant use disorder. Only 4 patients (12.1%) had a chart diagnosis of any cognitive disorder. Traumatic brain injury, stroke, and seizure disorder were reported for one patient each (3%). All patients had accessed primary care services in the last year and 90.9% (30) had received mental health care in the last year. Five patients (15.2%) were seen by either geriatric medicine, geriatric psychiatry, or behavioral neurology in the last year. Their mean MoCA score (23.86 ± 3.62) indicated significant impairment (p < 0.005, Wilcoxon signed rank test) with 70.3% (26) falling below the normative cut-off of 26 (Nasreddine et al. 2005). Their mean Trails B Z-score (−1.54 ± 1.59, adjusted for age and education) showed significant impairment (p < 0.005, Wilcoxon signed rank test) with 32% (12) falling 1.5 standard deviations below normal. Horizontal red dotted lines (Figures 1 and 2) represent these cut-offs. While the MoCA

Figure 1. Association between Age and MoCA Score in Unstably Housed or Homeless Patients.
Figure 1. Association between age and Trail B score (r^2 = 0.17, p < 0.05). Figure 2. Association between age and Trails B in Unstably Housed or Homeless Patients.

Conclusions: Cognitive impairment is common among patients presenting to the homeless clinic for assistance. Impairment is more common with increasing age, but prevalent at much younger ages than typically expected. Screening for cognitive disorders and other geriatric syndromes will be of great importance to improve independent housing outcomes and health of those in need of housing assistance.

This research was funded by: This work is supported by a John A. Hartford Foundation Change AGEnts Action Award and VISN1 VA Innovations Grant. APM is supported by NIMH 5R25MH071584-07.

Introduction: The primary goal of this study was to determine the prevalence of patients screening positive for cognitive impairment in a low income, urban geriatric population. The second goal was to assess the prevalence of treatable mental health problems that could contribute to cognitive impairment.

Methods: Geriatric patients were recruited when they presented for scheduled medical care at an academic primary care clinic in a low-income neighborhood of Philadelphia, Pennsylvania. Participants answered questions regarding their demography, psychiatric history and symptoms, and substance use history. The General Practitioner Assessment of Cognition (GPCOG) was used as the screening instrument. The following standardized tools were also administered: Geriatric Depression Scale (GDS-5), Geriatric Anxiety Inventory (GAI-SF), and the Charlson Comorbidity Index. A urine specimen was tested for drugs.
Results: Based on the GPCOG screen, 78.5% of subjects screened positive for cognitive impairment. Those screening positive for severe cognitive impairment, consistent with a diagnosis of dementia, was observed in 19%. Depressive and anxiety symptoms were low. All subjects with positive urine drug screens were in the impaired group.

Conclusions: There is a high prevalence of elderly who screen positive for cognitive impairment in a low-income urban primary care clinic. Given the high prevalence, low-income older adults should be screened for cognitive impairment and then assessed. Medications, other drugs and systemic illness may be a reversible cause of cognitive impairment.

Demographic Information by Cognitive Impairment Status.

<table>
<thead>
<tr>
<th>CHARACTERISTIC VALUE</th>
<th>IMPAIRMENT (n = 62, 78.5%)</th>
<th>NO IMPAIRMENT (n = 17, 21.5%)</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>73.3(6.3), 62</td>
<td>72.1 (7.5), 17</td>
<td>0.52</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>20, 32.3%, 25.3%</td>
<td>6, 35.3%, 7.6%</td>
<td>1.00</td>
</tr>
<tr>
<td>Female</td>
<td>42, 67.7%, 53.2%</td>
<td>11, 64.7%, 13.9%</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>62</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>49, 80.3%, 62.8%</td>
<td>13, 76.5%, 16.7%</td>
<td>NS</td>
</tr>
<tr>
<td>White</td>
<td>4, 6.6%, 5.1%</td>
<td>3, 17.6%, 3.8%</td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td>5, 8.2%, 6.4%</td>
<td>0, 0.0%, 0.0%</td>
<td></td>
</tr>
<tr>
<td>Asian</td>
<td>2, 3.3%, 2.6%</td>
<td>0, 0.0%, 0.0%</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>1, 1.6%, 1.3%</td>
<td>1, 5.9%, 1.3%</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>61</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td>Marital Status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>10, 16.1%, 12.7%</td>
<td>5, 29.4%, 12.7%</td>
<td>NS</td>
</tr>
<tr>
<td>Married</td>
<td>13, 21.0%, 16.5%</td>
<td>3, 17.6%, 16.5%</td>
<td></td>
</tr>
<tr>
<td>Divorced</td>
<td>13, 21.0%, 16.5%</td>
<td>4, 23.5%, 16.5%</td>
<td></td>
</tr>
<tr>
<td>Separated</td>
<td>3, 4.8%, 3.8%</td>
<td>1, 5.9%, 3.8%</td>
<td></td>
</tr>
<tr>
<td>Widowed</td>
<td>23, 37.1%, 29.1%</td>
<td>4, 23.5%, 29.1%</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>62</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td>Education Level²</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>[mean(SD), n]</td>
<td>11.7(3.1), 62</td>
<td>15.1(3.1),17</td>
<td>0.00</td>
</tr>
<tr>
<td>Total GDS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>[mean(SD), n]</td>
<td>1.0(1.1), 62</td>
<td>0.8(1.3),17</td>
<td>0.40</td>
</tr>
<tr>
<td>Total GA1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>[mean(SD), n]</td>
<td>1.1(1.7), 62</td>
<td>0.9(1.4),17</td>
<td>0.59</td>
</tr>
<tr>
<td>Total Charlson³</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>[mean(SD), n]</td>
<td>2.0(2.0), 61</td>
<td>1.94(2.3), 16</td>
<td>0.87</td>
</tr>
</tbody>
</table>

Impairment, defined as a positive screen for cognitive impairment, GPCOG <9. No impairment is GPCOG = 9.
1) 1 subject with missing data on race.
2) Includes 1 participant who responded completed college, unclear if completed 2 or 4 year program. Subject conservatively assumed to have finished 2 year program.
3) 2 subjects with missing Charlson data.
Current Substance Use by Cognitive Impairment Status.

<table>
<thead>
<tr>
<th>SUBSTANCE</th>
<th>IMPAIRMENT (n = 62, 78.5%)</th>
<th>NO IMPAIRMENT (n = 17, 21.5%)</th>
<th>P VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Self Report</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Tobacco</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>62</td>
<td>17</td>
<td>1.00</td>
</tr>
<tr>
<td>No</td>
<td>54, 87.1%</td>
<td>14, 82.4%</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>8, 12.9%</td>
<td>3, 17.6%</td>
<td></td>
</tr>
<tr>
<td><strong>Alcohol</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>62</td>
<td>17</td>
<td>0.20</td>
</tr>
<tr>
<td>No</td>
<td>35, 56.6%</td>
<td>12, 70.6%</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>27, 43.5%</td>
<td>5, 29.4%</td>
<td></td>
</tr>
<tr>
<td><strong>Marijuana</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>62</td>
<td>17</td>
<td>0.53</td>
</tr>
<tr>
<td>No</td>
<td>59, 95.2%</td>
<td>17, 100%</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>3, 4.8%</td>
<td>0, 0.0%</td>
<td></td>
</tr>
<tr>
<td><strong>Cocaine</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>62</td>
<td>17</td>
<td>NS</td>
</tr>
<tr>
<td>No</td>
<td>62, 100%</td>
<td>17, 100%</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>0, 0.0%</td>
<td>0, 0.0%</td>
<td></td>
</tr>
<tr>
<td><strong>Urine Drug Screen Results</strong></td>
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</tr>
<tr>
<td><strong>Benzodiazepine</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>54</td>
<td>16</td>
<td>0.33</td>
</tr>
<tr>
<td>Negative</td>
<td>48, 88.9%</td>
<td>16, 100%</td>
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</tr>
<tr>
<td>Positive</td>
<td>6, 11.1%</td>
<td>0, 0.0%</td>
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</tr>
<tr>
<td><strong>Opioid</strong></td>
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<tr>
<td>Total</td>
<td>54</td>
<td>16</td>
<td>1.00</td>
</tr>
<tr>
<td>Negative</td>
<td>53, 98.1%</td>
<td>16, 100%</td>
<td></td>
</tr>
<tr>
<td>Positive</td>
<td>1, 1.9%</td>
<td>0, 0.0%</td>
<td></td>
</tr>
<tr>
<td><strong>Marijuana</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>54</td>
<td>16</td>
<td>1.00</td>
</tr>
<tr>
<td>Negative</td>
<td>53, 98.1%</td>
<td>16, 100%</td>
<td></td>
</tr>
<tr>
<td>Positive</td>
<td>1, 1.9%</td>
<td>0, 0.0%</td>
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</tr>
<tr>
<td><strong>Amphetamine</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>54</td>
<td>16</td>
<td>NS</td>
</tr>
<tr>
<td>Negative</td>
<td>54, 88.9%</td>
<td>16, 100%</td>
<td></td>
</tr>
<tr>
<td>Positive</td>
<td>0, 0.0%</td>
<td>0, 0.0%</td>
<td></td>
</tr>
<tr>
<td><strong>Cocaine</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>54</td>
<td>16</td>
<td>NS</td>
</tr>
<tr>
<td>Negative</td>
<td>54, 100%</td>
<td>16, 100%</td>
<td></td>
</tr>
<tr>
<td>Positive</td>
<td>0, 0.0%</td>
<td>0, 0.0%</td>
<td></td>
</tr>
</tbody>
</table>

Impairment, defined as a positive screen for cognitive impairment, GPCOG <9. No impairment is GPCOG = 9.

**Poster Number: EI 13**

**Florida Medication Burden Assessment Rating—Exploratory Validation Study**

Andrew Pierce, MD1; Joseph E. Thornton, MD1,2; Uma Suryadevara, MD1,2

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2Malcolm-Randall VA Medical Center, Gainesville, FL

**Introduction:** This activity was undertaken as an AAGP Honors Scholar Project. Medications have a complex risk/benefit status for older patients particularly those with psychological and behavioral symptoms. Medications may save lives by ameliorating suicidal symptoms as well as improving compliance with care and enjoyment in quality of life activities. However, misused psychiatric medications are associated with serious CNS and respiratory depression, falls, and delirium. Additionally,
elderly patients are at increased risk for medication errors due to the number and frequency of medications coupled with decreased cognitive and social resources for proper adherence to medication regimens. The authors developed a structured assessment of medication burden, defined as the burden associated with the process of taking the medication correctly plus cumulative impact of systemic effects of the medication such as anticholinergic and sedative effects. Development of a clinically feasible medication burden scale will support future studies that assess the patient perception of medication burden, clinical status associated with medication burden and potential benefits in clinical outcomes by reducing the medication burden. The specific aims of this study are to: 1. Develop the process for assessment of medication burden: a. Define parameters for burden associated with medication numbers b. Define parameters for burden associated with medication frequency, c. Define a weight for burden associated with as needed medications d. Assess the burden of monitoring medications for safety e. Apply consistent ratings of anticholinergic load burden f. Apply consistent ratings for sedation burden 2. Explore characteristics of medication burden in different populations and settings a. Geriatric psychiatry inpatients b. Non geriatric adult psychiatry inpatients c. Geriatric psychiatry outpatients d. Non geriatric psychiatry outpatients e. Gender differences. Methods: The authors reviewed the medication profiles of 101 patients selected from clinical data recorded between August 2011 and October 2011. From these profiles we generated a pilot Florida Medication Burden Rating to assesses: Number of regularly prescribed medications Total number of medication administrations per day Burden of monitoring for drug safety (e.g. laboratory monitoring, or regulatory controls) Relative anticholinergic burden of medications Relative sedation burden of the medication profile The medication profiles recorded on the worksheets are being reviewed by the authors for the following: develop the process of assessment of medication burden, demonstrate interrater agreement and then explore the characteristics of the different populations and settings. To develop the process of assessment of medication burden, the authors have noted the total number of medications and administrations each day. The authors will apply their expert clinical knowledge to the interpretation of weights to assign to burden associated with as needed medication use and the burden of medication monitoring. The authors applied anticholinergic and sedation ratings as described in the references by Sloane et al and Rudolph et al respectively. For medications not included in the standards lists, the authors applied expert consensus knowledge to assign ratings to the medications for this pilot study. Results: A snapshot medication profile was obtained for 101 patients over 18 years old. 80 sampled patients were inpatients and 21 were outpatients. The numbers of medications for each patient ranged from 0 to 19 with 6 as the mean. Analysis is underway on the burden ratings of the medications for frequency, sedation and anticholinergic effects. Descriptive statistics will be applied to the total and categories of data (count, mean, minimum and maximum). Comparisons between categories will be done with non-parametric statistics for ordinal and categorical data. Conclusions: Development of a clinically feasible medication burden scale will support future studies that assess the patient perception of medication burden, clinical status associated with medication burden and potential benefits in clinical outcomes by reducing the medication burden.

This research was funded by: None.

References


Poster Number: EI 14

Factors Impacting Quality of Life in Patients with Mild Cognitive Impairment (MCI) and Alzheimer’s Disease (AD): A Cross-Sectional, Prospective Study in an Ambulatory Care Setting

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**Introduction:** Because there is no disease-modifying medication or effective treatment available for Alzheimer’s disease, improving and maintaining quality of life (QoL) is a primary goal of care for AD patients. Thus, discovering factors to improve QoL is an important area of interest for healthcare providers. The aim of the current study is to compare self-reported and caregiver-reported QoL for both MCI and AD patients. In addition, the study aims to explore correlations between QoL and neuropsychiatric symptoms, functional independence, and depression.

**Methods:** This study included 30 patient-caregiver dyads, recruited from the Veteran’s Affairs Memory Disorders Clinic in Salem, VA. The study cohort consisted primarily of Caucasian males (28M/2F, 90% Caucasian). The average age was 77 years (SD = 8.7). After recruitment and informed consent were completed, each patient was orally administered a series of questionnaires to assess to following: overall cognitive status (Mini Mental State Exam); quality of life (QOL-AD); neuropsychiatric symptoms (Neuropsychiatric Inventory Questionnaire); functional independence (Timed Get Up and Go test; Functional Activities Questionnaire; Katz Activities of Daily Living Scale); and depression (Geriatric Depression Scale). The primary caregiver for each patient also completed a QoL-AD questionnaire. The student’s t-test was used to compare self-reported and caregiver-reported QoL-AD scores. Linear regression models with a Spearman’s correlation coefficient were used to assess the relationship between QoL and MMSE, neuropsychiatric scores, GDS, and functional independence scores.

**Results:** Caregiver-rated QoL was significantly lower than patient-rated QoL (t = 4.50, difference in mean = 7.28, P = 0.0001). This difference was more pronounced in AD (t = 4.49, difference in mean 7.28, P = 0.0001) than MCI (t = 1.82, difference in mean 4.25, P = 0.0831). MCI patients had an overall lower QoL score than AD patients, even though AD patients had a significantly more functional dependence than MCI patients. However, there was no statistically significant relationship between functional dependence and QoL score. There was also no relationship between MMSE and QoL. Patients with high GDS score were more likely self-report a lower QoL, but there was no relationship between GDS and caregiver-reported QoL. In addition, although there was no relationship between NPI-Q and self-reported QoL, high NPI-Q (severity and distress) scores were predictive of lower caregiver-reported QoL. (P = 0.0146 and 0.0178, respectively).

**Conclusions:** Although AD patients are more functionally dependent on their caregivers, they do not report lower QoL than their more functionally independent MCI counterparts. In addition, there is a discordance between caregiver-reported and patient-reported QoL in AD patients. Both of these findings may be due to the lack of insight that is often seen in patients with advanced dementia. In addition, although mental status and functional dependence were not significantly correlated with QoL, the patient-reported QoL is inversely related to GDS score, and the caregiver-reported QoL is inversely related to NPI-Q score. Thus, neuropsychiatric factors appear to play more of a role in QoL than cognitive status or functional dependence.

This research was funded by: Not applicable.

**Introduction:** With our aging population and a limited number of geriatric psychiatrists, innovations will be needed in order to meet the ever-growing demand for geriatric mental health services. In the future, electronic tablets like iPads could potentially be used by patients to complete symptom self-report questionnaires. This form of communication would be particularly beneficial for the elderly population, many of which might have limited mobility. Furthermore, the systematic collection of clinical information could be used for clinical quality improvement initiatives and research. Previous studies have not yet systematically examined whether geriatric psychiatry patients can use and tolerate iPads (or other tablets) to complete self-report questionnaires. In this study, we investigate whether patients tolerate the use of electronic technology, such as iPads, in comparison with traditional paper-pencil forms to complete self-report questionnaires.

**Methods:** This was a study of 72 geriatric psychiatry outpatients (65+) and 50 adult psychiatry inpatients (18+). Patients were randomized to complete a set of self-report questions on either the traditional paper version of the questionnaires or the iPad version. The questionnaires consisted of 3 validated self-report measures: Brief Symptom Inventory (BSI-53), Patient Health Questionnaire (PHQ-9) and Activities of Daily Living (ADL). We ascertained patients’ clinical and demographic characteristics (including age, gender, and diagnosis) at the time of study. Our main outcome was tolerability: which percentage of patients completed all self-report items in each group. Our secondary outcome was the length of time required to complete...
The self-report questionnaires. The time necessary for the completion of every questionnaire was recorded, as well as the total time.

**Results:** Out of the geriatric psychiatry outpatients that took part in the study (n = 72), 33/36 (92%) completed the questionnaires. In this sub-population, a similar completion time was observed for both the BSI and the PHQ-9, for both iPad and paper groups. The amount of time to complete the ADL was shorter for patients that used the iPad version. Similarly, for adult inpatients (n = 50), there were no differences between paper iPad groups. Inpatients aged > 60 had relatively comparable times-to-completing the iPad questionnaires as those aged < 60 (6.20 vs. 4.58 minutes, p = 0.08), while patients aged > 60 took longer to complete the paper questionnaires (13.6 vs. 6.5 minutes, p = 0.04). Among the geriatric psychiatry outpatients, there was no correlation between advanced age and time-to-questionnaire completion on the iPad. Performance was not affected by psychiatric diagnosis or other factors.

**Conclusions:** We found that tablet-based symptom self-reports are well-tolerated by geriatric psychiatry outpatients and adult psychiatry inpatients. Clinically, this suggests that iPads and other tablets could be used to perform routine assessment of symptoms in a number of settings: in the inpatient unit, outpatient clinics, at patients’ homes, regardless of the psychiatric diagnosis and age categories. The data collected by iPads could be used to generate clinical databases to perform research and clinical program evaluation.

This research was funded by: Ghizlane Moussaoui was financially supported by the Dr. Clarke K. McLeod Memorial Scholarship as part of the Summer Research Bursary Program (McGill University). Dr. Soham Rej was supported by the CIHR Fellowship Award.

**Poster Number:** EI 16

**Indirect Effects of Behavioral Treatment for Insomnia on Depression, Anxiety, Perceived Stress and Telomere Length**

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**Introduction:** Insomnia is a frequent complaint of older individuals. While pharmacologic agents can be used for short-term insomnia treatment, long-term problems with insomnia are now often thought to be best treated with non-pharmacologic treatments, the most common of which is Cognitive Behavioral Therapy for Insomnia (CBT-I). CBT-I is a tool box of different “behavioral” and “cognitive” treatments. In an on-going study, we examine the moderating effects of common psychological facets, including depression, anxiety, and stress, on the success of CBT-I. We are also examining the effects of CBT-I on telomeres, the protective ends of DNA that are adversely affected by stress.

**Methods:** We have recruited fifty-seven community-dwelling individuals with insomnia, 43 females and 14 males, aged between 60 and 90 years. Prospective measures of sleep efficiency and the amount of wake after sleep onset were captured by one week of participant-completed sleep logs. Retrospective aspects of sleep were determined by the Insomnia Severity Index, Dysfunctional Beliefs and Attitudes about Sleep Scale, Epworth Sleepiness Scale, and Functional Outcomes of Sleep Questionnaire. Other psychological measures include the Geriatric Depression Scale-15, Geriatric Anxiety Scale-10, Penn State Worry Questionnaire and Perceived Stress Scale. Questionnaires and logs were completed before the onset of treatment, at the end of treatment (6 weeks), and 24 weeks after completion of treatment (follow-up). Blood was sampled for telomere analysis prior to the start of treatment and at follow-up. Paired t-tests were performed with Bonferroni correction for multiple testing.

**Results:** Of the 57 subjects enrolled in the study, to date 16 have completed the 24-week follow up. In the 57 baseline measurements, telomere length was significantly reduced with increasing age (r = -0.45, p < 0.001; Spearman). In the 16 completed subjects, there were improvements in sleep efficiency (p = 0.001), the Insomnia Severity Index (p < 0.0001) and the Dysfunctional Beliefs about Sleep Scale (p = 0.0008). There were no significant changes on the remaining sleep, psychological and telomere measures in the 16 completers.

**Conclusions:** In this interim analysis, it appears that CBT-I is efficacious and that telomere length is inversely related to age, as has been previously shown. In the first small group of subjects to have completed the study, telomere length was not affected by treatment.
Introduction: Lithium remains one of the recommended treatments for bipolar disorder and mania in older patients. Commonly observed Lithium toxicity symptoms in the older adults are inability to concentrate, fatigue, lethargy, tremors and cogwheel rigidity. And, at toxic Lithium levels, more complex neurological side-effects such as ataxia, dysarthria, confusion and seizures have been reported. Out of these, choreoathetosis is one of the rarest neurological symptoms of Lithium toxicity. There are thirteen such case reports in literature with neurotoxic choreoathetoid effects which were directly related to Lithium use and not attributable to other concomitant medications. Out of which our patient is the fifth documented case of reversible choreoathetosis above the age of 65.

Methods: We report a case of an elderly female, 74 years old with a history of Bipolar I disease. She had been taking Lithium for one and half months as part of her treatment regimen for Bipolar, mania. She also had a history of Tardive Dyskinesia (TD) in the past due to use of anti psychotics and hence was never prescribed any anti psychotics in the last eleven years of her treatment. She was routinely monitored in the outpatient clinic. Her last Lithium level during the outpatient visit was 0.7 mEq/L. Two weeks after her last outpatient visit she presented to the Emergency Department with choreoathetosis. She presented with unsteady gait, slightly dysarthric speech due to involuntary oro-buccal choreiform movements, involuntary movements of limbs, trunk and mild confusion in terms of time. Her Lithium level at that time was 1.7 mEq/l. She had a complete medical work up which was negative as well as her MRI was normal. Thus, it was suggested that her symptoms were due to Lithium toxicity. She was hospitalized and Lithium dose was gradually tapered. The next day her Lithium level decreased to 1.4 mEq/l as well as the involuntary movements of her limbs, trunk and mouth had decreased but her gait remained unsteady. Lithium was continuously tapered and her symptoms diminished. Lithium was eventually discontinued and on the fifth day of hospitalization her Lithium level was 0.4 mEq/l and patient was discharged as she exhibited no abnormal movements, had a steady gait and was psychiatrically stable. No additional treatment was required for reversal of symptoms. Thus, as the Lithium levels decreased there was an eventual resolution of her choreoathetoid movements.

Results: The biggest risk factor associated with Lithium toxicity in our case was her advanced age. Normal aging causes altered pharmacokinetics which increases the half-life of Lithium to upto thirty six hours thus resulting in Lithium toxicity. In our case, the sudden increase in her Lithium level to 1.7 mEq/l from her baseline of 0.6–0.7 mEq/l could have been due to reduced creatinine clearance of 56 mL/min due to her age. Also, normal aging causes changes to the central nervous system. Evidence suggests that serum Lithium levels do not accurately reflect CNS Lithium concentrations in older patients and therefore they may often manifest symptoms of Lithium neuro-toxicity despite having non-toxic appearing serum drug levels. The aforementioned along with her history of TD (pre-existing dopaminergic supersensitivity as well as previously demonstrated CNS susceptibility to medications) could have resulted in the development of choreoathetosis. Moreover, with a history of regular medical supervision, no use of any offending agents such as neuroleptics, calcium channel blockers, diuretics or NSAID and no evidence of Lithium overdose or excess intake of Lithium (confirmed via pill counts) prior to the onset of the symptoms suggested that normal physiological changes due to aging and lack of Lithium dosing guidelines and safe maintenance serum concentrations for the elderly are the prime reasons of her Lithium toxicity. As per some authors, allowing elderly patients to maintain levels within the traditionally accepted range of 0.5–1.2 mEq/L is too high.

Conclusions: This case report reflects the need for cautious use of Lithium in elderly patients as well as consideration of choreoathetosis as one of the signs of Lithium toxicity in older patients. Further studies are warranted to examine the exact mechanism of action associated with Lithium induced chorea in elderly. Also, there is a need to develop safe prescribing guidelines and recommended serum Lithium levels for use of Lithium in the elderly.
Table 1. Enlisting cases of Lithium (therapeutic dose) induced Choreoathetosis without any Concomitant Medications attributing to it in the older patients above the age of 65 years

<table>
<thead>
<tr>
<th>Case</th>
<th>Year</th>
<th>Sex</th>
<th>Age At Onset of Chorea (Years)</th>
<th>Maximum Recorded Lithium Level</th>
<th>Description of Chorea</th>
<th>Reported Duration of Chorea</th>
<th>Management of Lithium Toxicity Required Beyond Supportive Care</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Podskalny, GD, et. al.</td>
<td>1996</td>
<td>Female</td>
<td>78</td>
<td>2.2 mEq/L</td>
<td>Writhing, rocking, and twisting movements of the head, neck, extremities, and trunk.</td>
<td>Approximately 13 days</td>
<td>Discontinuation of Lithium</td>
</tr>
<tr>
<td>2. Coats, DA, et. al.</td>
<td>1957</td>
<td>Female</td>
<td>73</td>
<td>3.5 mEq/L</td>
<td>Twitching of small muscles of hand and face and cross-limb jerks</td>
<td>5 days</td>
<td>Discontinuation of Lithium</td>
</tr>
<tr>
<td>3. Matsis, P., et. al.</td>
<td>1989</td>
<td>Female</td>
<td>71</td>
<td>2.0 mEq/L</td>
<td>Spontaneous, irresistible choreiform movements of arms, trunk, &amp; legs</td>
<td>14 days</td>
<td>Discontinuation of Lithium</td>
</tr>
<tr>
<td>4. Stemper, B. et. al</td>
<td>2003</td>
<td>Female</td>
<td>76</td>
<td>2.43 mEq/L</td>
<td>Spontaneous twisting and choreoathetoid movements of hands and arms</td>
<td>5 days</td>
<td>Hemodialysis</td>
</tr>
<tr>
<td>5. Our case</td>
<td>2015</td>
<td>Female</td>
<td>74</td>
<td>1.7 mEq/L</td>
<td>Choreoathetosis in face and upper extremities and trunk</td>
<td>5 days</td>
<td>Discontinuation of Lithium</td>
</tr>
</tbody>
</table>

Exclusion Criteria: (Cases reporting concomitant use of neuroleptics or other drugs associated with development of chorea and articles not available in English.)

This research was funded by: none.

Poster Number: EI 18

**Farewell Mood Stabilizers? Current Canadian Psychotropic Medication Prescribing Patterns in Late-Life Bipolar Disorder**

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**Introduction:** Many patients with bipolar disorder are reaching old age, but whether they are receiving evidence-based psychotropic treatment remains unclear. We aimed to describe current psychotropic prescribing patterns in a large North American late-life bipolar sample.

**Methods:** Population-based cross-sectional study of 1,443 bipolar disorder patients aged ≥ 66, discharged from a psychiatric hospitalization in Ontario, Canada between 2006–2012. We described psychotropic medication prescribing within 30-days post-discharge.

**Results:** Prescription of ≥2 psychotropic medications was highly prevalent (81.5%). The most common medications were atypical antipsychotics (75.3%), benzodiazepines/zopiclone (42.3%), and antidepressants (38.5%), with less frequent use of valproate (35.4%) and lithium (23.4%). Only 1.4% of patients were on lithium monotherapy, while 4.4% and 15.7% of patients were on antidepressant or atypical antipsychotic monotherapy. 8.9% of all patients were using ≥2 atypical antipsychotics.

**Conclusions:** In routine clinical practice, older adults with bipolar disorder are often prescribed multiple psychotropic medications. In many instances, practices did not reflect bipolar treatment guidelines and may be putting patients at risk for poor physical health and psychiatric outcomes. One such example is the very infrequent use of lithium monotherapy. Future research should examine whether health system-wide protocolized late-life bipolar treatment may optimize prescribing to improve effectiveness and safety.
This research was funded by: This work was supported by the Canadian Institutes of Health Research (CIHR) Catalyst Grant CHL-126215. This study was supported by the Institute for Clinical Evaluative Sciences (ICES), which is funded by an annual grant from the Ontario Ministry of Health and Long-Term Care (MOHLTC). The opinions, results and conclusions reported in this paper are those of the authors and are independent from the funding sources. No endorsement by ICES or the Ontario MOHLTC is intended or should be inferred. The funders were not involved in the conduct or publication of this study.

Poster Number: EI 19

Medical Comorbidity in Late-Life Bipolar Disorder: A Comparison of Lithium, Valproate, and Other Pharmacotherapies
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Introduction: Bipolar disorder is associated with high rates of medical comorbidity, especially in late life. However, little is known about whether certain comorbidities or other medical health outcomes are associated with bipolar pharmacotherapy. Despite on-going concerns regarding lithium safety, we hypothesize that it will not be associated with greater medical comorbidity or acute care use for medical reasons.

Methods: Retrospective cohort study of 1,388 bipolar disorder patients aged ≥66, discharged from a psychiatric hospitalization in Ontario, Canada between 2006–2012. Patients were divided into lithium users, valproate users, and non-lithium/non-valproate users. We describe baseline medical comorbidity and one-year follow-up acute care use.

Results: Baseline medical comorbidity was very high: diabetes mellitus, chronic obstructive pulmonary disease, dementia, hypercholesterolemia, and hypertension each affected >30–50% of the cohort but this did not differ across therapy groups. Lithium, valproate, and non-lithium/non-valproate users also did not differ markedly in terms of 1-year acute medical health utilization outcomes.

Conclusions: There was a high prevalence of medical comorbidity among older adults with bipolar disorder but this did not appear to be associated with lithium use, compared to valproate and other medication use (e.g. antipsychotics). Preventative approaches in mid-life and late-life may reduce the burden of medical comorbidity in severe late-life bipolar disorder.

This research was funded by: This work was supported by the Canadian Institutes of Health Research (CIHR) Catalyst Grant CHL-126215. This study was supported by the Institute for Clinical Evaluative Sciences (ICES), which is funded by an annual grant from the Ontario Ministry of Health and Long-Term Care (MOHLTC). The opinions, results and conclusions reported in this paper are those of the authors and are independent from the funding sources. No endorsement by ICES or the Ontario MOHLTC is intended or should be inferred. The funders were not involved in the conduct or publication of this study.

Poster Number: EI 20

Antipsychotic Prescribing Patterns in a Medicare Advantage Population of Older Individuals with Dementia
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Introduction: Dementia is a multidimensional syndrome associated with multiple neurodegenerative brain diseases. Antipsychotic drugs are widely used to treat the behavioral and psychological symptoms of dementia. However, antipsychotic use in patients with dementia is associated with risk of side effects including cerebrovascular adverse events, further cognitive deterioration, extrapyramidal symptoms and somnolence. The purpose of this descriptive study is to examine the antipsychotic prescribing patterns for dementia patients enrolled in the Medicare Advantage program and identify opportunities for improvement in care for this high-risk population.
Methods: We looked at patients enrolled in Humana Cares, an integrated care management program that provides telephonic and in-person support for chronically ill Medicare Advantage members. The study sample includes Humana beneficiaries enrolled from November 2008 to January 2010 who had claims diagnosis of dementia and who enrolled in the program for at least 180 days. We looked at the number of patients with a dementia diagnosis that were prescribed a first or second generation antipsychotic and compared those patients to those who were not prescribed antipsychotic medication.

Results: Of the 8688 individuals in the Medicare Advantage population with a dementia diagnosis, 1061 (12.2%) received an antipsychotic medication. Correlates of receiving an antipsychotic medication included being dually eligible for Medicare and Medicaid (Adjusted OR 1.52, 95% CI: 1.22 to 1.76), having a co-morbid diagnosis of depressive disorder (Adjusted OR 1.9, 95% CI: 1.67 to 2.17) or substance use disorder (Adjusted OR 1.22, 95% CI: 1.01 to 1.49).

Conclusions: Antipsychotic prescribing patterns for patients with dementia in this Medicare Advantage population was 12.2%. Being dually eligible for both Medicare and Medicaid, and having co-morbid depression or substance use disorders increases the risk of being prescribed an antipsychotic medication.

Poster Number: EI 21

A Case of Delusional Parasitosis Complicated by Shared Psychotic Disorder (Folie a Deux)
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Introduction: Delusional Parasitosis is a rare condition occurring in 1.9 out of 100,00 person years in which individuals develop a delusion that they are infested with parasitic creatures despite evidence to the contrary. All age groups are affected but the literature shows that elderly women predominate. Shared Psychotic Disorder or Folie a deuex is also a rare syndrome in which two people share the same delusion. Here we present the case of a patient with a long standing delusional disorder of infestation and describe the challenges of engaging her in treatment due to the fact that her delusion was shared by her daughter. In addition to the case presentation, we will also provide a literature review on the topic.

Methods: Patient records in our system were reviewed. We searched the literature for information related to the evaluation and management of Delusional Parasitosis occurring alone, and in the presence of a folie a deuex.

Results: A 65 year old female was seen on the consultation liaison psychiatry for the chief complaint of “parasites that talk.” Investigation revealed a 15–20 year history of the delusion of being infested with parasites from another planet with multiple recent medical evaluations due to the belief that they are eating her vocal cords and pancreas. Her case is complicated by the fact that she has developed severe depression, hopelessness, and passive suicidal ideation. Her daughter is strongly opposed to her receiving any mental health treatment as he shares her delusion of infestation.

Conclusions: Delusional Parasitosis and Shared Psychotic Disorder (folie a deuex) are both rare, but do occur together. Studies have shown that an estimated 5–15% of Delusional Parasitosis patients have a Shared Psychotic Disorder. When these two syndromes occur together, it is more difficult to engage patients in treatment as the person sharing their delusion, in this case, the patient’s daughter, are resistant to psychiatric evaluation and treatment.

This research was funded by: Not applicable.

Poster Number: EI 22

Treatment Resistant Depression and Insomnia in Older Veterans: State of the Science and Planned Clinical Trial
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Introduction: One in 10 Veterans aged 65 years and older are diagnosed with Major Depressive Disorder (MDD); this is twice the rate found in the general older adult population. Treatment Resistant Depression (TRD) is common, with fifty percent of older adults failing first line antidepressants. Because of high psychiatric comorbidity and challenges with accessing and adhering to treatment, older Veterans with TRD may have more severe forms of the illness. There is a gap in research characterizing TRD in older Veterans. Closing this gap is important for the development of novel, patient-centered
interventions. Insomnia is highly prevalent in older adults at rates ranging from 15–35%, and it is commonly comorbid with MDD. Patients with insomnia are more likely to become depressed or to have a recurrence of their depression. In the absence of symptom-specific treatment, depressed patients with insomnia often do not achieve fully sustained remission of MDD. This is a problem as partially or untreated late-life depression is associated with increased risk for neurocognitive disorders, medical comorbidities, poor quality of life, and completed suicide. Treating insomnia in patients with insomnia and depression improves both conditions, but it is unclear if this applies to older Veterans. Cognitive Behavioral Therapy for Insomnia (CBT-I) is considered first line treatment for insomnia, but less desirable treatments such as hypnotic agents (benzodiazepines) are more commonly used. Behavioral treatments are advantageous in comparison to pharmacological management that may worsen cognitive impairment, increase the risk for falls, and exacerbate breathing related disorders such as Obstructive Sleep Apnea (OSA). Another important behavioral therapy is Brief Behavioral Therapy for Insomnia (BBTI), which is efficacious in treating insomnia in older adults with comorbid psychiatric or medical illnesses, but its efficacy with Late-Life TRD is unknown. To our knowledge, there has been no research on augmenting antidepressant pharmacotherapy in late-life TRD using a learning based approach such as BBTI for insomnia with the aim of achieving full remission for both depression and insomnia.

Methods: The study will be a pilot randomized controlled trial primarily focused on demonstrating feasibility and data collection. The qualitative data will be used to inform future implementation for preferred interventions. Secondarily it will focus on demonstrating the feasibility of BBTI in augmenting antidepressant treatment in older Veterans with TRD and insomnia. Thirty Veterans with TRD (defined as having failed at least one prior adequate antidepressant trial will be recruited. During phase 1, which will last 4 weeks, Veterans’ and antidepressant treatment will be optimized participants will be randomized to the 2 study arms: a) ‘optimized antidepressant treatment’ + BBTI vs b) ‘optimized antidepressant treatment’ alone. In the second phase also lasting 4 weeks, Veterans who did not receive BBTI will then receive BBTI (Fig. 1) Assessments will be conducted at study entry, 2, 4 and 8 weeks. Time dependent measures will include the Montgomery-Asberg Depression Scale (MADRS), Insomnia Severity Index (ISI) and Short Form-12 (SF-12). Baseline measures will include a qualitative interview, Montreal Cognitive Assessment (MOCA), Antidepressant Treatment History Form (ATHF), and a survey of patient treatment preferences.

Results: Anticipated Results: We hope to characterize depression, insomnia, and relevant clinical characteristics of older Veterans with TRD. We hypothesize that ATHF scores will have a positive association with MADRS scores and MADRS scores will have a positive association with ISI scores. We will also assess and describe the feasibility of using BBTI to treat Veterans with TRD and insomnia and gather preliminary evidence about whether antidepressant augmentation with BBTI leads to improvement in MADRS and ISI scores in older Veterans receiving BBTI versus control.

Conclusions: Expected Impact on the Field: Little research has been done examining the nature of TRD in Veterans who experience insomnia. There is evidence supporting the efficacy of behavioral therapies such CBTI and BBTI for treating insomnia. However, there is a gap in the literature on the feasibility and efficacy of using a learning-based approach such as BBTI for improving both depression and commonly comorbid insomnia in Veterans living with both these conditions. Presenting this study protocol to leaders in the field of geriatric psychiatry will provide invaluable feedback for improvement in design and methods. The views do not represent the views of the US Department of Veterans Affairs or that of the US government.

This research was funded by: This material is the result of work supported with resources and the use of facilities at the Mental Illness Research, Education and Clinical Center (MIRECC) VA Pittsburgh Healthcare System, PA.
Introducción: El litio es un medicamento eficaz para el tratamiento de la enfermedad bipolar. Hay varios informes que indican una potencial protección neuroprotectora en diferentes trastornos degenerativos incluyendo el síndrome de Huntington, enfermedad de Alzheimer, esclerosis lateral amiotrófica y enfermedad de Parkinson. La parkinsonismo inducida por medicamentos es típicamente relacionada con antipsicóticos y rara vez con el litio. Describimos el caso de un parkinsonismo inducido por litio en una paciente femenina de 65 años con enfermedad bipolar. Su examen físico mostró facciones escondidas, temblores posturales, temblores de reposo y estructurales en ambos miembros superiores y inferiores, rígidez del cuello y moderada rigidez del miembro superior con ticovulación. Además, tenía bradicinesia con congelación de la marcha. El Escalón Uniificado de la Enfermedad de Parkinson (UPDRS) inicialmente fue 52. La puntuación de MOCA de base fue 10.

Métodos: Se describe un caso de un paciente con parkinsonismo inducido por litio. También se presenta una revisión de la literatura en este tema.

Resultados: El DaTscan no mostró enfermedad de Parkinson idiopática. El parkinsonismo disminuyó al reducir el nivel de litio a un rango entre 0,62 y 0,73 mEq/L. Específicamente, el paciente ya no tenía congelación de la marcha, su marcha no estaba menos encorvada, sus temblores y postura mejoraron. El estado de ánimo de la paciente también permaneció estable a nivel de límite inferior de la concentración de litio. El score MOCA mejoró a 19. El UPDRS disminuyó a 24.

Conclusión: Aunque hay varias hipótesis, el mecanismo patofisiológico subyacente del parkinsonismo inducido por litio no ha sido completamente comprendido. Es importante reconocer que incluso en la presencia de un nivel de litio normal, los pacientes pueden presentar síntomas parkinsonianos. Se deben considerar niveles terapéuticos de litio más bajos en la población de pacientes bipolar mayores debido al mayor riesgo de interacciones de medicamentos y incremento de vulnerabilidad para efectos adversos de salud. Se requieren estudios adicionales para analizar la relación clara entre litio y parkinsonismo.

This research was funded by: Not applicable.

Poster Number: EI 24
Falls and Inpatient Geriatric Psychiatry: A Simple Solution to a Chronic and Difficult Problem
Tamkeen Khurshid, MBBS; Melinda S. Lantz, MD, MD
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Introducción: Objetivos: Nuestra población mayor está particularmente vulnerable a caídas, especialmente en un entorno hospitalario. Esto se debe a desencadenamiento psicótico, múltiples comorbilidades médicas, medicamentos, déficits en el equilibrio y ser en un entorno desconocido. Las caídas en una unidad de psiquiatría geriátrica tienen consecuencias adversas como fracturas, traumatismo craneoencefálico y hasta la muerte. Incluso caídas leves pueden resultar en una estadía prolongada en el hospital. En la unidad de psiquiatría geriátrica, la incidencia de caídas en unidades de comportamiento tiende a ser más alta que en unidades de hospitalización general, con tasas estimadas de 13,1 a 25 por 1,000 pacientes hospitalizados, en comparación con 3 a 5 por 1,000 en las unidades de hospitalización general. Las caídas en una unidad de psiquiatría geriátrica son atribuibles a la prescripción de psicofármacos con los efectos colaterales de sedación, ortostatismo, hipotensión ortostática y síntomas piramidales. Otros factores comunes incluyen cambios en la presión arterial, ortostatismo y disfunción del equilibrio.

Métodos: Utilizamos intervenciones rápidas, accesibles y reutilizables para reducir la tasa de caídas. A lo largo de 2 años de observación en nuestra unidad de psiquiatría geriátrica, revelamos que 30% de las caídas ocurrieron en 2 horas de administración de “PRN” medicamentos para agitación, ansiedad e insomnio. Esto, con atención al ortostatismo, presión arterial, uso de medicamentos psicofármacos, se convirtió en nuestro objetivo de intervención. Las guías para “necesitados” PRN medicamentos prescritos a pacientes mayores de agitación, ansiedad e insomnio estaban siendo proporcionados y reforzados con educación y diseminación. El objetivo es utilizar la dosis más baja posible. El segundo foco de uso de pruebas de presión arterial ortostática para medir la dosis de psicofármacos y otras medicaciones.

Resultados: Nuestro estudio piloto, el uso de pruebas de presión arterial ortostática en 28 pacientes en la unidad de psiquiatría geriátrica, en una mañana reveló que 6 pacientes que tenían cambios en la presión arterial ortostática, de los cuales dos fueron asintomáticos. Estos resultados preliminares han llevado a medicamentos de insomnio más tardíos en el día para un subgrupo de pacientes. Las dosis de medicamentos para agitación, ansiedad e insomnio han sido reducidas y limitadas.
Conclusions: Elderly psychiatric patients increasing susceptibility to falls is associated with significant mortality and morbidity. Therefore, healthcare facilities need to use multifactorial approach towards addressing prevention of falls such as environmental, medical comorbidities and medications. Extreme caution is advised prescribing psychotropic medications especially, PRN medications for agitation, anxiety and insomnia. Emphasis on routine orthostatic blood pressure measurements is a valuable tool to identify patients at risk and to guide dosing of medications.

Poster Number: EI 25

Including Disaster Psychiatry in a National Curriculum for Health Professionals on Caring for Older Adults in Disasters
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2National Center for Disaster Medicine and Public Health (NCDMPH), Rockville, MD
3Henry M. Jackson Foundation for the Advancement of Military Medicine (HJF), Bethesda, MD
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Introduction: The objective was to create a curriculum for educators to teach health professionals from a variety of disciplines the best evidence-based approaches for caring for older adults during both natural and man-made disasters. The curriculum was mapped to disaster medicine and public health core competencies developed in collaboration with staff at the National Center for Disaster Medicine and Public Health. As stated within the curriculum: the purpose is in alignment with the vision of the National Center for Disaster Medicine and Public Health, “a Nation of resilient communities with a competent health workforce prepared to respond and mitigate all-hazards disasters.”

Methods: Subject matter experts for each of the lesson topics were contacted and asked to participate in authoring a lesson. Each expert was assigned a specific topic relevant to disaster medicine in the geriatric population. To help standardize the structure of the lessons, a template prescribing the overall structure of the lesson was developed by NCDMPH. This template included the following main sections: learning objectives, detailed content outline, learner activities, readings and resources and learner assessment strategies. The material was reviewed by subject matter expert peers. After the review, the curriculum was edited and reviewed a final time before release. A lesson specifically on disaster psychiatry was completed by Drs Llorente and Holloway. An extensive literature review was conducted looking at various man-made and natural disasters as it relates to mental health and the elderly. This literature search was used to create the content of the lesson and the reading list for further learning.

Results: A curriculum with 7 modules and 24 lessons has been created and is available online free of charge for educators who conduct training for health professionals on caring for the elderly in disaster situations. Lessons are mapped to core competencies in disaster health and provide supplemental readings in addition to an extensive course outline for flexible use by educators. The curriculum is meant to be a framework to use in teaching health professionals about this important topic. It can be used in part or in whole to target a variety of health professionals including physicians, nurses, social workers, EMS/paramedics, health care executives, psychologists and certified counselors. It is also applicable to a wide range of clinicians and first responders that are not specifically listed here.

Conclusions: As the American population ages, caring for the elderly is becoming an increasingly important topic in which all health care professionals need to be proficient. In addition, recent disasters have highlighted the need for a comprehensive plan to address both mental and physical health in the aftermath of a natural or man-made disaster. This curriculum addresses the need for a comprehensive course on caring for the elderly during a disaster. It covers a wide variety of topics including issues related to older adults before, during and after a disaster and provides an extensive list of resources for further reading. The goal in creating this curriculum was to disseminate it widely to increase the knowledge and competence of many health care professionals in caring for older adults during disasters. The section on disaster psychiatry specifically instructs providers about mental health concerns that may arise for the elderly during a disaster. This is important for mental health providers but even more so crucial for other first responders who may not have psychiatric experience. The goal was to help provide an overview so that these providers would be able to manage a mental health crisis in the field and also be aware how and where to refer patients for further and more advanced assistance. As our population ages and many older adults struggle with mental illness, it is important that health care providers be educated on how to manage symptoms that are exacerbated or caused by a disaster.

This research was funded by: This curriculum was developed through the support of the US Department of Veterans Affairs. This project was funded through a grant agreement with the U.S. Department of Veterans Affairs, Veterans Health Administration, Office of Public Health grant number: HU0001-11-I-0011. The Henry M. Jackson Foundation for the
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Poster Number: EI 26
Venous Thromboembolism in Two Geriatric Patients with Recent Initiation of Atypical Antipsychotics
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Introduction: Elderly patients often times have complicated medical histories and multiple factors that put them at higher risk for venous thromboembolism (VTE). An association between antipsychotics and VTE has been discussed in observational studies and review articles. The highest risk has been associated with use of clozapine and first generation antipsychotics, however there have been more recent reviews highlighting the increased potential second generation antipsychotics have on VTE risk.1

Methods: Literature review and case descriptions. We describe two cases of clinically significant VTE with recent initiation of first generation antipsychotic medication. Ms. M was a 65 year old female with newly diagnosed bipolar I disorder and was hospitalized for acute mania and psychosis. Ms. M was treated with risperidone along with traditional mood stabilizers and developed a pulmonary embolism and deep venous thrombosis shortly after initiation of treatment. Ms. C was a 77 year old female with newly diagnosed bipolar I disorder that was hospitalized for depression and psychosis. Ms. C was treated with quetiapine and ECT and also developed a pulmonary embolism and deep vein thrombosis within 2 months of starting treatment. Both patients had risk factors for VTE but no past history of VTE or antipsychotic use prior to their current presentation. Both patients required anticoagulant therapy following the VTE and were switched to alternative mood stabilizers for maintenance treatment.

Results: Our case will review literature on risk of VTE with antipsychotic use and highlight the varying degrees of risk between different antipsychotics.

Conclusions: Assessing risks and benefits of antipsychotic medication presents unique challenges when trying to stabilize a psychiatrically ill patient. Managing and educating patients and family about potential risk factors can help protect patients from medical complications that may present in the course of their treatment.

Reference

Poster Number: EI 27
Cross Coverage on the Geropsychiatry Unit: Transfers to Medicine and Training for Residents
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Introduction: The number of older Americans is increasing rapidly; by 2030 it is expected that 20% of the nation’s population will be older than 65.1 Estimates suggest that the prevalence of mental illness in these older adults will exceed 20%.2 Our workforce is unprepared for this shift in demographics with insufficient geriatric psychiatrists to meet the demand.3 Due to the shortage of specialists in geriatric psychiatry it is likely that general psychiatrists will increasingly be called upon to provide care for these older adults. One deterrent for some psychiatrists in working with older adults is that these patients tend to be more medically complex. Indeed, 2/3 of older adults have multiple chronic conditions.4 With increased training on common medical comorbidities in older adults, psychiatrists may feel more comfortable treating these patients. The purpose of this project was two-fold. First, we desired to better understand the emergent medical issues that arise in patients admitted to our geriatric psychiatry unit. Second, we set out to use this data to inform a training session for resident psychiatrists who would be
providing on-call coverage on the geropsychiatry unit. Our goal was to improve resident comfort in addressing common medical and psychiatric issues that may emerge overnight in older patients.

**Methods:** Chart Review. The charts of all patients who were admitted to the University of North Carolina (UNC) Geropsychiatry Unit and were subsequently transferred to a medical or surgical unit from June 2014 through June 2015 were reviewed. Demographic data, primary and secondary diagnoses, medications, reason for transfer, and final outcome were recorded and analyzed. Resident Training. Postgraduate year 2 (PGY2) residents at UNC provide overnight coverage of the geropsychiatry unit while on call. To prepare the residents for this responsibility we led a 1-hour training during the PGY2 orientation. The results from the chart review were shared with the residents to emphasize the most common emergency issues that arise, including infections, chest pain, falls, and pain. We provided instruction on evaluation and treatment of these common problems. In addition we discussed common psychiatric issues including altered mental status, agitation, and insomnia. The residents were given practical tips for resources in the hospital to help with medical concerns and were encouraged to call medical consults when needed. At the conclusion of the training the residents were asked to complete an anonymous, 3-item, paper-and-pen survey to assess their comfort with providing coverage on the geropsychiatry unit before and after the session.

**Results:** In total, 14 patients, ages 47–90, were transferred from the geriatric psychiatry unit to a medical or surgical unit. Half of the transfers occurred in patients who were 65 and older. Five of these transfers occurred during the day, and 9 occurred at night or over the weekend. A variety of complications led to transfer; 4 patients were transferred because they met systemic inflammatory response syndrome (SIRS) criteria and 2 patients were transferred due to syncope. Other etiologies included respiratory distress, cardiac arrest, altered mental status, gastrointestinal bleeding, hyperkalemia, seizures, varices, and a subdural hematoma (sustained prior to admission). A total of 12 PGY2s participated in the training and completed the survey. Prior to the training one of the residents reported feeling “extremely anxious” about providing overnight coverage on the geropsychiatry unit; 9 reported feeling “anxious,” and 2 reported feeling “neither anxious nor comfortable.” After the training session, 2 residents reported feeling “anxious,” 6 reported feeling “neither anxious nor comfortable,” and 4 reported feeling “comfortable.”

**Conclusions:** Transfers from a geropsychiatry unit to a medical or surgical unit can occur after-hours, and the medical conditions requiring these transfers are varied. A 1-hour review session to cover common medical and psychiatric complaints in geriatric patients can help residents feel more comfortable with on-call coverage.

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**References**


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**The Growing Interface of Older Individuals and the Legal System**

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**Introduction:** The baby-boomers will all reach advanced age by 2020. With them they bring a lifetime of experiences, cultural norms, and habits, many of which place them at higher risk of contact with the legal system than previous older-cohorts. Indeed, increasing numbers of older individuals are interacting with the legal system, such that they are now the fastest growing group of prisoners. This represents a novel trend not seen with previous cohorts of older individuals, and bodes poorly for the U.S. correctional system, which is already struggling to find ways to care for their older prisoners’ basic requirements. The significant medical and psychiatric needs of this population places strain on the resources of the system and imposes new challenges given the specialized care needs of this population, and the numbers are only expected to grow.

**Methods:** Potential studies for inclusion were identified by querying Pubmed, PsychInfo, Google, Google Scholar, and Westlaw Database for various combinations of these terms: geriatric, older, elderly, arrest, incarceration, prisoner, inmate, forensic,
psychiatry, forensic psychiatry, and trial up to June 2015. Duplicate studies and legal reports were removed from inclusion. Studies adopting descriptive, observational, analytical, and experimental studies were considered for establishing current conditions and numbers of older individuals within the criminal justice system, particularly within the Department of Corrections. Given the limited number of both scientific and legal cases directly addressing these issues, all studies were considered for inclusion. The full text of each article was reviewed and those directly addressing the current relationship between older individuals and the legal system were included. The Sourcebook of Criminal Justice Statistics, a free online report of nationwide arrests by category of crime and age by decade, was used as the best definitive source of numbers to establish trends between older individuals and increased interaction with the legal system. The numbers obtained were consistent with those reported in queried studies.

**Results:** The number of geriatric prisoners is increasing. Between 1995 and 2010, the number of prisoners in the United States grew by 42%, but the number of elderly prisoners grew at 6 times this rate, an increase of 282%. By 2014, older inmates accounted for over 16% of the prison population, an estimated 246,600 older prisoners. The reasons for the increasing older prison population are multifactorial. Stringent mandatory sentences, three strike laws, and the war on drugs have resulted in longer sentences. Limited parole opportunities, underuse of compassionate early release, and truth-in-sentencing laws, formed a bottleneck effect wherein greater numbers of individuals are serving longer, inflexible prison sentences. Additionally, geriatric individuals are also committing more crimes and are being arrested with increased frequency. In 2002, there were 533,977 reported arrests of older persons, representing 5.5% of all arrests. By 2010, this number had risen to 908,233 comprising 8.9% of all arrests, and had increased again to 9.6% in 2011. It is projected that by 2030 older individuals will account for a third of all prisoners in the U.S. with upwards of 400,000 older prisoners. This sustained mass incarceration of older individuals has major economic, social, ethical, and health implications.

**Conclusions:** To address this, states will have to consider adopting principles such as early release, medical parole, compassionate release, specialty housing units, and potentially repealing strict sentencing laws in favor of more community-based rehabilitation programs. These overhauls to the criminal justice system will take time, but should help to mitigate the burden of overcrowding and inhumane care. In the interim, given this increase in older individuals interfacing with the law, it is projected that progressively more forensic psychiatric evaluations will be needed prior to trial, during incarceration, at the time of parole, as well as in civil court. The age-related nature of this population’s unique needs predicts an increased need for psychiatrists with a thorough knowledge of, and background in, geriatrics.

**Poster Number:** EI 29

**Statistical Analysis Suggests Some Suicidal Adults Choose Physician Assisted Suicide in Oregon**

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**Introduction:** The elderly have the highest suicide rates in the United States. Physician Assisted Suicide (PAS) has been available to Oregon residents under the “Death With Dignity Act” (DWDA) since 1997, allowing approved patients to obtain a prescription for a lethal dose of medication for self-administration. Participation is limited to terminally ill individuals free of mental conditions that impair judgment, and who are expected to die in fewer than six months. As a matter of statute, these deaths are not recorded as suicide. Public records are not available regarding whether or not individuals who died under the DWDA had been diagnosed with a mental health disorder, but few patients seeking PAS are referred for psychiatric consultation. This poster reviews gender differences in PAS among people 265 years old, and aims to investigate whether reductions in suicide rates among this age group may be attributable to diversion into PAS.

**Methods:** Suicide data was obtained from Oregon Vital Statistics Reports for years 1998–2013. Statistics across discrete age ranges were combined to obtain a single 265 year old value for males and females, respectively, which was then summed to obtain a single combined count. The respective annual rates were then calculated using population data and PAS data obtained from Death With Dignity Act Annual Reports for years 1998–2013.

**Results:** An independent samples t-test revealed significant differences between rates of PAS from 1998–2013 between males (M = 7.53, SD = 3) and females (M = 5.24, SD = 2.4); t(30) = 2.372, p = .0243. There was a much greater difference between the rates of suicide between males (M = 46.88, SD = 5.59) and females (M = 6.42, SD = 1.52); t(30) = 27.93, p = < .00001. As the PAS rate increases, the rate of suicide decreases. The combined male and female population shows a moderate negative correlation, r(30) = -.62, p = .01. A strong correlation is seen among males, r(30) = -.059, p = 0.015, but not among females r(30) = -.06, p = .825. This supports the contention that deaths by suicide are being diverted to PAS. Oregon reported a 15% decrease in suicide among males age ≥65 between the years 2000–2010. However, the deliberate self-death rate, calculated by summing suicide and PAS rates, reveals a decrease of <1% between the years 2000–2010.

**Conclusions:** PAS rates did not have a significant effect on suicide rates for females aged ≥65, implying that female PAS decedents are drawn from a population discrete from potential suicide decedents. As PAS rates increase, suicide rates decrease among males, but not females. Possible explanations for this include the fact that women are almost twice as likely to be diagnosed with mental disorders or be in treatment for mental health problems. If the provision of successful treatment explains the lower rate, it supports the need for better interventions to identify and address depression and suicidal ideation in geriatric males.

**Neuroticism Components Selectively Impact Long Term Illness Course and Cognitive Decline in Late-Life Depression**

Kevin Manning, PhD; Grace Chan, PhD; David Steffens, MD, MPH

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**Introduction:** Neuroticism is a broad construct conveying a predisposition to experience psychological distress and negative mood states. Component subscales of neuroticism include the personality traits of anxiety, hostility, depression, social anxiety, impulsiveness, and vulnerability to stress. Higher levels of neuroticism are associated with worse clinical outcomes in older adults with late-life depression (LLD). Vulnerability to stress and anxiety may drive this association. Our group previously reported that vulnerability to stress in LLD is associated with: 1) a worse one-year antidepressant treatment response and 2) a two-year decline in global cognitive functioning. Moreover, other investigators have found that vulnerability to stress and trait anxiety were the only neuroticism components associated with global cognitive decline in non-depressed older adults followed over three years. The current study expands upon this prior evidence by investigating the long-term association between neuroticism subcomponents in older adults with major depression and: 1) depression illness course and 2) multiple domains of cognitive functioning. We hypothesized that anxiety and vulnerability to stress would be associated with worse illness course and cognitive decline.

**Methods:** One hundred and twelve older depressed adults (mean age 67.8 ± 6.1) completed the NEO Personality Inventory, an annual comprehensive neuropsychological exam, and were routinely assessed by a study geriatric psychiatrist using the Montgomery Asberg Depression Rating Scale (MADRS). Patients were treated with antidepressants using an established treatment guideline and were followed as clinically indicated for up to 10 years. Cognitive outcomes included global cognition (measured using the Consortium To Establish a Registry for Alzheimer’s Disease composite score), executive functioning (measured using Trail Making Part B), and verbal memory (measured using the delayed recall Logical Memory subtest from the Wechsler Memory Scale). The presence of high neuroticism scores was determined using a clinically recommended gender adjusted T score of ≥ 55 for the NEO variables. We used generalized linear mixed models to test the effect of the elevated neuroticism and individual components on illness course (MADRS score) and cognitive decline. Models were fit with random subject-specific intercepts and slopes. Terms in individual models included the presence of an elevated NEO score, time, their...
Interaction, and covariates (age, education, race, gender). Interactions with time were the main predictors of interest; significant interactions indicate that rate of illness course and cognitive decline are associated with certain components of neuroticism.

**Results:** Generalized linear mixed modeling of illness course revealed three two-way interactions with time. High total neuroticism ($p = 0.032$), vulnerability to stress ($p = 0.038$), and impulsivity ($p = 0.023$) were associated with slower depression recovery rates over time. Modeling of global cognition and executive functioning revealed a significant interaction with time and vulnerability to stress ($p < 0.001$ for both), but there were no two-way interactions between time and other component scores. Modeling verbal memory revealed significant two-way interactions between time and vulnerability to stress ($p < 0.001$), anxiety ($p = 0.027$), social anxiety ($p = 0.037$), hostility ($p = 0.003$), and total neuroticism ($p = 0.012$).

**Conclusions:** Higher vulnerability to stress, but not trait anxiety, was consistently associated with worse illness course and cognitive decline in older adults with major depression clinically followed an average of eight years. This is consistent with the established hypothesis that longstanding stress may reduce hippocampal volume via glucocorticoid secretion thereby increasing susceptibility to cognitive decline. The more novel finding from the present study is that high impulsivity was also associated with worse long term illness course in LLD. Other investigators have found that trait impulsivity in LLD is associated reduced ventromedial prefrontal cortex activation and a history of suicide attempts. Thus, trait impulsivity may have a prominent role in the ventromedial-limbic dysfunction of geriatric depression. This warrants further investigation.

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**Poster Number: EI 31**

**Investigating the Association between Depressive Symptoms and Cortical Tau Across the Alzheimer’s Disease Spectrum**

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**Introduction:** Depressive symptoms are common manifestations of prodromal Alzheimer’s disease (AD) and AD dementia that are associated with functional impairment and disease progression. The in vivo association between tau (one of the main AD proteinopathies), depression, and cognitive decline is not well elucidated in cognitively normal (CN) elders and those with mild cognitive impairment (MCI) and AD dementia. In this study, our objective was to investigate the cross-sectional association between depressive symptoms and cortical tau in CN older adults and those with MCI and mild AD dementia. We hypothesized that increased tau in the entorhinal cortex (EC) and inferior temporal (IT) cortex would be associated with increased depression.

**Methods:** We measured depressive symptoms using the Geriatric Depression Scale (GDS), from which three symptom factor scores (dysphoria, apathy-anhedonia and anxiety-concentration) were derived, and in vivo cortical tau using T807 (18F-AV-1451) positron emission tomography (PET) in 150 well characterized older adults: 123 CN and 27 symptomatic (17 MCI; 10 mild AD dementia). We employed generalized linear regression models to evaluate the relation of GDS score to EC or IT tau in separate backward elimination models. Predictors included age, gender, global cognition, and tau. In secondary analyses, similar models were built for each of the GDS symptom factor scores, and also included cortical amyloid (Pittsburgh Compound B (PiB) PET) and its interaction with tau as predictors.

**Results:** Increased GDS score was significantly associated with increased EC tau (partial $r = 0.254$, $p = 0.002$); increased age ($p = 0.039$) and male gender ($p = 0.003$) were significant predictors in this model. In exploratory analyses, increased EC tau was significantly associated with increased dysphoria (partial $r = 0.201$; $p = 0.022$) and increased anxiety-concentration (partial $r = 0.191$, $p = 0.030$). The interaction between EC tau and amyloid was significantly associated with increased GDS score (partial $r = 0.243$; $p = 0.003$).

**Conclusions:** These results suggest an association between increased depressive symptoms and greater EC tau in individuals across the AD spectrum. Probing this association longitudinally across stages of pathogenesis may inform treatment approaches.

**This research was funded by:** Harvard Medical School Department of Psychiatry Dupont Warren Fellowship and Livingston Award (PI: Gatchel); Massachusetts Alzheimer’s Disease Research Center NeuroDiscovery Award (PI: Gatchel);
Correlates of Suicidal Thoughts in Korean American Elders: Analysis of Memory and Aging Study of Koreans (MASK)

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Introduction: Suicide rate among elderly Asian American women are highest among all ethnic groups of elderly women,1 and older Asian primary care patients report higher rate of suicidal ideation than any other ethnic groups.2 However, few studies are available on correlates of suicidal thoughts among Asian American elders in the community. Based on Memory and Aging Study of Koreans (MASK), we have examined the correlates and self-rated mental health status of Korean American elders (KAE) who endorse suicidal thoughts.

Methods: A community-representative sample of KAE (N = 1118) residing in the Baltimore-Washington area were asked about thoughts of death and self-injury (TDSI) during administration of Korean version of the Patient Health Questionnaire.

Table 1. Characteristics of elders with or without suicidal ideation

<table>
<thead>
<tr>
<th>Variable</th>
<th>KAE with TDSI (n = 164, 14.7%)</th>
<th>KAE without TDSI (n = 952, 85.3%)</th>
<th>p-value</th>
<th>Total N = 1116</th>
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<tbody>
<tr>
<td>Sex, n(%)</td>
<td></td>
<td></td>
<td>.034</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>42 (25.6)</td>
<td>324 (34.0)</td>
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<td>366 (32.8)</td>
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<td>Female</td>
<td>122 (74.4)</td>
<td>628 (66.0)</td>
<td></td>
<td>750 (67.2)</td>
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<td>Age, years (mean ± SD)</td>
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<td>70.3 ± 6.7</td>
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<td>Education, years (mean ± SD)</td>
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<td>10.9 ± 4.5</td>
</tr>
<tr>
<td>Education level, n(%)</td>
<td></td>
<td></td>
<td>.001</td>
<td></td>
</tr>
<tr>
<td>No formal education</td>
<td>12 (7.3)</td>
<td>30 (3.2)</td>
<td></td>
<td>42 (3.8)</td>
</tr>
<tr>
<td>Elementary</td>
<td>49 (29.9)</td>
<td>164 (17.2)</td>
<td></td>
<td>213 (19.1)</td>
</tr>
<tr>
<td>Middle/High</td>
<td>67 (40.9)</td>
<td>434 (45.6)</td>
<td></td>
<td>501 (44.9)</td>
</tr>
<tr>
<td>College</td>
<td>35 (21.3)</td>
<td>319 (33.5)</td>
<td></td>
<td>354 (31.8)</td>
</tr>
<tr>
<td>Residency in USA, years (mean ± SD)</td>
<td>23.8 ± 9.6</td>
<td>26.0 ± 10.6</td>
<td>.014</td>
<td>25.6 ± 10.4</td>
</tr>
<tr>
<td>Living arrangement, n(%)</td>
<td></td>
<td></td>
<td>.002</td>
<td></td>
</tr>
<tr>
<td>Alone</td>
<td>53 (32.7)</td>
<td>189 (19.9)</td>
<td></td>
<td>242 (21.8)</td>
</tr>
<tr>
<td>With spouse</td>
<td>69 (42.6)</td>
<td>528 (55.7)</td>
<td></td>
<td>597 (53.8)</td>
</tr>
<tr>
<td>With children</td>
<td>26 (16.0)</td>
<td>150 (15.8)</td>
<td></td>
<td>176 (15.9)</td>
</tr>
<tr>
<td>With others</td>
<td>14 (8.6)</td>
<td>81 (8.5)</td>
<td></td>
<td>95 (8.6)</td>
</tr>
<tr>
<td>PHQ-9K score (mean ± SD)</td>
<td>9.8 ± 5.7</td>
<td>2.8 ± 3.1</td>
<td>.001</td>
<td>3.9 ± 4.4</td>
</tr>
<tr>
<td>Major Depressive Syndrome, n(%)</td>
<td>42 (25.6)</td>
<td>9 (0.9)</td>
<td>.001</td>
<td>51 (4.6)</td>
</tr>
<tr>
<td>Minor Depressive Syndrome, n(%)</td>
<td>17 (10.4)</td>
<td>41 (4.3)</td>
<td>.001</td>
<td>58 (5.2)</td>
</tr>
<tr>
<td>Self-rating of Mental Health (mean ± SD)</td>
<td>3.0 ± 0.9</td>
<td>2.3 ± 0.8</td>
<td>.001</td>
<td>2.4 ± 0.8</td>
</tr>
<tr>
<td>Excellent (1), n(%)</td>
<td>7 (4.4)</td>
<td>149 (16.1)</td>
<td>.001</td>
<td>156 (14.4)</td>
</tr>
<tr>
<td>Good (2), n(%)</td>
<td>35 (22.0)</td>
<td>406 (43.9)</td>
<td></td>
<td>441 (40.7)</td>
</tr>
<tr>
<td>Fair (3), n(%)</td>
<td>65 (40.9)</td>
<td>321 (34.7)</td>
<td></td>
<td>386 (35.6)</td>
</tr>
<tr>
<td>Poor (4), n(%)</td>
<td>52 (32.7)</td>
<td>48 (5.2)</td>
<td></td>
<td>100 (9.2)</td>
</tr>
<tr>
<td>Self-rating of Physical Health (mean ± SD)</td>
<td>3.1 ± 0.9</td>
<td>2.5 ± 0.9</td>
<td>.001</td>
<td>2.6 ± 0.9</td>
</tr>
<tr>
<td>Excellent (1), n(%)</td>
<td>9 (5.7)</td>
<td>104 (11.3)</td>
<td>.001</td>
<td>113 (10.4)</td>
</tr>
<tr>
<td>Good (2), n(%)</td>
<td>30 (18.9)</td>
<td>346 (37.4)</td>
<td></td>
<td>376 (34.7)</td>
</tr>
<tr>
<td>Fair (3), n(%)</td>
<td>57 (35.8)</td>
<td>354 (38.3)</td>
<td></td>
<td>411 (38.0)</td>
</tr>
<tr>
<td>Poor (4), n(%)</td>
<td>62 (39.0)</td>
<td>120 (13.0)</td>
<td></td>
<td>182 (16.8)</td>
</tr>
</tbody>
</table>
In addition, sociodemographic characteristics, mini-mental state examination (MMSE-KC), self-rated mental health (SRMH), and self-rated physical health status were obtained.

Results: 14.7% (n = 164) of KAE endorsed TDSI (Table 1). Correlates of TDSI included living alone, shorter duration of residency in US, major depressive syndrome (MDS) (diagnosed by PHQ-9K), and poorer SRMH status (Table 2). 64.0% (n = 105; Figure 1) of those who endorsed TDSI did not meet minor or major depressive syndrome (mMDS), but their SRMH was equally poor as KAE who had MDS without endorsing TDSI.

Conclusions: Given low mental service utilization among KAE and high rate of suicidal ideation, a targeted screening and intervention strategy should be developed to reduce suicide behavior among KAEs.

Table 2. Multivariable logistic regression results for the outcome of suicidal ideation

<table>
<thead>
<tr>
<th>Predictor</th>
<th>OR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Model 1</td>
</tr>
<tr>
<td>Years of US residency (nearest 10 years)</td>
<td>0.80 (0.67–0.96)</td>
</tr>
<tr>
<td>Living alone</td>
<td>1.68 (1.04–2.70)</td>
</tr>
<tr>
<td>PHQ-9 MmDS</td>
<td>3.60 (2.59–5.01)</td>
</tr>
<tr>
<td>Self-rated Mental Health</td>
<td>2.19 (1.69–2.84)</td>
</tr>
</tbody>
</table>

Model 1: adjusted for demographic factors (age, gender, education level, and total MMSE scores)
Model 2: adjusted for health factors (number of chronic medical conditions/prescription drugs, and self-rated physical health)
Model 3: adjusted for pertinent demographic and health factors (age, gender, educational level, total MMSE scores, number of chronic medical conditions/prescription drugs, and self-rated physical health)
All variables p < .05
Bipolar Patients with Vascular Risk Display a Steeper Age-Related Negative Slope in Inhibitory Performance

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2San Diego State University, San Diego, CA
3Veterans Affairs Healthcare System, San Diego, CA

Introduction: Recent evidence has suggested the possibility of a more rapid cognitive decline among aging patients with bipolar disorder (BD). Older adults with BD demonstrate greater deficits in memory, executive function and processing speed compared to older comparison participants. However, only a few studies have demonstrated a steeper age-related slope in cognitive performance in BD compared to healthy control (HC) participants. Given that BD is also characterized by a heterogeneous presentation of medical co-morbidities, it is possible that a sub-group of BD patients are at higher risk to develop greater cognitive problems as they age. In particular, poorer vascular health has been linked to worse memory performance, but less is known about the relationship between vascular risk and inhibitory control. The objective of this study was to investigate the role of vascular burden on age-related changes in inhibitory performance in a cross-sectional study of BD and HC participants.

Methods: 34 euthymic BD and 41 HC individuals participated in this study. All subjects were administered the Color Word interference subtest of the Delis-Kaplan Executive Function System (D-KEFS) battery and a full medical history was obtained based on patient self-report and available medical records. Vascular risk positive (VRPOS; 17 BD and 13 HC) and vascular risk negative (VRNEG; 17 BD and 28 HC) groups were created based on the presence of one or more vascular risk factors for each individual. Diagnostic group (DG), age, vascular risk group (VRG), DG x age interaction and DG x Age x VRG 3-way interaction were examined as predictors of inhibitory performance.

Results: BD and HC participants did not differ in age, gender, education or vascular group status. The main effects of age (t = 3.47, p = 0.001) and VRG (t = -3.0; p = 0.004) were significant, indicating that older age and the possession of vascular risk factors predicted worse inhibitory performance. In this euthymic BD sample as a whole, inhibitory performance was not significantly impaired (DG main effect, t = 1.09, p = 0.28). The DG x age interaction was marginally significant (t = -1.84; p = 0.07). Importantly, there was a significant 3-way DG x age x VRG interaction (t = 2.86; p = 0.006). Post-hoc analyses revealed that a DG x age interaction was significant in the VRPOS group only (t = -2.29; p = 0.03), such that VRPOS-BD participants demonstrated significantly worse inhibitory performance with older age (r = 0.60; p = .01) while age and inhibition ability were not related in the VRPOS-HC group or in those who were VRNEG. Psychotropic medication load was not related to age or inhibitory performance in the BD sample.

Conclusions: The results of this study confirm previous reports of worse inhibition with age and extend this finding to implicate vascular risk as a predictor of inhibitory impairment. Further, a significant age-related negative slope in inhibition was observed only among BD participants in this sample who possessed one or more vascular risk factors, suggesting that this sub-group of BD patients is at a higher risk for greater cognitive decline with age. Future longitudinal studies are needed to further investigate the contributions of vascular risk to cognitive decline among older BD patients, and perhaps suggest avenues for preventing such decline.
Characterization of Olfactory Identification Deficit in Aging Vs. Alzheimer’s Disease
Matthew R. Woodward, MSc, MS-3,1 Muhammad Ubaid Hafeez, MD2; Muhammad U. Khan, MD3; Jepsen Hagemeier, PhD2; Li Yan, PhD2; Qianya Qi, MSc2; Kinga Szigeti, MD, PhD2

1Touro College of Osteopathic Medicine, New York, NY
2SUNY University at Buffalo, Buffalo, NY

Introduction: Olfactory Identification Deficit (OID) has been implicated in MCI and AD; as a biomarker it has ROC/AUC of 0.82 in identifying an amnestic disorder and has predicts conversion from MCI to AD within 2 years. Poor performance on the UPSIT is associated with microstructural white matter changes and decreased right hippocampal volume. While the utility of a brief smell test has been demonstrated in numerous studies, there is a significant relationship between olfactory identification and age which potentially confounds results. The objective of this analysis was to isolate specific scents most sensitive to aging in contrast to disease.

Methods: 855 participants (242 normal controls (NC), 206 mild cognitive impairment (MCI), 441 Alzheimer’s disease (AD)) were included in this analysis. Subjects completed a 40-item and 10-item University of Pennsylvania Smell Identification Test (UPSIT) and a neuropsychological test battery. A subset of 90 subjects (29 NC, 19 MCI, 42 AD) underwent 3T MRI for DTI and volumetric analysis. A logistic regression was conducted to identify scents most strongly associated with age and disease status (N = 855). The scores for the top 10 smells for age and disease were plotted in the context of age for the NC and AD subjects (N = 683). The correlation between performance on the ‘age’ and ‘disease’ subsets of the UPSIT and MRI normalized global brain (FSL SIENAX) and tissue specific structural volumes (FSL FIRST), DTI (FSL whole brain FA, MD, λ1D, λ2,3D), and neuropsychological measures were explored using a Spearman’s Rank Correlation Coefficient Test.

Results: Ten scents most highly associated with age and with disease were identified. These top 10 item subsets for age and disease were used to calculate OID scores for disease associated subset and age associated subset. The distance between disease and control groups was 3.93 (3.61–4.24) when applying the disease associated smells to calculate OID, in contrast to the OID calculated based on the top 10 age associated smells; mean 3.02 (2.7–3.32). The separation of the disease group and age group curves was superior all through the age spectrum based on 50000. There is only one overlapping scent between the top ten smells for age and disease. Neuropsychological measures and structural MRI characteristics of the groups are presented.

Conclusions: As is the case with most biomarkers of AD, OID also correlates with age, which is not surprising in a disease that is superimposed on normal aging. Olfactory deficit appears to affect distinct scents in disease and aging. Further studies are needed to elucidate the potential mechanisms causing OID is aging and AD with the goal to isolate the OID that is disease specific thus improving its performance as a biomarker of AD.

This research was funded by: NIA K23 AG036852.

Longitudinal Cognitive Outcomes in Late-Life Depression: Effects of Achieving Antidepressant Remission
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1Vanderbilt University Medical Center, Nashville, TN
2Duke University Medical Center, Durham, NC
3University of Connecticut Health Center, Farmington, CT
4Department of Veterans Affairs, Tennessee Valley Healthcare System, Nashville, TN

Introduction: Cognitive impairment is common in late-life depression and a critical outcome of the illness. Cognitive deficits are well-established predictors of poor response to antidepressants and such deficits often persist even with successful treatment. Depression is further associated with increased risk of dementia, but it is unclear whether this risk differs based on the clinical response to antidepressant treatment. In other words, do antidepressant remitters represent a phenotype that is at lower risk for cognitive decline? In this longitudinal study, we hypothesized that depressed elders achieving remission at key clinical milestones would have less change in neuropsychological measures over time than those with poorer clinical responses.

Methods: The sample consisted of 437 nondemented individuals, including 237 depressed and 164 never-depressed adults age 60 years or older, with an average study participation of 68 months. While receiving algorithm-guided antidepressant treatment, participants completed neuropsychological testing annually. Following our previous strategy, we created z-scores for
Clinical Profile of Patients with Mild or No Cognitive Impairment Who Receive Prescriptions for Cholinesterase Inhibitors and/or Memantine: A Descriptive Study From the Caregiver Resources, Education and Support (CREST) Program
Romika Dhar, MD; Amy B. Adam, MS, MPhilEd; Joel E. Streim, MD; David W. Oslin, MD

Introduction: There are no drugs currently approved by the FDA to treat mild cognitive impairment (MCI), and available drugs have not shown any impact on rates of conversion to dementia. Among elders with subjective cognitive complaints (SCC) in the absence of objective measures of MCI, there are no established predictors of subsequent development of MCI or dementia, and no available drugs that prevent these conditions. Nevertheless, many elders receive prescriptions for cholinesterase inhibitors or memantine in the absence of a dementia diagnosis. In this study, we describe the clinical profile of a sample of patients in a caregiver support program who were prescribed cholinesterase inhibitors and/or memantine and who had mild or no cognitive impairment on objective testing.

Methods: In 2008, the Pennsylvania Department of Aging’s Pharmaceutical Assistance Contract for the Elderly (PACE) partnered with The University of Pennsylvania Behavioral Health Lab (BHL) to provide telephone-based assessment and care management services for PACE beneficiaries receiving prescriptions for psychotropic medications. The Caregiver Resources, Education and Support (CREST) program was established in 2014 as part of this state-university collaboration to provide education, support and services to PACE beneficiaries and caregivers who have filled a prescription for medications that are

Results: After controlling for covariates, initial analyses demonstrated that compared with the nondepressed group, the depressed group exhibited significantly greater decline in performance over time in all cognitive domains, including episodic memory ($F = 20.00, p < 0.0001$), working memory ($F = 20.27, p < 0.0001$), and executive speed ($F = 12.02, p = 0.0005$). Longitudinal analyses of 3-month status included 77 remitted and 193 nonremitted depressed elders, demonstrating significant differences between diagnostic groups in cognitive domain performance over time (episodic memory: $F = 10.84, p < 0.0001$; working memory: $F = 10.90, p < 0.0001$; executive speed: $F = 5.95, p = 0.0027$). For all cognitive domains there were no significant differences in rate of change between the 3-month remitted and nonremitted groups, and both exhibited greater decline in performance than the nondepressed group. Finally, analyses of 12-month status included 128 remitted and 145 nonremitted depressed elders. We continued to observe significant group differences in domain performance over time (episodic memory: $F = 10.05, p < 0.0001$; working memory: $F = 10.22, p < 0.0001$; executive speed: $F = 9.04, p = 0.0001$). For episodic and working memory, there were no significant differences between 12-month remitters and nonremitters, and both depressed groups exhibited greater decline than did the nondepressed group. However, for executive speed, the nonremitted group exhibited a greater decline in performance than the remitted or nondepressed groups, between which there was no significant difference in change over time.

Conclusions: These data demonstrate that, when compared with never-depressed subjects, older adults with depression exhibit greater cognitive decline over time. Contrary to our initial hypothesis, this decline is unrelated to clinical antidepressant response, except for executive speed where individuals who remit to chronic antidepressant administration exhibit rates of change comparable to never-depressed subjects. In other words, individuals who achieve clinical remission continue to exhibit an increased rate of cognitive decline. These findings are concordant with past work associating depression with increased risk of dementia, however they also underscore the lack of understanding of the neurobiological factors underlying this relationship. More work is needed to elucidate this relationship and, as antidepressant treatment does not appear to modify the risk of cognitive decline, identify treatment strategies to preserve cognitive function in this at-risk population.

This research was funded by: Grant support: R21 MH099218 R01 MH102246 R01 MH054846.
Antidepressive Treatments for Parkinson’s Disease: A Systematic Review and Meta-Analysis

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1Department of Psychiatry, University of Maryland, Baltimore, MD
2Department of Psychiatry, New York University School of Medicine, New York, NY

Introduction: Depression affects 50 to 70% of Parkinson’s disease patients resulting in significant comorbidity, executive dysfunction, and poorer quality of life. Different modalities have resulted in variable results precluding distinct recommendations for treatment. Our objective is to perform a systematic review and meta-analysis of published randomized controlled trials (RCTs) evaluating the efficacy of behavioral, pharmacologic, and repetitive transcranial magnetic stimulation (rTMS) for depression in idiopathic Parkinson’s disease.

Methods: The following databases were searched: PubMed, CINAHL, EMBASE, and PsycInfo, as well as the trials registrars, ClinicalTrials.gov and the Cochrane Central Register. Bibliographies of relevant articles were also cross-referenced. This review included RCTs that compared pharmacologic, behavioral, or rTMS with a placebo or with other drugs or methods with no restrictions on participant age, gender, and duration or setting of treatment. Eligibility assessment was performed independently in an unblinded standardized manner. Identified records were sequentially screened according to eligibility criteria with full texts subsequently reviewed. Disagreement after full text review was resolved by consensus and a third reviewer. Differences in mean depression score and 95% confidence intervals were calculated.
**Results:** A total of 893 idiopathic Parkinson’s disease patients with clinical depression across 20 RCTs were included in the analysis. The overall standard mean difference for all pharmacologic interventions was 0.30 (95% CI -0.00, 0.61, p = 0.054). On stratification of pharmacologic treatments, however, there was a distinct difference in effect between antidepressants, specifically SSRIs and TCAs (SMD of 0.54 (95% CI 0.24, 0.83, p = 0.000), and non-antidepressant medications SMD of -0.29 (95% CI -0.86, 0.29, p = 0.328). Behavioral interventions demonstrated significant efficacy with an effect size of 0.86 (95% CI 0.4, 1.32, p = 0.000), with CBT contributing the largest effect.

**Conclusions:** Both antidepressants, specifically SSRIs, and behavioral interventions, specifically CBT, significantly improved depression among Parkinson’s disease patients. rTMS is also a promising form of treatment.

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**Variation by Social Support in the Risk for Depression Following a Heart Attack or Stroke: Preliminary Findings From the National Health and Aging Trends Study**

Adam Simning, MD, PhD; Christopher L. Seplaki, PhD; Yeates Conwell, MD

*University of Rochester, Rochester, NY*

**Introduction:** Although the association of depression with heart attacks and strokes is well characterized, we know relatively little about how social support may modify this risk. We hypothesize that a heart attack or stroke will place older adults with a low level of social support at greater risk of developing depression compared to older adults with a high level of support.

**Methods:** The National Health and Aging Trends Study (NHATS) is a longitudinal study initiated in 2011 to examine the functional status, health, social support, and well-being of Medicare beneficiaries aged 65 years and older and living in the United States. In our study, we used the baseline and one year follow-up interview data. Depression was assessed with the PHQ-2, with scores of 3 or higher indicating the presence of clinically significant depression. Social support was assessed with this question: Looking back over the last year, who are the people you talked with most often about important things? The total number of social contacts ranged from 0 to 5. For our analyses, we stratified 5,643 participants by low (0 contacts), medium (1–4 contacts), and high (5 contacts) levels of social support. At the follow-up interview, participants were queried about whether they had experienced a heart attack or stroke since they were last interviewed.

**Results:** A total of 297 older adults reported experiencing either a heart attack or a stroke in the interval year between the baseline and follow-up interviews. In unadjusted logistic regression analyses, the occurrence of a heart attack or stroke in those with low and medium levels of social support was associated with an elevated risk for depression at follow up (low support: odds ratio, OR = 4.87, 95% confidence interval, CI: 1.91–12.45; medium support: OR = 2.49, 95% CI: 1.84–3.38), but not for those with a high level of support (OR = 1.19, 95% CI: 0.31–4.63). In multivariable logistic regression analyses that accounted for baseline depression, age, gender, race and ethnicity, and education, the elevated risk for depression following a heart attack or stroke persisted in those with a low (OR = 4.63, 95% CI = 1.78–12.04) and medium (OR = 2.23, 95% CI = 1.63–3.05) level of support and remained unchanged in those with a high level of support (OR = 0.68; 95% CI = 0.12–3.99).

**Conclusions:** Depression is a common sequela of major medical illnesses such as heart attacks and strokes and, when it develops, illness outcomes are demonstrably worse, including subsequent mortality. Our analyses of these Medicare beneficiaries aged 65 years and older suggest that the risk of developing depression following a heart attack or stroke may be highly contingent upon the level of social support the older adult has at baseline. Social support is a modifiable factor that may mitigate the impact of illness on depression, and increased social support could thereby improve outcomes in people with heart attacks and stroke. Our results suggest that addressing social support deficits in people who have recently experienced these conditions may reduce incident depression and, potentially, illness related morbidity and mortality.

**The Association of Baseline Suicidality with Treatment Outcome in Psychotic Depression**

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1University of Toronto, Toronto, ON, Canada
2University Health Network, Toronto, ON, Canada
3Weill Cornell Medical College, New York, NY
4Centre for Addiction and Mental Health, Toronto, ON, Canada
Introduction: There is limited literature on the association of baseline suicidality with treatment outcome of major depression. The findings of naturalistic studies and studies of ‘open-label’ treatment have been inconsistent, with some studies finding that baseline suicidality is associated with poorer outcome of major depression, whilst other studies did not find an association. Given the limitations of these observational data, we analyzed data from a randomized controlled trial (RCT) of the acute pharmacotherapy of psychotic depression (STOP-PD) to examine the association between suicidality and treatment outcome of major depression. STOP-PD is unique in that subjects were recruited from across the adult lifespan (with more than half the group aged 60 years or older), there was a high frequency of suicide attempts in the index episode, and the study design allowed an analysis of the interaction between suicidality, sertraline and placebo on treatment outcome. We hypothesized that no suicidality at baseline would be associated with better outcome in adults receiving pharmacotherapy for an episode of psychotic depression, compared with persons with suicidality. An exploratory aim was to investigate the interaction between suicidality and randomized treatment assignment with depression outcome.

Methods: This report is based on a secondary analysis of data from a 12-week RCT comparing olanzapine plus sertraline (‘combination therapy’) with olanzapine plus placebo (‘monotherapy’) in the treatment of major depression with psychotic features in persons aged 18 years and older (n = 117 aged 18–59 and n = 142 aged 60 years or older). Baseline suicidality was defined by a 4-item ordinal variable (suicide attempt in the index episode, active suicidal ideation at baseline, passive suicidal ideation at baseline, and no suicidality) based on data from the SCID suicide item and the Beck Scale of Suicidal Ideation. We performed a series of mixed effects models to analyze the effect of baseline suicidality on progression over time of modified HAM-D scores (that excluded the HAM-D suicide item) and progression over time of remission of psychotic depression. The models examined for i) suicidality x time and ii) suicidality x treatment x time interactions, controlling for pertinent covariates that included age.

Results: Suicidality groups did not significantly differ on modified HAM-D scores at baseline. Age was not significantly associated with treatment outcome, as defined by either modified HAM-D scores or remission. The baseline suicidality variable was significantly associated with progression over time of modified HAM-D scores in the sample as a whole (F = 7.73; df = 3,1412; p < 0.0001), but it was not significantly associated with the probability of remission over time in the whole sample (F = 2.36; df = 3,1395; p < 0.08). However, when dichotomizing suicidality into ‘no suicidality’ versus ‘any suicidality’, it was associated with probability of remission over time (F = 4.31; df = 1,1399; p < 0.04). In all analyses, persons without suicidality had a better outcome. With respect to treatment, there was a significant interaction between suicidality, assigned treatment, and modified HAM-D score outcome (F = 5.19; df = 3,1412; p < 0.002). Specifically, among participants receiving monotherapy, persons with no suicidality at baseline had a significantly greater reduction in modified HAM-D scores than each of the three suicidality groups. There was no significant treatment effect on change in HAM-D scores in the no suicidality group, but combination therapy was associated with greater reduction in HAM-D scores in each of the three suicidality group compared with monotherapy. Among participants receiving monotherapy, the weekly increase in odds of remission was significantly higher for participants with no suicidality than in those with any suicidality (3.98, 95% CI: 3.01–5.25, p < 0.0001). No suicidality versus suicidality was not, however, significantly different in the rate of odds of remission between treatment arms.

Conclusions: The primary finding of this analysis is that younger and older participants with psychotic depression with no suicidality at baseline had a more favorable treatment outcome than those who experienced any level of suicidality. This finding is not explained by baseline depression severity. Furthermore, participants with any level of suicidality had greater improvement in modified HAM-D scores with combination therapy than with monotherapy. By contrast, participants with no suicidality did equally well in both treatment arms. Our findings will be discussed in the context of the literature, and reasons for the possible moderating effect of sertraline on outcome in persons with suicidality will be explored.

This research was funded by: The STOP-PD clinical trial was funded by USPHS grants MH 62446, MH 62518, MH 62565, and MH 62624 from the National Institute of Mental Health. Eli-Lilly did not provide funding for this study but provided olanzapine; Pfizer did not provide funding for this study but provided sertraline and matching placebo pills.

Poster Number: EI 40
The Association between Caregiver-Care Recipient Relationship and Caregiver Burden and Depressive Symptoms among Community-Dwelling Older Adults with Dementia
Erica Smolcic, MD; Shahrzad Mavandadi, PhD; Joel E. Streim, MD; David W. Oslin, MD

1University of Pennsylvania, Philadelphia, PA
2Philadelphia VA Medical Center, Philadelphia, PA
Introduction: Monitoring and addressing caregiver distress is a vital component of the management of patients with neurodegenerative disorders. Previous studies investigating caregiver burden and distress of patients enrolled in controlled trials have shown that the relationship of the caregiver with the patient modulates how burden and distress are perceived. Adult children who are caregivers generally experience greater burden yet lesser depressive symptoms than spouse caregivers of elders with dementia. Although the greatest proportion of caregivers are adult children of patients, most randomized clinical trials for dementia patients include dyads of patient and spouse. In addition, few studies have specifically looked at other caregivers, such as extended family members (siblings, in-laws, grandchildren) or paid caregivers. Given the importance of assessing the needs of the caregiver as well as the patient, we sought to assess the interaction between caregiver type and caregiver burden and depressive symptoms in a low-income community-based sample.

Methods: 580 patient-caregiver dyads were identified from a sample of enrollees in the Pennsylvania Department of Aging’s Pharmaceutical Assistance Contract for the Elderly (PACE) program. All patients were 65 years and older, community-dwelling, and receiving prescriptions for psychotropic medications (antidepressant, anxiolytic, or antipsychotic). Caregivers of older adults with dementia completed the Patient Health Questionnaire-2 (PHQ-2; a brief depression symptom severity screen) as well as the Zarit Burden interview (four questions assessing for caregiver burden). A series of bivariate and adjusted, multiple regression models were run to examine the associations among caregiver-care recipient relationship type and burden and depressive symptoms.

Results: The mean age of caregivers was 66 (±40.6) years old. The majority of the sample was female (73.4%), non-hispanic white (91.2%), living in the same household as the care recipient (64.8%), and reported spending twenty or more hours per week caregiving (58.4%). Regarding financial status, 13.6% (79) of caregivers reported they “could not make ends meet,” 46.7% (271) of caregivers reported having “just enough to get along,” and 36.4% (211) reported being “comfortable.” 28.4% (165) of caregivers were spouses, 59% (342) were children, and 12.6% (73) were categorized as “other.” 29.7% (172) of patients were prescribed an antidepressant at intake, 48.8% (283) were prescribed an antipsychotic, and 21.6% (125) were prescribed an anxiolytic. Patients needed assistance with a mean number of 5.4 (±2.5) IADLs. Caregivers had a mean Zarit caregiver burden score of 5.3 (±4.2) and PHQ 2 score of 1.1 (±1.6). Adjusting for age, gender, ethnicity, financial status, living in the same household, number of hours of care provided per week, care recipient functional limitations, and severity of neuropsychiatric symptoms, children reported significantly more burden than other CGs (b = 1.63 (SE = 0.47), p = 0.001). Conversely, spouses reported significantly greater depressive symptom severity than child (b = 0.51 (SE = 0.21), p = 0.01) and other CGs (b = 0.86 (SE = 0.26), p = 0.001), adjusting for all other variables.

Conclusions: Our data showed that caregiver relationship in a low-income community-based sample modulates caregiver depressive symptoms and caregiver burden in a pattern comparable to previous studies of caregivers in randomized controlled trials. Despite high levels of financial burden in the sample, the relationship of the patient to the caregiver was a significant predictor of caregiver burden and depressive symptoms, even when adjusting for covariates. There are important implications for the clinical management of both patients and caregivers. Adult children caring for parents with dementia are more likely to experience greater caregiver burden, likely associated with the role reversal of parent and child: this suggests a need to assess frequently for caregiver burnout and offer appropriate supports and connection to services. However, caregivers of a spouse with dementia are more likely to report depressive symptoms, understandably with the loss of the spousal relationship; this points to a need to monitor for depression and provide supports and mental health treatment when indicated.

This research was funded by: Commonwealth of Pennsylvania, Department of Aging, PACE Program, PACE/PACENET.

Poster Number: EI 41

APOE Polymorphism and Chronic Inflammation-Modyfiers of Cognitive Functioning in Post-Menopausal Women

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Introduction: The initiation and development of both cardiovascular as well as cognitive disorders is believed to be partly linked to inflammation. Specifically, C-reactive protein (CRP), a marker of chronic inflammation, has been associated with numerous clinical conditions, including cognitive decline. Whether CRP directly causes cognitive decline in the brain is not
Immunological Markers Associated with Brain Health and Treatment Response in Late-Life Depression: Pilot Study

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Introduction: Immunological changes may have a role conferring the poor brain health outcomes of late-life depression including dementia and disability. We examined whether candidate immunological blood biomarkers related to measures of brain health, namely brain structure pathology and executive function deficits. Further, particular immunological markers have been associated with treatment response, thus raising the possibility that immunological markers link depression to both poor brain health and treatment outcomes. We therefore evaluated relationships between candidate immunological measures with brain health among older adults with major depressive disorder, and also assessed whether the level or changes in these peripheral measures differ based on response to 12 weeks of open-label venlafaxine XR treatment.

Methods: Thirty-three adult participants ≥60 years with major depressive disorder were treated in a specialty care setting. Multiplex immunoassay was used to assay 13 peripheral markers in plasma obtained at baseline, week 4, and week 12. Participants also contributed structural MRI data at baseline. We assessed cross-sectional associations between peripheral measures with aspects of brain health including executive function (Color-Word Interference and Trail-Making tests) and MRI-measures of brain structure (grey matter volume (GMV) and white matter hyperintensity volume (WMH)). We also examined whether peripheral marker levels changed over 12 weeks of treatment, and whether the level or rate of change in peripheral measures were associated with treatment response (defined as ≥50% depressive symptom reduction).

Results: Vascular endothelial growth factor (VEGF) and eotaxin had significant negative correlations with GMV (VEGF: n = 31, r = -0.42; eotaxin: n = 29, r = -0.43), while tumor necrosis factor alpha (TNF-α) was strongly and significantly correlated with WMH volume (n = 30, r = 0.62). Only eotaxin was associated with executive function (on the Trail-making test: n = 33, r = -0.39). Longitudinally (n = 29), TNF-α and interleukin-10 increased over time. Treatment non-response was associated with higher interleukin-6 and interleukin-2.
Conclusions: Multiple immunological markers correlated with brain health and treatment response in our sample. However, the specific immunological correlates of GMV, WMH, set-shifting, and treatment response differed. Eotaxin correlated with both GMV and set-shifting performance and may be particularly relevant to neurodegeneration and dementia in late-life depression. Our findings highlight the complex, multi-factorial nature of blood-brain relations, and provide evidence from which to target future investigations of peripheral biomarkers as they pertain to the course and consequences of late-life depression. Longitudinal research should target these identified markers to clarify their potential roles conferring depression-related brain health consequences.

This research was funded by: Supported by the three R01s at Pittsburgh (R01 MH083660), Washington University in St. Louis (R01 MH083648), and the Center for Addiction and Mental Health, Toronto (R01 MH 083643), Center Core grant P30 MH90333, and the UPMC Endowment in Geriatric Psychiatry. The imaging study was supported by R01 MH076079. SFS has been supported by Research Training grant T32 MH019986. EL was supported by the Taylor Family Institute for Innovative Psychiatric Research.

Poster Number: EI 43

The Relationship between Perceived Stress and Mental Health in Older Adults Affected by Superstorm Sandy
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Introduction: Previous research on the effects of natural disasters on older adults show that this population is particularly vulnerable in terms of injury, mortality, and perceived loss. It is thus important to further our understanding of how older adults in particular are affected by natural disasters. The purpose of the current study was to investigate the relationships between the impact of Superstorm Sandy, perceived stress due to the storm, symptoms of depression in older adults residing in New York City.

Methods: The Sandy Mobilization, Assessment, Referral, and Treatment for Mental Health (SMART-MH) project is a partnership between Weill Cornell Medicine and the New York City Department for the Aging (DFTA) with the goal of connecting older adults in communities affected by Sandy with mental health treatment and social services. In terms of which communities in New York City were selected for recruitment, 23 designated flood zones with high numbers of older adults were chosen. The participants were recruited via outreach activities at senior centers, faith-based organizations, and community organizations. Senior center attendees were asked if they would like to complete an assessment in which they would be asked questions pertaining to their mental health and social service needs. As of September 2015, the sample consisted of 1553 older adults with a mean age of 74.7 (SD = 8.7). The sample was racially and ethnically diverse, with over half of the sample (56.8%) self-identifying as black, Hispanic, Asian, multiracial, Native American, or “other.” The assessments were conducted in four different languages: English (56.3%), Chinese (33.0%), Spanish (6.2%), and Russian (4.5%). Over half of the sample (56.2%) had a high school diploma/GED or higher and 75.7% were female. Out of the total sample, 220 (14.1%) screened positive for depression. The impact of Sandy was assessed via a checklist of 12 items in response to the prompt “As a result of the storm” and answer choices included items such as “I lost electricity” and “my house/home was damaged or destroyed.” Activity changes due to Sandy were also measured with a checklist: participants were asked if their “usual activities changed in the following ways” and the 8 choices included “I lost access to my usual medical care” and “I had friends and family who were evacuated stay with me.” For both of these measures, summed scores of the total number of items checked were used for analyses. Perceived stress due to the storm was measured with the following question: “Taking everything into consideration, how stressful would you say your experiences with the hurricane and its aftermath have been?” Answer choices were on a 5-point scale ranging from “not at all stressful” to “extremely stressful.” Depression was measured with the Patient Health Questionnaire (PHQ-9) in which participants were asked how often in the past two weeks they experienced 9 different symptoms, including “Little interest or pleasure in doing things” and “Feeling down, depressed, or hopeless” on a 4-point scale ranging from “not at all” to “nearly every day.” A score greater than or equal to 10 was considered clinically significant depression.

Results: Perceived stress due to Sandy was significantly correlated with total number of ways in which they were impacted for both the depressed (r = .45, p < .01) and non-depressed (r = .43, p < .01). Perceived stress was also correlated with the total
number of ways usual activities were changed for both the depressed (r = .44, p < .01) and non-depressed (r = .47, p < .01).
Perceived stress was also correlated with PHQ-9 scores (r = .34, p < .01). A regression model predicting perceived stress showed that clinically significant depression interacted with number of ways individuals were impacted by Sandy (β = -.10, p < .01), indicating that those with clinically significant depression experienced more perceived stress due to fewer hurricane-related effects. The same result was also found in the model predicting perceived stress with number of activity changes whereby those with clinical depression experienced higher stress from fewer activity changes (β = -.10, p < .01).

Conclusions: These results suggest that older adults with clinically significant depression may experience more stress as a result of fewer negative effects of natural disasters. The results of this study could potentially inform citywide disaster preparedness plans that target older adults based on their level of vulnerability to the impacts of natural disasters with the goal of mitigating the stress levels experienced by this population.

Poster Number: EI 44
“Multimorbidities: Age-Related Relationships among Medical Disorders, Psychiatric Disorders, Substance Use Disorders, and Psychotropic Prescriptions in the U.S. Veteran Population”
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Introduction: Multimorbidity is the co-occurrence of multiple chronic illnesses in the same individual (Fortin, Stewart, Poitras, Almirall, & Maddocks, 2012). Since multimorbidity affects more than 50% of people with at least one chronic illness, understanding multimorbidity has been an important area of research in recent years (Tinetti, Fried, & Boyd, 2012). Notably, researchers have found that multimorbidity has been associated with disability, poor quality of life, and high health care utilization (Egede et al., 2015; Fortin et al., 2004; Yoon, Zulman, Scott, & Maciejewski, 2014; Zulman et al., 2015). Multimorbidity is an important topic since it impacts healthcare spending, patient outcomes, and patient experiences with illness. Studies so far have reported that people who are older have increased total numbers of conditions compared to younger age groups (Marengoni et al., 2011). In addition, studies have shown that diagnoses such as diabetes, HIV, and heart disease are linked to depression and other mental illnesses (Boutayeb, Boutayeb, & Boutayeb, 2013; Emerging Risk Factors et al., 2016; Zulman et al., 2015). Many of these studies link comorbidities between individual diagnoses, with few studies identifying large, associative trends for multiple co-occurring medical, psychiatric and/or addictive disorders. Substance use disorders are not typically studied as a separate category of illness. To our knowledge, no study has assessed the associative trends of medical, psychiatric, and substance use disorder multimorbidities in a veteran population, although studies have linked veterans to having higher rates of substance use and post-traumatic stress disorder alongside medical comorbidities (Findley et al., 2011; Steinman et al., 2012; Zulman et al., 2015). Returning veterans have unique risk factors for psychiatric, substance use, and medical illnesses following military exposure, assessing the early and late-life multimorbidity patterns is warranted.

Methods: In this study, encounter claims from a national Veterans Health Administration (VHA) database are used to characterize age-related trends and relationships among 24 medical diagnoses, 10 psychiatric diagnoses, and 8 substance use disorders. In addition, we assessed prescription patterns of commonly used psychiatric medications. The sample includes all outpatients who used the VHA during the fiscal year (FY) 2012 (January 1, 2011–December 31, 2012) which totaled 5.3 million veterans nationally. Demographic and diagnostic data were obtained from encounter claims data, and number of prescriptions filled using the Decision Support System pharmacy file. Measures were obtained from medical diagnoses including the 24 in the Charlson co-morbidity index. Ten psychiatric diagnoses and eight substance use diagnoses were also included. Six classes of psychiatric prescriptions were used. Sociodemographic data used in this study included age, which was categorized as: 40 and below, ages 41–54, ages 55–64, ages 65–74, ages 75–84, and 85 and greater. Multimorbidity was defined as the average number of diagnoses in each of the 3 categories. The mean number of diagnoses per patient on each measure was graphically examined by age group, along with correlation coefficients to assess how strongly these measures of co-morbidity related to one another. In addition, the total number of psychiatric medications per age group was identified, and means were calculated for the average number of prescriptions per age group. Correlation data was also calculated for psychiatric prescriptions as related to substance use disorders, psychiatric disorders, and medical diagnoses. The statistical significances for all identified means and correlational data showed an x < 0.0001.
Results: The total number of medical diagnoses generally increases with age, but the total number of psychiatric and substance use disorders decreases or with age. Figure 1 shows the decreasing trend of substance use and psychiatric diagnoses, with an increase in medical diagnoses until the curve plateaus. We also report an age-related decrease in common psychiatric
medication prescriptions (not shown in figures). Figure 2 shows that the correlation diminishes between psychiatric and substance use disorders as age increases. In addition, the correlational relationship between medical and psychiatric disorders was relatively stable with age increases. These findings show that psychiatric and medical conditions are more closely related than psychiatric and substance use disorders in an aging national veteran population.

**Conclusions:** Through this work, we have identified useful epidemiological and prevalence data about age-related multimorbidities and psychiatric prescribing trends in VHA service users in the United States.
**Introduction:** Pseudobulbar affect (PBA) is characterized by uncontrolled crying and/or laughing which may be disproportionate or inappropriate to the social context. Although, the frequency of PBA in Amyotrophic Lateral Sclerosis (ALS) has been estimated to be as high as 50%, the disorder can be co-morbid with several other neurological conditions including stroke. An estimate of the prevalence of PBA among stroke patients is around 27%. The impact of PBA is substantial for patient and families by adding restrictions to patient’s social interactions and lowering the quality of life. Mental health providers are likely to encounter PBA in stroke patients, considering its complex overlap with mood disorders and potential for misdiagnosis. However, extant literature examining treatment options for PBA in stroke patients is limited.

In this poster, we review evidence-based treatments for PBA, specifically in stroke patients.

**Methods:** A literature search was conducted on Pubmed utilizing the terms “Pseudobulbar Affect and Stroke,” “Pathological Crying and Laughing,” “Emotional Incontinence and Stroke,” “Emotionalism and Stroke,” and “Post-stroke Emotional Lability.” Results yielded 126 articles. Of these, six randomized controlled trials (RCTs) and 8 case reports were relevant to pharmacological treatment options of PBA.

**Results:** Of the six published RCTs, two examined the use of tricyclic antidepressants (TCAs) amitriptyline and nortriptyline; four examined selective serotonin reuptake inhibitors (SSRIs) citalopram, fluoxetine, and sertraline. In all studies, statistical significant improvement was noted in post-stroke PBA symptoms with aforementioned agents. Limitations included small sample size and utilization of disparate patient assessment scales with inconsistent validity. The case reports indicate that PBA may respond to other antidepressants including imipramine, paroxetine, mirtazapine and venlafaxine. One case report suggests possible efficacy with lamotrigine and another suggests role of aripiprazole as an adjuvant to paroxetine. There are currently no RCTs assessing the role of dextromethorphan/quinidine in PBA secondary to stroke.

**Conclusions:** Although up to a third of patients with stroke experience PBA, the only available information on treatment comes from limited studies, which demonstrate efficacy with some TCAs and SSRIs but there is a clear absence of studies evaluating the role of newer generation antidepressants. At this time, there are no RCTs evaluating the role of dextromethorphan/quinidine in PBA secondary to stroke. Thus, there is a clear need for well designed RCTs, with adequate sample size and use of validated scales, to provide evidence based approach to the management of post-stroke PBA and, in turn enhancing care for patients.

This research was funded by: None.

**References**

Introduction: Serotonin selective reuptake inhibitors (SSRIs) have widely replaced older tricyclic antidepressants in the treatment of depression and anxiety over the years given their safer cardiac profile. However, the U.S. Food and Drug Administration (FDA) released a safety communication in 2011–2012 regarding citalopram and escitalopram and their increased risk of QTc prolongation and cardiac outcomes, especially in the elderly and patients with comorbid medical illnesses. This association has never been assessed in a sample of medically-ill inpatients, a highly vulnerable population.

Methods: We performed a retrospective cohort study including 275 adult and elderly medically-ill inpatients randomly-selected out of 923 patients seen at a large tertiary-care consultation-liaison psychiatry service over a 6-year period in Montreal, Canada. Patients were followed from the date they were first assessed by the C-L team to a maximum of 30 days. They were divided into 3 exposure groups: 1) citalopram/escitalopram (C/E), 2) other antidepressants (ADs), or 3) no antidepressants (non-AD). We analyzed the association between antidepressant exposure and adverse cardiac outcomes.

Results: Of the 275 medically-ill inpatients, 89 (32.4%) were exposed to C/E, 74 (26.9%) to other ADs, and 112 (40.7%) to non-AD. Patients were aged 18–99 years (mean 60.9) and 60.6% were female. No adverse cardiac outcomes (ventricular arrhythmias or sudden cardiac deaths) were observed in the C/E group, comparable to results observed in the other groups (C/E 0% vs. other ADs 0% vs. non-AD 4.9%, \( \chi^2(2) = 7.85 \ p = 0.02 \), no significant post-hoc Bonferroni pairwise differences). The incidence of QTc prolongation (C/E 5.3% vs. other ADs 5.3% vs. non-AD 11.1%, \( \chi^2(2) = 0.42 \ p = 0.81 \)), and the mean change in QTc (C/E 2.48 ms vs. other ADs 7.15 ms vs. non-AD 7.89 ms, \( F(2, 45) = 1.25 \ p = 0.30 \)) did not differ between groups. No differences were found between patients using C/E above new FDA-recommended doses and other patients.

Conclusions: Our study suggests that citalopram and escitalopram are not associated with adverse cardiac outcomes in medically-ill inpatients. It seems reasonable for clinicians to cautiously use these SSRIs in this population when the benefits outweigh the risks.

This research was funded by: Soham Rej was supported by the CIHR Fellowship Award.

Poster Number: EI 47

Safety and Tolerability of Leucovorin Augmentation of Antidepressant Therapy in Elderly Psychiatric Inpatients

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Introduction: This pilot study assesses the safety and tolerability of leucovorin antidepressant augmentation in elderly psychiatric in-patients with depression. Leucovorin (folinic acid), a water soluble form of reduced folate that metabolizes to methylfolate, has been reported to be a safe, well-tolerated and effective adjunctive treatment for depression in younger adults. It has not been rigorously studied in the elderly who often suffer from multiple comorbid conditions and are on many medications. Having access to safe, well-tolerated and effective treatments that incur minimal risk are of increased importance in the elderly. This study provided preliminary information as to whether leucovorin was safe and well-tolerated in depressed elderly psychiatric in-patients.

Methods: A retrospective chart review study was performed, reviewing the medical records of patients over 60 years of age who were admitted to the SEMC Geriatric Psychiatry Unit from January 2014 to January 2015. The charts of patients who were diagnosed with a depressive disorder and had received antidepressant augmentation with leucovorin were selected for detailed review for clinical safety and tolerability.

Results: Over 300 charts were reviewed. Seventeen elderly patients with depression who had received antidepressant augmentation with leucovorin calcium 25 mg po daily were identified. The average age of these patients was 76 (60–85) years old. Ten were women and seven were men. All of these patients had no adverse or other side effects from leucovorin. Preliminary review also suggested that no patients experienced an increase in the level of depression or irritability after leucovorin augmentation, and all who received leucovorin antidepressant augmentation had decreased depression severity by the time of discharge. Comparisons of descriptive data listed in Table 1 with similar patients who were admitted at the same time on the unit but who did not receive leucovorin were also made.

Conclusions: In this pilot study with elderly psychiatric inpatients with depression, leucovorin was found to be safe and well tolerated. The researchers are planning additional studies to evaluate if leucovorin augmentation of antidepressant therapy will help to decrease the severity of depression, increase the rate of improvement from a depressed state, improve cognitive and
This research was funded by: Not applicable.

Poster Number: EI 48

Neuroplasticity Deficits and Working Memory Performance in Individuals with Early Alzheimer’s Disease

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Introduction: Deficits in frontal lobe functions including deficits in working memory are common across all stages of Alzheimer’s disease (AD). Working memory has been found to correlate with frontal cortical oscillations in theta and gamma bands and in particular the modulation of gamma amplitude by theta phase (theta-gamma coupling) in healthy individuals. These neurophysiological mechanisms depend upon robust synaptic neuroplasticity. Paired associative stimulation (PAS) involves repetitive pairing of electrical stimulation of the median nerve with transcranial magnetic stimulation (TMS) pulse to contralateral DLPFC. PAS simulates the induction of long-term potentiation, a prototype of synaptic neuroplasticity. Relevance of these measures of neuroplasticity in AD has not been investigated so far.

Methods: Participants with early AD and healthy controls (Mini Mental Status Exam score ≥16) are enrolled in this study. Baseline measurement of neuroplasticity is done using electroencephalography (EEG) during PAS using TMS-EEG. Working memory and theta gamma coupling are assessed using N-back task and simultaneous EEG recording.

Results: Compared with healthy individuals [N = 13(F = 7); Mean Age = 74.8, SD = 4.3; MMSE = 29.3, SD = 0.6] participants with AD [N = 17(F = 6); Mean Age = 75.1, SD = 6.2; MMSE = 23.5, SD = 3.4] have, (1) impaired DLPFC neuroplasticity as measured by PAS induced cortical evoked activity (AD Mean = 1.34, SD = 0.25, HC Mean = 1.56, SD = 0.18). t (26) = 2.89, p = 0.008, (2) impaired performance on the N-back task (AD Mean Percent Correct = 19.9 %, SD = 27.7, HC Mean Percent Correct = 73.3 %, SD = 16.) t (28) = 6.18, p < 0.001, (3) impaired theta-gamma coupling in association with impaired N-back performance (AD Mean MI = 0.0089, SD = 0.001, HC Mean MI = 0.014, SD = 0.003). t (28) = 5.45, p < 0.001.

Conclusions: TMS-EEG can index neuroplasticity deficits in early AD. Theta gamma coupling can serve as a surrogate marker of neuroplasticity and impaired working memory in early AD. These findings can have important clinical implications for management of AD.

This research was funded by: W. Garfield Weston Foundation, Center for Addiction and Mental Health Foundation, Canadian Institute of Health research, Canada Foundation for Innovation.
Introduction: The objective of this study was to characterize the course of neuropsychiatric symptoms (NPS) in adults with mild cognitive impairment (MCI), and to examine baseline individual-level predictors and associated cognitive and functional outcomes.

Methods: This two-year prospective cohort study used data from five hundred and sixty individuals with MCI at baseline across multi-center clinical settings. NPS severity (measured using Neuropsychiatric Inventory Questionnaire) and cognitive and functional outcomes were assessed at baseline and every six months thereafter. Potential individual-level predictors were collected at baseline.

Results: Three latent classes of NPS courses were identified using growth mixture modeling: a stable class in which a low NPS burden remained relatively unchanged over time (n = 503, 89.8%); a worsened class in which an initially moderate NPS burden increased (n = 39, 7.0%); and an improved class in which an initially high NPS burden decreased (n = 18, 3.2%). There were no associations between class membership and baseline individual characteristics. Members of the worsened class were 1.74 times more likely to be diagnosed with incident Alzheimer’s disease (AD) than members of the stable class (95% CI = 1.07–2.84). The worsened class also showed significantly more rapid declines in cognitive and functional outcomes than the stable class. Class membership did not predict rate of brain atrophy.

Conclusions: Patients with MCI may experience different trajectories of NPS over time. Patients with worsening NPS may be at greater risk of developing AD and severe cognitive and functional impairment.

Table 1. Growth Mixture Model Fit Statistics for Different Class Solutions of NPI

<table>
<thead>
<tr>
<th>Model</th>
<th>Latent Class</th>
<th>N</th>
<th>AIC</th>
<th>BIC</th>
<th>Adjusted BIC</th>
<th>Lo-Mendell_Rubin adjusted Likelihood ratio test, $\chi^2$ test (p)</th>
</tr>
</thead>
<tbody>
<tr>
<td>One-class</td>
<td>1</td>
<td>560</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Two-class</td>
<td>1</td>
<td>536 (95.7%)</td>
<td>9619.74</td>
<td>9676.00</td>
<td>9634.73</td>
<td>190.65 (.009)</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>24 (4.3%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Three-class</td>
<td>1</td>
<td>503 (89.8%)</td>
<td>9520.82</td>
<td>9590.07</td>
<td>9539.28</td>
<td>99.66 (.05)</td>
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<tr>
<td></td>
<td>2</td>
<td>39 (7.0%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>18 (3.2%)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Four-class</td>
<td>1</td>
<td>12 (2.1%)</td>
<td></td>
<td></td>
<td></td>
<td>58.37 (.06)</td>
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<tr>
<td></td>
<td>2</td>
<td>498 (88.9%)</td>
<td>9465.38</td>
<td>9547.61</td>
<td>9487.30</td>
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</tr>
<tr>
<td></td>
<td>3</td>
<td>41 (7.3%)</td>
<td></td>
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<tr>
<td></td>
<td>4</td>
<td>9 (1.6%)</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Five-class</td>
<td>1</td>
<td>12 (2.1%)</td>
<td></td>
<td></td>
<td></td>
<td>47.81 (.43)</td>
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<td></td>
<td>2</td>
<td>441 (78.8%)</td>
<td>9421.05</td>
<td>9516.27</td>
<td>9446.43</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>37 (6.6%)</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>4</td>
<td>58 (10.4%)</td>
<td></td>
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<tr>
<td></td>
<td>5</td>
<td>12 (2.1%)</td>
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</tr>
</tbody>
</table>
Table 2. Parameter Estimate (B(SE)) of Health Outcomes over Time by NPI Latent Class using GEE Analysis

<table>
<thead>
<tr>
<th>Variable</th>
<th>Time</th>
<th>Class</th>
<th>Time x Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hippocampal volume</td>
<td>$-183.94 (9.49)^{***}$</td>
<td>Stable 1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Worsened $-269.96 (176.87)$</td>
<td>$-27.96 (29.67)$</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Improved $-44.90 (256.19)$</td>
<td>37.57 (43.27)</td>
</tr>
<tr>
<td>Amygdala volume</td>
<td>$-65.01 (5.59)^{***}$</td>
<td>Stable 1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Worsened $-165.47 (69.16)^{*}$</td>
<td>41.13 (33.26)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Improved $-65.68 (118.70)$</td>
<td>$-1.73 (15.82)$</td>
</tr>
<tr>
<td>Frontal lobe volume</td>
<td>$-1659.55 (145.02)$</td>
<td>Stable 1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Worsened $234.23 (2059.90)$</td>
<td>$-1095.06 (591.14)$</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Improved $-5315.02 (3403.45)$</td>
<td>1081.36 (882.06)</td>
</tr>
<tr>
<td>Memory</td>
<td>$-0.10 (.01)^{***}$</td>
<td>Stable 1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Worsened 0.11 (0.11)</td>
<td>$-0.15 (0.06)^{*}$</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Improved 0.02 (0.13)</td>
<td>0.02 (0.08)</td>
</tr>
<tr>
<td>Executive function</td>
<td>$-0.08 (0.02)^{***}$</td>
<td>Stable 1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Worsened 0.01 (0.13)</td>
<td>$-0.16 (0.07)^{*}$</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Improved $-0.16 (0.25)$</td>
<td>0.01 (0.10)</td>
</tr>
<tr>
<td>MMSE$^+$</td>
<td>0.042 (0.004)$^{***}$</td>
<td>Stable 1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Worsened $-0.10 (0.05)^{*}$</td>
<td>0.09 (0.04)$^{*}$</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Improved $-0.03 (0.03)$</td>
<td>0.02 (0.02)</td>
</tr>
<tr>
<td>CDR-SB$^\dagger$</td>
<td>1.50 (0.13)$^{***}$</td>
<td>Stable 1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Worsened $-0.04 (0.08)$</td>
<td>0.17 (0.04)$^{***}$</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Improved $0.35 (0.14)^{*}$</td>
<td>0.002 (0.08)</td>
</tr>
</tbody>
</table>

Note. Controlled for age, sex, education, and APOE4 carrier; $^+$MMSE was reversed coded and log transformed; $^\dagger$ CDR-SB scores were added 1 and log transformed; for MMSE and CDR-SB, higher score indicating worse cognition; Wald $\chi^2$ test was conducted for hypothesis test. All df = 1. $^*: p < .05$; $^{***}: p < .001$.

Title: Graphical Representation of NPI-Q Scores over Time by the Latent Class.

[Graph showing NPI-Q scores over time for stable, worsened, and improved classes]

Legend: Note: Higher scores of NPI-Q indicated worse NPS.
Title: Longitudinal changes of cognitive and functional outcomes by latent class of Neuropsychiatric Inventory Questionnaire (NPI-Q) scores.

Legend: Note: MMSE was reversed coded and log transformed; CDR-SB was added 1 and then log transformed; higher scores of MMSE and CDR-SB indicated worse function. Memory: the composite score was based on the memory domains of the MMSE, AD Assessment Scale-Cognition subscale (ADAS-Cog), Rey Auditory Verbal Learning Test (RAVLT), and Logical Memory test; EF: the composite executive function index was based on the Wechsler Memory Scale-Revised Digit Span Test, Digit Span Backwards, Category Fluency, Trails A and B, and the Clock Drawing Test.

This research was funded by: The project was partially supported by the National Institutes of Health, Grant R25 MH071544/MH/NIMH (PI: Dilip V. Jeste, M.D.) and the University of California, San Diego, Stein Institute for Research on Aging. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.

Poster Number: EI 50
A Qualitative Study Exploring the Impact of a Community Choir Intervention on Mood in Diverse Older Adults with Depressive Symptoms
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**Introduction:** The United States is experiencing a rapid increase in the number of older adults and consequently an increase in number of older adults from diverse racial/ethnic and socioeconomic status (SES) backgrounds. World Health Organization has recognized depression as one of the most burdensome diseases in the world, affecting 350 million people worldwide. Studies have shown benefits of music listening and singing for people with mental illness. The Community of Voices (COV) study is a cluster-randomized trial examining the effect of a community choir intervention on physical, cognitive and psychosocial aspects of health and well-being in a large group of racially/ethnically diverse older adults. The objective of this qualitative study was to explore the effect of participation in the choir intervention on the mood and emotional well-being of diverse older adults who reported clinically significant depressive symptoms at baseline.

**Methods:** For the parent study, older adults were recruited from 12 Administration on Aging (AoA) senior centers in San Francisco. Ninety-minute choir rehearsals, led by professional choir directors, took place weekly at senior centers for 44 sessions. The choir repertoire was culturally tailored for each senior center. Inclusion criteria for the parent study included being 60 years old or higher, having adequate visual and hearing acuity and adequate fluency in English or Spanish. Exclusion criteria included having dementia or a severe mental or medical illness that would prevent participation in weekly rehearsals, and current participation in a choir. Eligibility criteria for the qualitative study were: English-speaking; scoring 8 or higher on the Patient Health Questionnaire (PHQ-8) depression scale at baseline; having completed at least 24 COV choir rehearsals. COV researcher (CC) conducted the individual interviews at senior centers and provided $35 reimbursement for each interview. Semi-structured interviews asked about changes in participants’ mood across three domains (physical, social and psychological) and the perceived relationship of any changes to participation in various aspects of the COV program. Interviews were digitally recorded and transcribed verbatim. Transcripts were analyzed according to the principles of grounded theory using atlas.TI software. Coding and category identification were reconciled by two researchers. A third researcher reviewed and confirmed the categories.

**Results:** 11 participants met the eligibility; 10 agreed to be interviewed (4 African-Americans, 2 Asian-Americans and 4 Caucasians); one declined. Mean age was 69.6 years. Four main themes relating to participation in the COV choir intervention were identified: 1) uplifts spirits, 2) provides a safe environment, 3) helps foster trust and friendship, and 4) empowers participants to pursue other activities in their lives. In the emotional domain, participants identified the choir as a way to cope with their worries and appreciated having the choir as a constant activity in their lives. They described having fun and feeling joyful with listening and learning music in a group. Most participants also alluded to having music linger in their mind long after rehearsals and feeling motivated to listen to music on their own. For many, singing in a weekly choir provided a non-threatening way to practice vulnerability, engage with others as a team, and form meaningful friendships. During rehearsals, many participants felt heard and respected and were comfortable voicing their opinions and finding ways for creative expression. Since starting the choir, some chose to become involved in other community activities and felt less socially isolated.

**Conclusions:** Participating in a community choir had a positive impact on mood and emotional well-being. Singing and listening to music generated positive emotions and served as a source of distraction from day-to-day worries. Socially, the choir’s supportive environment was conducive for social bonding and creative expression among participants. Improvements in participants’ sense of self efficacy were also evident as they felt more empowered to form new relationships and pursue other activities.

**This research was funded by:** This project is supported by Grant Numbers R01AG042526 (JKJ), R25 MH060482 (CC), and P30AG15272 (Perez-Stable) from National Institutes of Health (NIH).
stability, and potentially be a harbinger of an undiagnosed cognitive impairment. This project aims to explore potential risk factors and trajectories of housing instability experienced by the oldest adults seeking housing assistance at the VA Connecticut Healthcare for Homeless Veterans (HCHV) Clinic.

Methods: Chart Review: This is a retrospective study conducted by chart review of adults who were 69 years old and older and seen in the VA Connecticut HCHV Clinic during a 7-month period between October 2014 and April 2015. Data extracted from the chart included age, housing history, medical/psychiatric visit history and diagnoses. In addition, information from housing assessments and past records were used to construct a narrative timeline of past housing experiences up to the date of presentation to the HCHV Clinic during the study period. These narratives were used to determine the age each person first experienced housing instability and homelessness. Statistical Analysis: A linear regression model was used to describe the observed relationship between current age and age of first episode of housing instability or homelessness. A theoretical model of housing instability and homelessness with age was constructed assuming that the expected probability of an episode of unstable housing or homelessness was equally likely at any age starting from the age of 18.

Results: During the study period, there were 817 HCHV Clinic visits for 482 adults. We reviewed the charts of those aged 69 years old or older. This included 22 patients ranging from 69 to 89 years old. One patient was excluded as he had stable housing. Twenty of the 21 adults remaining were men. We identified 29% (6) at risk of losing their housing and 76% (16) currently homeless. The population included 33% (7) with a substance use disorder, 24% (5) with a mood disorder, 29% (6) with an anxiety disorder and none with a history of schizophrenia or schizoaffective disorder. Only 14% (3) were diagnosed with any cognitive impairment. None of the patients had an episode of housing instability or homelessness before 50 years old and only 2 had an episode of housing instability or homelessness prior to 60 years old. Age when first at risk of homelessness (Figure 1) and age when first homeless (Figure 2) were much higher than predicted by the theoretical (probability) model (see red dotted lines). This indicates that older patients have housing instability for the first time at a much later age in life than would be predicted by probability alone. In addition, when normalized by the theoretical model, both age at risk (r² = 0.21, p < 0.05) and age homeless (r² = 0.28, p < 0.05) remained highly correlated with age of presentation to the HCHV Clinic.

Conclusions: The results of this investigation provide evidence that older age is a risk factor for new housing instability. This raises a question of whether housing instability in older adults may represent a new functional impairment and a first presenting symptom of an underlying neurocognitive disorder. If so, evaluating and supporting this impairment will be essential to assist patients in regaining safe and stable housing. Further investigations that include assessment of housing trajectories of younger patients will be important to determine the strength and validity of this observation.

Figure 1. Late Life Housing Instability in Older Adults.
Acetylcholinesterase Inhibitors for Delirium in Older Adults

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Ambreen K. Ghori, MD

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2Saint Francis Hospital and Medical Center, Hartford, CT

Introduction: The aim of this systematic review is to identify published randomized controlled trials (RCTs) that evaluated the use of acetylcholinesterase inhibitors for delirium in older adults (≥ 60 years).

Methods: A literature search was conducted of PubMed, MEDLINE, EMBASE, PsycINFO and Cochrane collaboration databases for RCTs in any language that evaluated the use of acetylcholinesterase inhibitors for delirium in older adults (≥ 60 years). Also, bibliographic databases of published articles were searched for additional studies.

Results: A total of seven RCTs that evaluated the use of acetylcholinesterase inhibitors for delirium in older adults (≥ 60 years) were identified. In five of the seven studies there was no benefit for the acetylcholinesterase inhibitor in either the prevention or management of delirium. In one study there was a trend towards benefit for the active drug group on the incidence of delirium and the length of hospital stay but both outcomes did not attain statistical significance. One study found a longer duration of delirium and a longer length of hospital stay in the active drug group when compared to the placebo group. The acetylcholinesterase inhibitors were well tolerated in four of the seven studies. In one study the mortality rate was found to be almost three times higher in the group receiving haloperidol and rivastigmine when compared to the group receiving haloperidol and placebo.

Conclusions: Current evidence does not suggest efficacy for acetylcholinesterase inhibitors for the prevention or management of delirium in older adults.

This research was funded by: None.

Poster Number: EI 52

Sleep to Activate Mood Promotion (Stamp) in Older Adults: Initial Results From a Prevention Pilot Study

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Frederic C. Blow, PhD
Helen C. Kales, MD

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2Department of Veterans Affairs, Ann Arbor, MI
**Introduction:** Prevention strategies for depression lag behind those for other medical disorders, particularly among older adults. Sleep and circadian problems may be a key target for preventive interventions for depression as they are commonly experienced by older adults and put individuals at increased risk for the development of depression (Baglioni et al., 2011; Cho et al., 2008; Johnson et al., 2006; Maglione et al., 2012; Tsuno et al., 2005). Re-timer glasses are an innovative new technology that uses bright light therapy delivered through eye glasses to regulate the circadian rhythm. In individuals whose sleep-wake cycle is less synchronized, exposure to light can help restore synchronicity (Czeisler & Khalsa, 2000; Lewy, Wehr, Goodwin, Newsome, & Markey, 1980). We examine early results from a preventive intervention pilot study utilizing Re-timer glasses and targeting older adults with subsyndromal depressive symptoms and poor sleep quality.

**Methods:** Adults aged 65 or older were screened eligible for the study based on having mild depressive symptoms (PHQ-9 of 5–9) and poor sleep quality (PSQI of of ≥6) (n = 7). After screening, participants were followed for four weeks with an initial two week period (baseline to midpoint interview) of daily sleep monitoring (actigraphy and sleep diary) and questionnaire assessments at baseline and midpoint (PHQ, PSQI, ISI). In the third and fourth week of the study, participants wore the Re-Timer sleep glasses for approximately thirty minutes a day at a time assigned by the Re-Timer calculator. Sleep monitoring continued and participants were given final questionnaires at the end of the four week study period. We utilize paired sample t-tests to examine preliminary pre- and post-intervention results on the PHQ, PSQI, ISI, and averaged daily Actigraphy data.

**Results:** Early results from 7 of an anticipated 12 participants show that PHQ-9 scores declined from means of 6.1 at screen and 6.3 at baseline to 4.0 at follow-up. Scores were significantly different from screen to follow-up (t = 3.2, p < .05) but not significant from baseline to follow-up (t = 2.0, p = .09). Mean PSQI scores declined from 10.7 at screen and 8.7 at baseline to 8.4 at follow-up. Scores were significantly different from screen to follow-up (t = 2.9, p < .05) but not significantly different from baseline to follow-up. Mean ISI scores and actigraphy assessed sleep onset latency both declined, and sleep efficiency improved from midpoint to follow-up, but were not significantly different. There was some variability among participants improvement with some participants seeing greater change in mood and sleep parameters than others.

**Conclusions:** Preliminary pilot results suggest that the intervention had a positive impact on participant’s sleep and mood with PHQ-9 and PSQI scores improving in particular. Some variability was seen in participant improvement, and future work should consider whether particular subsets of participants may benefit most from a light-therapy intervention. Ultimately, an effective preventive intervention that is targeted towards a high risk group of older adults has the potential to reduce severe distress and costly health service use.

This research was funded by: Support for this work provided by the Phil Jenkins Award for Innovation in Depression Treatment from the University of Michigan Health System Depression Center, the National Institute of Mental Health (T32 MH073553) Geriatric Mental Health Services Post-Doctoral Training Fellowship, and the UM Program for Positive Aging.
**Results:** Eight studies were found consisting of two case reports, four case series, one retrospective chart review and one prospective trial. Total combined participants among studies included was 96. Literature is limited to the effect of ECT on agitation in patients with dementia. Although mainly limited to case-studies, ECT has demonstrated promising results in decreasing agitation in patients with dementia. Patients who relapsed were found to benefit from maintenance ECT.

**Conclusions:** The existing literature examining the effects of ECT on agitation in patients with dementia is limited, though published data from open-label case studies suggest efficacy. Obtaining consent is one barrier to initiating this promising therapeutic modality. This review suggests that a double-blinded randomized controlled trial will help to better understand the safety and efficacy of ECT for patients with agitation in the setting of dementia.

This research was funded by: Not applicable.

**Poster Number: EI 55**

**The Utility of Bedside Clinical Guidelines for Rational Psychotropic Use among Patients in Dementia Care Units**

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2Coler-Goldwater Specialty Hospital and Nursing Facility, New York, NY

**Introduction:** Behavioral disturbances among patients with dementia, including agitation, aggression, and psychosis, form a constellation of symptoms referred to as behavioral and psychological symptoms of dementia (BPSD). These impact heavily on patients’ quality of life, caregiver stress, and management options for clinicians. Off label use of antipsychotics for symptom relief has been the general trend but the increasing evidence for harmful side effects in this population has prompted numerous

<table>
<thead>
<tr>
<th>Table 1. Clinical Guidelines for Use of Psychotropic Medications in the Management of Dementia-Related Behaviors^a,b,c</th>
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</thead>
<tbody>
<tr>
<td>WHEN TO START A MEDICATION (All criteria are required)</td>
</tr>
<tr>
<td>A. Non-pharmacologic/behavioral/supportive/comfort interventions have been implemented (resident’s unmet needs are assessed/addressed including but are not limited to pain, hunger, thirst, loneliness, boredom) but the behavior still persists</td>
</tr>
<tr>
<td>B. The behavior results in distress or potential to the resident and/or others.</td>
</tr>
<tr>
<td>C. The target behavior is well defined. Target behaviors include any of the following:</td>
</tr>
<tr>
<td>a. Verbal aggression/outbursts: incessant verbal behavior resulting in significant distress to the resident or other residents</td>
</tr>
<tr>
<td>b. Physical aggression: frequent physically aggressive episodes with a potential for harm to self or others</td>
</tr>
<tr>
<td>c. Resistance or aggression during care that interferes with essential daily care (including hygiene and toileting needs)</td>
</tr>
<tr>
<td>WHEN TO CONTINUE A MEDICATION (All criteria must be met)</td>
</tr>
<tr>
<td>A. The medication use is assessed to have been of benefit to the resident without any adverse effects</td>
</tr>
<tr>
<td>B. The resident is monitored for any emerging adverse effects (including but not limited to sedation, falls, and change in mental status). Additional monitoring parameters will be determined by the primary physician or psychiatry.</td>
</tr>
<tr>
<td>WHEN TO DISCONTINUE A MEDICATION (Only one of the criteria is required)</td>
</tr>
<tr>
<td>A. Adverse effects</td>
</tr>
<tr>
<td>B. Goal/target behavior is resolved or satisfactorily improved over a period of 2 months</td>
</tr>
<tr>
<td>C. Medication is not effective. Target behavior persists even after an adequate trial (i.e. adequate dose for an adequate time). For criteria A or C, the medication should be shifted to another medication, if warranted OR dose increased if there is still room within the acceptable dose range AND the patient should be reevaluated for any unmet needs with non-pharmacologic interventions maximized.</td>
</tr>
</tbody>
</table>

^aThese are broad and non-patient specific guidelines. Medication decisions should still be based on individual patient assessments, with input from the unit psychiatrist.

^bThese guidelines apply to the use of any psychotropic medication (mood stabilizers, benzodiazepines, antipsychotics, and antidepressants) in the management of dementia-related behaviors, and is not limited to antipsychotics.

^cInput from psychiatry is essential when starting a medication; however, psychiatry’s input is recommended but not urgent, in the discontinuation of medications. Medication treatment for specific disorders such as major depression and panic disorder are not covered by these guidelines.
recommendations to limit its use. In the United States, the National Partnership to Improve Dementia Care, a public-private coalition, established a new national goal of reducing the use of antipsychotic medications in long-stay nursing home residents by 25% by the end of 2015, and 30% by the end of 2016. Between the end of 2011 and the end of 2013, the national prevalence of antipsychotic use in long-stay nursing home residents was reduced by 15.1%, decreasing from 23.8% to 20.2% nationwide. Efforts are now gaining to reduce that rate even further. In specialized dementia units, however, where patients with BPSD are concentrated, rates are expected to be much higher. The lack of clinical useful guidelines for BPSD, with particular attention to medication discontinuation criteria in this population, has become a challenge. It is our objective to operationalize a set of bedside guidelines that we previously developed for the initiation, maintenance, and discontinuation of psychotropic medications in the management of BPSD in our setting. Our secondary objective is to further characterize these patients who have been given psychotropics and potentially identify associations or even modifiable risk factors.

**Methods:** This study was conducted in four dementia care units at an 815-bed long-term nursing care facility. The Department of Psychiatry provides regular in-house evaluations of all residents on these units. All admitted patients between July and October 2015 were individually assessed for psychotropic drug use between two time points. Antidepressants used for clinical depression with signs of BPSD were not included in our evaluation. All patients who were discharged, transferred, or had expired at the time of the second time point were excluded as well as any new admissions after our initial time point. Patients who were diagnosed with mild cognitive impairment were likewise excluded. Our medication use criteria were applied uniformly to all subjects. These guidelines were used to augment already existing non-pharmacological strategies involving mainly in vivo staff education and feedback. We will be collecting additional data on psychotropic drug use at a third time point, on week 24. Baseline data collected from patients included demographics, diagnoses, preexisting mental illness, length of stay, and presence of concurrent mood symptoms.

**Results:** There were a total of 92 patients included in this study, with 53 males and 39 females. The mean age among males was 71.26 years and among females it was 78.1 years. Psychotropic drug use (antipsychotics, mood stabilizers, benzodiazepines) at

<table>
<thead>
<tr>
<th>Table 2. Demographics of Dementia Unit Residents (N = 92)</th>
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<tr>
<td>Age Distribution</td>
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<tr>
<td>&lt;65</td>
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<tr>
<td>65–74</td>
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<tr>
<td>75–84</td>
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<tr>
<td>≥ 85</td>
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<tr>
<td>Mean Age</td>
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<tr>
<td>Overall</td>
</tr>
<tr>
<td>Male</td>
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<tr>
<td>Female</td>
</tr>
<tr>
<td>Sex</td>
</tr>
<tr>
<td>Male</td>
</tr>
<tr>
<td>Female</td>
</tr>
<tr>
<td>Diagnoses</td>
</tr>
<tr>
<td>Primary Psychosis</td>
</tr>
<tr>
<td>Alzheimer’s Dementia</td>
</tr>
<tr>
<td>Vascular Dementia</td>
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<tr>
<td>Dementia Secondary to Traumatic Brain Injury (TBI)</td>
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<tr>
<td>Dementia Secondary to Chronic Alcohol Use</td>
</tr>
<tr>
<td>Lewy Body Dementia</td>
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<tr>
<td>Parkinson’s Disease Dementia</td>
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<tr>
<td>Dementia Secondary to HIV</td>
</tr>
<tr>
<td>Mixed</td>
</tr>
<tr>
<td>Depression</td>
</tr>
<tr>
<td>Baseline Psychotropic Use</td>
</tr>
<tr>
<td>Typical antipsychotics</td>
</tr>
<tr>
<td>Atypical antipsychotics</td>
</tr>
<tr>
<td>Mood stabilizers</td>
</tr>
<tr>
<td>Antidepressants</td>
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<tr>
<td>Benzodiazepines</td>
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</table>
baseline was 36.95% (34/92 on any psychotropic medication; 19/34 on antipsychotics alone, 4/34 on antipsychotics and mood stabilizers, 9/34 on mood stabilizers alone, and 2/34 on antipsychotics and benzodiazepines). Baseline antipsychotic drug use was found to be at 27.2% (25/92), with haloperidol being the most frequently given medication, followed by risperidone and quetiapine. At the second time point, after our intervention, psychotropic drug use was lower at 31.5% (29/92). The reduction was primarily accounted for by the decline in antipsychotic use from 25 to 20, for a rate of 21.7%. There was no increase in mood stabilizer or benzodiazepine use at the second time point. Our data also show that the age group between 64 and 75 were given psychotropics the most while patients 85 and older received psychotropics the least. Patients with a diagnosis of mixed dementia, primarily Alzheimer’s and vascular, were given psychotropics most frequently. There was also note of a lower rate of antipsychotic use among those with a concurrent diagnosis of depression.

**Conclusions:** Our results demonstrate a significant drop in psychotropic use over a 12-week period with our user-friendly bedside medication-use criteria. Its utility was most evident with medication discontinuation and maintenance. The guidelines enabled us to facilitate the implementation of rational psychotropic use in our setting. Our effort underscores the growing role of Psychiatry in providing stewardship in behavior management and medication use among patients with dementia. It also cannot be overemphasized that the ongoing scrutiny of psychotropic use in this population must also be expanded to other psychotropics beyond antipsychotics.

**Poster Number: EI 56**

**The Influence of Medical Burden Severity and Cognition on Functional Competence in Older Community-Dwelling Individuals with Schizophrenia**

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2Department of Psychiatry, University of Toronto, Toronto, ON, Canada

**Introduction:** Cognition predicts functional competence among individuals with schizophrenia across the lifespan. However, as these individuals age, increasing levels of medical burden may also contribute to functional deficits both directly and indirectly through cognition. The aim of the current study was to assess the relationship among, cognition, medical burden, and functional competence in older individuals with schizophrenia.

**Methods:** We analyzed data obtained from 60 community-dwelling participants with schizophrenia and 30 control participants aged 50 or above. Cognition was assessed using the MATRICS Consensus Cognitive Battery (MCCB), functional competence was assessed using the USCD Performance-based Skills Assessment (UPSA), and medical burden was assessed using the Cumulative Illness Rating Scale for Geriatrics (CIRS-G). Group differences were assessed using independent samples t-tests or chi-square tests. Mediation analyses using bootstrapping techniques were used to assess whether cognition mediated the effects of medical burden on functional competence.

**Results:** Participants with schizophrenia had higher levels of medical burden, cognitive deficits, and functional impairments. In participants with schizophrenia, cognition, but not medical burden, predicted functional competence after adjusting for age, education, gender, and clinical symptoms. In control participants, cognition and medical burden both predicted functional competence after adjusting for age, education, and gender. Further, cognition was found to fully mediate the association between medical burden and functional competence in control participants.

**Conclusions:** Cognition is a robust predictor of functional competence among older individuals with schizophrenia, regardless of medical burden. Cognitive deficits associated with schizophrenia may mask any further cognitive impairment associated with medical burden and its impact on function.

This research was funded by: Canadian Institutes of Health Research.

**Poster Number: EI 57**

**Evidence for Using Electroconvulsive Therapy in Individuals with Dementia: A Systematic Review**

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**Introduction**: The objective of this study is to conduct a systematic review of the literature on evaluating the efficacy and tolerability of electroconvulsive therapy in individuals with dementia.

**Methods**: We conducted a systematic search of 5 major databases including PubMed, Medline, PsychInfo, Embase and Cochrane collaboration with “ECT” and “Dementia” as our search terms. There was no time or language restrictions placed on the selection of the studies. However, we only used studies that were published in English language or had an official English translation in our final review.

**Results**: A total of 134 published articles were identified using our search strategy. Of these only 28 articles were deemed eligible for a full-text review. Of the twenty eight articles 20 were case reports, 5 were case series and 3 were retrospective chart reviews. We did not identify any randomized controlled trials (RCT) for the use of ECT in individuals with dementia. A total of 8 articles evaluated the use of ECT in individuals with dementia and depressive symptoms. Seven articles evaluated the use of ECT in individuals having agitation and aggression in dementia. Two articles each evaluated the use of ECT in individuals with dementia who had psychotic features, catatonic symptoms and yelling & screaming. One article identified the use of ECT individual who has manic symptoms. A total of 6 articles that evaluated in use of ECT in individuals with dementia looked at one or more behavioral symptoms. All of the studies under review reported symptomatic benefits in individual with dementia. We found that on average 4–8 sessions of ECT were used in these studies. Majority of studies reported significant side effects with the use of ECT including cardiovascular and neurological adverse effects.

**Conclusions**: Available evidence from this systematic review indicates that there are no RCTs for the use of ECT in individuals with dementia. Current evidence from 28 non-randomized studies reported symptomatic benefits from ECT for a variety of symptoms in individuals with dementia including depression, mania, yelling & screaming, agitation and a combination of these symptoms. Despite showing symptomatic benefit, a majority of the studies also indicate that the use of ECT results in significant adverse effects namely cardiovascular and neurological effects in these individuals. It can be summarized data from this systematic review indicates that ECT may be beneficial in certain individuals with dementia and behavioral symptoms but significant adverse events may limit its use in these vulnerable individuals.

This research was funded by: None.

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**Poster Number: E1 58**

**Differences in Psychological Outcomes in Older Versus Younger Oncology Patients Undergoing Chemotherapy: Do Coping and Personality Play a Role?**

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**Introduction**: Older oncology patients have been consistently found to exhibit lower levels of depression and anxiety, compared to younger patients. Several possible explanations for this difference have been proposed (e.g., older patients may use more adaptive coping strategies; older adults have fewer competing social and occupational responsibilities; having a chronic or life-limiting illness as an older adults is more expected). However, few studies have examined the wide range of potentially relevant psychological factors that may influence depression and anxiety symptoms in older vs. younger oncology patients. Therefore, among a large sample of patients undergoing chemotherapy, the purpose of this study was to compare older (65 years or older) vs. younger patients (<65 years) in terms of demographic, clinical, and psychological outcomes, and to evaluate for differences between the two age groups on a range of potentially relevant psychological variables (i.e., coping, resilience, perceived stress, and personality).

**Methods**: This study used a large, well-characterized dataset of adults (n = 1,329) with breast, gastrointestinal, gynecological, or lung cancer. Patients had received chemotherapy in the preceding four weeks and were scheduled to receive at least two additional cycles of chemotherapy. While six timepoints were included in the larger study, this analysis utilized the baseline assessment data. Measures included demographic and clinical variables (e.g., time since diagnosis, number of metastatic sites), and key psychological outcomes (i.e., depression, anxiety, and intrusive thoughts/ hyperarousal), which were evaluated using the CES-D, STAI-S, and IES-R, respectively. The following potentially relevant psychological variables were also assessed: general coping (Brief COPE), cancer-specific coping (Mental Adjustment to Cancer scale), perceived stress (Perceived Stress Scale), resilience (Connor-Davidson Resilience Scale), and the “Big Five” personality domains (NEO-FFI). Descriptive statistics, chi-square analyses, and t-tests were used to examine relationships between age group (<65 vs. ≥ 65 years) and demographic, clinical, symptom-related, psychological, coping, resilience, stress, and personality variables.
**Results:** About one-quarter (27.5%) of the sample was 65 or older (N = 365). Older patients were more likely to be male (31.2% in the older group, vs. 18.6% in the younger group). Older patients were less likely to work for pay (21.4% of the older patients vs. 40.3% of the younger patients) and to have childcare responsibilities at home (5.0% of the older patients vs. 28.8% of the younger patients). Compared to younger oncology patients, older patients reported significantly lower levels of depressive and anxiety symptoms, as well as lower levels of intrusive thoughts and hyperarousal. While scores on the resilience scale did not differ between the age groups, older patients had lower levels of trait anxiety, perceived stress, anxious preoccupation. Findings were mixed with regard to differences between the age groups in terms of the various subscales of the Brief COPE. On the NEO-FFI, older patients also scored lower on neuroticism and higher on agreeableness.

**Conclusions:** These findings raise intriguing possibilities regarding the role of coping, stress, and personality in the relationship between age and psychological outcomes (including depression, anxiety, intrusive thoughts and hyperarousal) among cancer patients undergoing chemotherapy. Further, these findings point to the need to study coping, perceived stress, and personality as possible mediators of associations between age and previously reported lower levels of psychological distress in older oncology patients. Our team is examining these possibilities using structural equation modeling. Moreover, interventions with patients at risk for higher levels of distress will also be aided by identifying these potentially modifiable factors (for example, interventions that teach more adaptive coping strategies or ways of perceiving stress could theoretically be useful).

**This research was funded by:** National Institutes of Health (NINR/NCI R01 CA134900).

**Poster Number:** EI 59

**Triad of Suffering: Pain, Depression, and Anxiety among Newly Admitted Nursing Homes Residents**

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**Introduction:** Depression and anxiety disorders are prevalent among older adults, as is pain. These conditions are independently associated with reduced functioning and quality of life. Despite the frequent co-occurrence of all three of these disorders, little is known about the epidemiology and treatment of these disorders in nursing homes. The objectives of this study were to: 1) describe the prevalence of depression, anxiety disorders, and pain among newly admitted nursing home residents; and 2) describe the treatment of these disorders.

**Methods:** We used national Minimum Data Set (MDS) version 3.0 data from 2011–2012. Federally-mandated for all residents living in Medicare/Medicaid-certified nursing facilities (~96% of facilities in the United States), the MDS is a comprehensive clinical assessment including >400 items on sociodemographics, mood and behavior, symptoms, pain, clinical diagnoses, and treatments. We identified 715,854 nursing home residents with MDS assessments performed at admission between 2011 and 2012 who were 65 years of age or older, non-comatose, not admitted to a swing bed provider, and able to complete a pain assessment.

**Results:** At admission, 20% of residents had an active depression diagnosis and 7% had an active anxiety disorder diagnosis. Fifty four percent of all residents reported having pain in the last 5 days. Rates of self-reported pain did not differ by psychiatric disorder, with ~50% of residents with depression and of those with an anxiety disorder reporting also experiencing pain. Seven percent of residents had active depression, an active anxiety disorder, and reported pain in the last 5 days. Antidepressant medication was common (~38% of residents) and did not vary by presence of pain. Antianxiety medication (20.4% among those with pain versus 17.0% of those without, p < 0.001) and hypnotics (11.2% versus 6.4%, p < 0.0001) were more commonly prescribed to those with pain documented relative to those without pain documented. Of those in pain, 17.0% had received scheduled pain medication management, PRN pain medications, and non-medication interventions in the last 5 days.

**Conclusions:** Many nursing home residents experience pain, depression, and anxiety at admission. Pain management and psychotropic medication use is common. An improved understanding of the relationships between pain, mental health, and analgesic use is necessary since older adults, particularly those in nursing homes, are routinely excluded from clinical trials despite being at high risk for adverse effects of analgesics and other treatments.

**This research was funded by:** Funding for this work has been provided by a grant from the National Cancer Institute, 1R21CA198172-01 (PI: Lapane).
**Changing Patterns of Sedative Use Over Time in Older Adults in Ontario**

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**Introduction:** Benzodiazepine medications have well-documented risks, and their prescription rates in older adults have been decreasing over time. Concerns have been raised that trazodone and quetiapine, two medications with sedative properties at low doses commonly used off-label for sleep or behavioural symptoms in older adults, are increasingly being prescribed as alternatives to benzodiazepines. Our objective is to describe the shifting patterns of sedative prescription in older adults by comparing changes in benzodiazepine, trazodone and quetiapine dispensing over an 11-year period.

**Methods:** This time-series analysis linked health-care databases in Ontario, Canada, to identify residents over the age of 66 from each quarter in the period of January 2002- March 2013, stratifying the cohort by those residing in the community and those in long-term care. We compare the rate of dispensing of these drugs in each quarter and characterize their changing use over time by age, sex, and diagnosis of dementia.

**Results:** We demonstrate that the prevalence of low-dose trazodone and quetiapine use is increasing in both the community (1.8- and 4.5-fold respectively) and LTC (1.7- and 3.8-fold) settings over time. This coincides with a decrease in prevalence of benzodiazepine use (1.5-fold decrease in the community and 1.8-fold decrease in LTC). Both the rate of increase of trazodone/quetiapine use and decrease of benzodiazepine use are significantly faster in the oldest cohort and in those with dementia. While benzodiazepine use has become less prevalent over time, it is increasingly used in combination with other psychotropic medications. In the most recent quarter, in the community and long-term care respectively, the use of trazodone (56.8% and 77.8%) and quetiapine (70.7% and 79.7%) was in combination with at least one other psychotropic medication.

**Conclusions:** Benzodiazepine use is decreasing in Ontario, but there is a shift towards 1) low-dose, off-label use of trazodone and quetiapine and 2) psychotropic polypharmacy. Given these prescribing trends, it is important to establish if these particular uses of sedatives are efficacious and safe in this vulnerable population.

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**Patient-Caregiver Discordance and Caregiver Burden in Dementia**

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**Introduction:** Alzheimer’s Disease and other forms of dementia are increasingly common as the population ages. These illnesses have life-changing impacts on patients and caregivers alike. Afflicted individuals are often significantly less aware of their cognitive, functional, and behavioral symptoms than are their family members. We have labeled the difference between patient and caregiver awareness in regard to the severity, or even the presence, of cognitive, functional or behavioral symptoms as “discordance”. This discordance appears to be a frequent source of tension between the person with dementia and the caregiver, particularly early in the illness. We are not aware of any studies that have considered the interactions between discordance, the associated emotional and interpersonal strains between patient and caregiver, and the overall degree of burden experienced by the caregiver. The present study was designed to explore these relationships. Specifically, we have hypothesized that: (1) discordance correlates with the degree of caregiver burden; and (2) the emotional and interpersonal strains associated with this discordance are further associated with caregiver burden.
Methods: In order to test these hypotheses, the present study examined 35 patient-caregiver dyads seen at the time of their initial memory clinic evaluation. All patients had a diagnosis of cognitive impairment NOS or dementia (mean MOCA score = 18.9, standard deviation 6.4). Patients were asked to rate their degree of impairment in memory, instrumental activities of daily living, and activities of daily living, on a scale of 0 (no impairment) to 3 (severe impairment). Separately, the primary caregiver was asked for his or her rating of the same areas. Total “Awareness Domain” scores were determined by subtracting the sum of patient ratings from the sum of caregiver ratings on these items. Caregivers were then asked a series of questions about the interpersonal or emotional aspects of their relationship (for example, “How resistant is the patient to accepting assistance?”; “How defensive is the patient about his or her problems?”) and a total “Interpersonal/Emotional Domain” score was thus determined. In addition, caregivers were administered the Zarit Burden Interview—Short Version. Additional patient measures included the Neuropsychiatric Inventory, Montreal Cognitive Assessment, Geriatric Depression Scale, and the Generalized Anxiety Disorder-7 Scale.

Results: Both hypotheses were supported: The Awareness Domain score was correlated with caregiver burden (rs* (33) = .35, p = .040); in addition, the total Interpersonal/Emotional Domain score was highly correlated with caregiver burden (rs (33) = .79, p < .001). The two domains—Awareness and Interpersonal/Emotional—were correlated with each other (rs (33) = .45, p = .007). Neuropsychiatric Inventory scores were associated with both caregiver burden (rs (33) = .67, p < .001) and with Interpersonal/Emotional Domain scores (rs (33) = .67, p < .001). Awareness was significantly negatively correlated with cognitive impairment, assessed by Montreal Cognitive Assessment scores (rs (33) = 0.47, p = .004). * For the purpose of this abstract, rs is equivalent to r subscript s.

Conclusions: The severity of impairment in patients correlates with a lack of awareness of the severity of cognitive, functional, or behavioral symptoms of dementia. In addition, this discordance between the patient and caregiver in regard to their views of the illness, and the emotional and interpersonal strains associated with this discordance, contribute to caregiver burden. Future research should explore methods to lessen this discordance, and the tensions that accompany it, in order to decrease the degree of burden experienced by the caregiver.

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Results: The mean patient age was 75.9 years; 80% (49) were female; 59% (36) were Hispanic, 20% (12) were Non Hispanic Black, 10% (6) were Non Hispanic White, and 12% (7) were of other ethnic backgrounds. Previously, it was found that 52% (n = 95) of the home care patients evaluated were given new mental disorder diagnoses following psychiatric consultation. Of these patients, it was determined that 64% (n = 61) of patients had initial recommendations from the geriatric psychiatrist that included pharmacological interventions. At their six month primary care follow up visit, 59% (36) of the patients continued to be prescribed psychiatric medications by their primary care physicians as initially recommended by the geriatric psychiatrist from the initial consultation.

Conclusions: This study found that over half of older adults visited by the MHC-GPP psychiatrist continued to receive recommended clinical intervention as defined by prescription of psychiatric medications by their primary care physicians. These findings suggest that a geriatric psychiatrist colocated in a home care agency not only leads to recognition of mental disorders in homebound elders but also demonstrates the colocated model leads to treatment of mental disorders. Despite the challenge of multiple EMRs, the primary care physician implemented the recommended treatment in a majority of cases. A more unified electronic medical system may allow for immediate integration of psychiatric diagnoses and recommendations into the primary care record and continue to improve collaboration between the geriatric psychiatrist and the primary care physicians in this colocation model of integrative care.

Baseline Stress Effect on Remission in Geriatric Depression
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Introduction: Stress is associated with increasing depression in the geriatric population.1,2 A recent study found that stressful life events and depressive symptoms were related but the relationship between the two was brief and not present one month later.3 Past studies have found that there are gender differences in perception of stress and that female gender is significantly associated with higher level of stress and stronger impact on negative well being.4 We hypothesize that higher stress affects both short and long term remission of depression. There may be differences in remission rates by sex since women and men perceive stress differently.

Methods: A sample of 425 patients participating in Neurocognitive Outcomes of Depression in the Elderly Study (NCODE), a longitudinal study of depression in older adults at Duke University were examined for stressors. At one year intervals, patients depressed at baseline were asked 20 questions to assess overall stress. Questions assessed stressors related to changes in health, family and living situations, work, and finances. All patients met criteria for depression based on MADRS administered every 3 months. We fit Cox proportional hazard models to determine if there were any effects of baseline stress on remission of depression in the short and long term and if there were any further differences with respect to gender. Specifically, we analyzed the effects of total baseline stress on remission of depression with and without respect to gender at 6 months, 2 years and at the study’s end.

Results: Results show that the effects of stress at baseline are present at 6 months, 2 years, and to the studies end. Baseline total stress did not affect the likelihood of remitting in the short term or long term. The presence of a stressor at baseline decreases the hazard of remission at 6 months, 2 years and at the study’s end. The nature of the stressor, whether related to changes in health, family and living situations, work or finances was not significant. There were no differences in results between women and men.

Conclusions: The effects of stress at baseline are long lasting over the course of treatment of depression. There are no individual stressors that are particularly important. There are no differences pertaining to gender. Results suggest that over the course of depression, methods to reduce the chronic effects of baseline stress may lead to more likely remission rates over the long term.5

References
Perceived Confidence in Ability to Diagnose and Manage Dementia among Fourth Year Psychiatry Residents

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Introduction: As the number of Americans over the age of 65 increases, a growing number of older adults will require mental health care, yet there is a limited number of providers with subspecialty geriatric training. Therefore, general adult psychiatrists will inevitably care for an increasing number of elderly patients. It is currently estimated that almost one third of individuals above 85 have a diagnosis of dementia and the global prevalence of dementia is expected to dramatically increase as the population ages (Alzheimer’s Disease Facts and Figures, 2015. https://www.alz.org/facts/downloads/facts_figures_2015.pdf. Accessed 15 Oct 2015). Given the prevalence of dementia within the geriatric population, large numbers of elderly individuals seeking psychiatric treatment will likely have an underlying cognitive disorder. Given the prevalence of cognitive impairment in older adults and the shortage of geriatric psychiatrists, it is critical that general adult psychiatrists seeing these older adults are comfortable with the evaluation and management of dementia. In addition, since many of individuals with dementia will have associated behavioral and psychological symptoms including depression, agitation, and psychosis there is a pressing need to ensure psychiatrists are adequately trained in the skills necessary to care for these patients. Furthermore, being able to effectively communicate with patient families about prognosis, safety issues and dementia-related resources are additional critical aspects of dementia care that psychiatrists need to be comfortable with. It is unclear to what extent psychiatrists feel prepared to provide clinical care for the growing population of patients with dementia following general adult psychiatry training. In order to gain an understanding of the self-perceived level of confidence psychiatrists have after residency training, a national survey will be conducted to assess fourth year residents’ confidence in managing and diagnosing dementia. In order to gain a further understanding of senior resident’s perspectives on dementia care and whether they view it as an integral part of their training experience, the survey will also assess how important residents view these skills for their future careers.

Methods: Study Design and Sample Cross-sectional study using a brief, 10-item online survey will be conducted to assess fourth year psychiatric residents’ self-perceived confidence in dementia diagnosis and management. Email invitations will be sent out to fourth year residents at a variety of ACGME-approved psychiatry residency programs across the country. Survey Monkey will be used to ensure respondent anonymity. Approval for this study through the University of Michigan Institutional Review Board is pending. Measures A survey was developed to assess psychiatric resident’s self-confidence in specific areas related to diagnosing and managing dementia, based on a similar instrument to assess trainee confidence in palliative care (Manu, E et al. “Self Perceived Competence Amount Medical Residents in Skills Needed to Care for Patients with Advanced Dementia Versus Metastatic Cancer.” J Canc Educ (2012) 27: 515–520). Using a 4-point Likert scale, residents will be asked to rate their confidence in areas such as completing a dementia evaluation, differentiating between different types of dementia, discussing diagnosis with patient/family, and managing dementia-related agitation. Residents will also be asked they would feel more comfortable referring a dementia evaluation to another provider such as a neurologist. Finally, the survey will include items regarding whether they anticipate they will need to diagnose and manage dementia in their future careers. Data Analysis: Analysis will begin with descriptive statistics to summary respondent characteristics (age, gender). Frequency distributions for each survey item will be calculated, with items ranked by resident level of confidence.

Results: We anticipate that respondents may have limited confidence in their ability to diagnose dementia, and less confidence in the ability to manage behavioral symptoms such as agitation. We also anticipate that residents will generally not think these skills are important for their future work.

Conclusions: If our hypotheses are correct, our results will likely suggest that general adult psychiatry residents need more training in the evaluation and management of cognitive disorders given the aging of the patient population for which they will provide care.
**Introduction:** Geriatric patients suffer a tremendous amount of losses yet there is substantial evidence that this population can be resilient in the face of adversity. This is an effort to review the psychological factors involved in resilience during the later years of life as well as the neuroscience research on resilience.

**Methods:** Review of the literature on the prevalence of psychiatric disorders in the non-displaced seniors versus those seniors in displaced (i.e. institutionalized) settings. Review of the literature regarding the neuroscience of resilience as well as resilience in the elderly. A clinical case is discussed to further illustrate resilience in the geriatric population.

**Results:** Mrs. X was an 86 year-old widowed Caucasian female with no previous psychiatric history who was admitted involuntarily on a petition filled out by a nursing home employee in the context of worsening depressive symptoms and active suicidal intent. Approximately two years prior to her admission, her husband of sixty-four years died in their home as a result of a protracted illness. She was his primary caretaker throughout his long suffering. During her grieving, she experienced intense waves of depression and sadness which adversely affected her sleep, appetite, usual interests, and capacity for socializing. However, after having grieved her loss over several months, she found that she was capable of experiencing joy in spending time with church members and weekly cribbage club. A few months prior to her admission to the psychiatric unit, she fell in her home and incurred minor injuries. As a result, her family considered her to be at risk and unsafe to live by herself even though she was fully capable of performing her activities of daily living. While on the psychiatric unit, she spoke of her inability to tolerate her “empty existence” in the nursing home which she felt was devoid of meaning or purpose. The diagnostic impression was that she had Major Depressive Disorder. However, as she revealed more of her life story during the course of her stay, it became evident that finding purpose and meaning in her life would lead to healing. In 2010, approximately 50 million people in America were over the age of sixty five. Currently, with the commensurate advances in medicine, the average life expectancy is 78.8 years which is dramatically longer than their senior predecessors. However, of those additional years, the issue is one of quality over quantity. That is, would most people wish to live longer just for the sake of living longer? In a continuous series of losses, including loss of self, others, independence, and purpose for living, the majority of senior adults maintain a healthy emotional state as compared to the general adult population. With the “Aging in Place” movement, several studies have demonstrated that seniors fear displacement from their homes more than they fear death. Currently, in this country, more than 1.5 million people are estimated to be displaced in nursing homes. Further, the seniors who suffer from this institutionalized existence have a higher prevalence of mood disorders compared to those seniors in the general population. The hypothesis is that most nursing homes create an environment devoid of purpose for these seniors which is correlated with higher prevalence of psychiatric disorders such as depression and anxiety. Studies such as the ECA survey in the 1980s and the Collaborative Psychiatric Epidemiology Survey conducted in 2001 through 2003 have demonstrated that there is a lower prevalence of mood disorders among older adults than younger adults. Meanwhile, studies comparing the elderly population in long-term facilities versus other settings demonstrate a significantly higher prevalence of mood disorders in those living in long-term facilities.

**Conclusions:** Neuroscientific studies have demonstrated many brain changes such as the involvement of the hypothalamic-pituitary-adrenal axis, the role of oxytocin, and the function of the pre-frontal cortex in regulating the autonomic nervous system as contributors of resilience. There have been other suggestions posited such as the elderly experiencing an additional ninth stage to Erikson’s eight stages of the life cycle. This ninth stage is aptly termed the Gero-transcendent stage. Other factors such as temperament as well as family or community involvement have also been identified as influencing an individual’s capacity for resilience. In various studies however, it has been found that having purpose and meaning in one’s life contributes most to resilience.

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Introduction: Substance-induced major or mild neurocognitive disorder (NCD) is characterized by neurocognitive impairments that persist beyond the usual duration of intoxication and acute withdrawal. NCD induced by alcohol frequently manifests with a combination of impairments in executive functions, memory and learning domains. NCD should be carefully assessed in patients with complaints of personality change. NCD can also accompany hallucinations, delusions, mood disturbances mostly depressive and anxiety.

Methods: Case Report: We report a case of a 79-year-old male with history of chronic alcoholism and rehabilitation in the past, who relapsed to alcohol drinking again about six years before presentation. He did not have previous history of bipolar disorder. He presented with being suicidal and hyperactive. On evaluation he was found to be grandiose, thinking that he can earn $15 million through real-estate business and was contacting several real-estate agents despite the fact that he was not currently working. His sleep was decreased, he was sexually pre-occupied and was displaying psychomotor agitation. Detailed history and collateral information was gathered. The patient was consulted with neurologist and initial work up was negative for reversible causes of dementia including B12, folic acid and thyroid function tests. He scored 17/30 on the MOCA, he struggled in repetition and serial 7s and visuo-spatial domains. He was diagnosed with alcohol-induced neurocognitive disorder with further outpatient follow up. During the course, his manic symptoms were treated with divalproex and risperidone with improvement.

Results: Please see below for the discussion in conclusions.

Conclusions: This case illustrates the possibility of neurocognitive disorders presenting as mania. This patient with no history of previous bipolar disorder, presented with first onset manic phase with the history of alcohol dependence and neurocognitive decline. Although, it cannot be deduced with certainty whether the mania is direct consequence of neurocognitive disorder, but its possible association with NCD is an interesting observation in this case. Further longitudinal studies are needed to assess the association of mania with neurocognitive disorders. This case also focuses on the importance of the detailed history and collateral information in the psychiatric assessment.

This research was funded by: Not Applicable.

Introduction: The use of substances to self-medicate, that is to alleviate or treat various negative states, has been acknowledged as a common coping mechanism for various psychiatric conditions. Self-medication with substances is associated with various negative outcomes, including the development of substance use disorders. Extant literature shows that 60% of community samples with bipolar disorder (BD) have reported abusing one or more substances at some point in their lives. Aside from sharing a common cause of psychopathology, self-medication may be one contributing factor to the high co-occurrence of BD and substance use. Understanding people’s interpretations and reasons for use could help inform interventions and assess readiness to change. Given the high prevalence of co-occurring BD and substance use and the complex unique trajectories of each person, we used a case study approach to highlight individual experiences during these types of co-occurrence in later life. The lens of a life course framework with a focus on personal theories on self medication allowed us to uncover how and when each person, we used a case study approach to highlight individual experiences during these types of co-occurrence in later life.

Methods: We examined two case studies of middle-aged adults. In-depth, semi-structured life history interviews were conducted by phone; following transcription of the qualitative data, thematic analyses were conducted.

Results: The first case is a 57-year-old woman who reported a diagnosis of BD not-otherwise-specified as well as the daily use of marijuana, though no prescribed medications. The second case is a 51-year-old man diagnosed with cyclothymia who reported problematic alcohol use, and regular use of Lithium and Seroquel. The participants’ personal theories of the connection between substance use and symptoms of BD are described, with a particular focus on the description of marijuana and alcohol use as forms of self-medication.

Conclusions: Case study approaches can provide valuable insight in understanding the unique life histories and trajectories of middle-aged and older adults living with BD who have lengthy substance use histories. It is imperative that clinicians, other
healthcare professionals, and policymakers acknowledge personal theories that long-term substance users with comorbid psychiatric disorders maintain regarding self-medication. Such an understanding will enable professionals to tailor treatments and prevention opportunities to persons experiencing the negative health outcomes of substance use, but who may otherwise be hesitant to receive standard psychiatric treatments.

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New Research Posters

Poster Number: NR 1

The Effects of Telephone-Delivered CBT and Nondirective Supportive Therapy on Sleep, Health-Related Quality of Life, and Disability

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Introduction: The purpose of this study is to compare the effects of cognitive-behavioral therapy delivered by telephone (CBT-T) and telephone-delivered nondirective supportive therapy (NST-T) on sleep, health-related quality of life, and physical disability in rural older adults with Generalized Anxiety Disorder.

Methods: Participants included 141 rural-dwelling adults 60 years and older diagnosed with Generalized Anxiety Disorder. They were randomized to either CBT-T (n = 70) or NST-T (n = 71). Sleep was assessed with the Insomnia Severity Index. Health-related quality of life was assessed with the SF-36. Physical disability was assessed with the Pepper Center Tool for Disability. Assessments occurred at baseline, 4 months, 9 months, and 15 months.

Results: Insomnia declined in both groups from baseline to 4 months, with a significantly greater improvement among participants who received CBT-T (difference in improvement = 3.21; 95% CI, 1.23 to 5.20; nominal p = 0.002). Similarly, Mental Component and Physical Component Scores of the SF-36 declined in both groups, with a differential effect favoring CBT-T (PCS: difference in improvement = −6.71; 95% CI, −12.40 to −1.02; nominal p = 0.021; MCS: difference in improvement = −7.03; 95% CI, −12.91 to −1.15; nominal p = 0.020). Participants in both interventions reported declines in physical disability, although there were no significant differences between the 2 interventions (difference in improvement = 0.15; 95% CI, −0.03 to 0.33; nominal p = 0.109). Improvements in insomnia were maintained at the 15 month assessment (difference in improvement 15 months = 4.80; 95% CI, 2.62 to 6.98), while between-group differences shrank on the Mental Component (difference in improvement 15 months = −5.91; 95% CI, −13.06 to 1.24) and Physical Component Scores (difference in improvement 15 months = −4.94; 95% CI, −11.56 to 1.68) of the SF-36 by the 15 month assessment.

Conclusions: Telephone delivered CBT was superior to NST-T in reducing insomnia and improving health-related quality of life. The effects of CBT-T on sleep were maintained up to 1 year after completing the treatment.

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Poster Number: NR 2

Cognitive Correlates of Subregional Hippocampal Volumetry in Late Onset Depression: A 3 Tesla MRI Study

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**Introduction**: Gray matter structural abnormalities in fronto-subcortical and limbic networks and hippocampal volume reduction in particular have been associated with depression in elderly. However, there are many negative studies also. Some of the reasons for inconsistent findings could be heterogeneity in age of onset and specific reduction of sub-regional hippocampal volume. Using a different sample, this study attempted to replicate our previous study which suggested sub-regional hippocampal volumetric reduction in late onset depression (LOD). We also evaluated the correlation of cognitive function with subregional hippocampal volume.

**Methods**: 27 Elderly with LOD (mean age = 64.81 Yrs, SD = 4.49, 15 Females) and 22 healthy control subjects (mean age = 65.18 Yrs, SD = 3.49, 9 Females) group matched for age and sex were evaluated with 3 Tesla Magnetic Resonance Imaging (MRI) scan. They were assessed with Geriatric depression scale for severity of depression. Cognitive function was assessed with NIMHANS Neuropsychological Battery for Elderly (NNBE). Bilateral hippocampi were measured using MRI scans with the software ‘3D Slicer 3.4’ (http://www.slicer.org/). Hippocampus structure was outlined by a trained rater using the computer mouse controlled pointer and measured using semi-automated three-dimensional interactive method. The difference in sub-regional hippocampal volume between both groups was evaluated with ANCOVA test after controlling for age, sex and total brain volume. Spearman’s test was done to evaluate the relationship between hippocampal volumes and cognitive test performance.

**Results**: LOD group had significantly reduced left anterior hippocampal volume than healthy controls (1.74(0.32)ml Vs 2.01(0.35)ml, F = 7.50, p = 0.02). Total left hippocampal volume in LOD was smaller than control group at trend level significance (p = 0.06). There were significant positive correlations between hippocampal volume and immediate visual memory, working memory and delayed recall verbal memory particularly for both right and left anterior hippocampal sub regions in LOD group (p < 0.05). There was no significant correlation between depression severity and hippocampal volume.

**Conclusions**: LOD group has significantly reduced left anterior hippocampal volume compared to the healthy control group. The specific reduction in left anterior hippocampal volume could contribute to the cognitive impairment in LOD.

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**ANCOVA test for sub-regional Hippocampal volume.**

<table>
<thead>
<tr>
<th>Serial Number</th>
<th>Hippocampus Volume (mL)</th>
<th>Patients (N = 27)</th>
<th>Controls (N = 22)</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Right Anterior</td>
<td>1.95 (0.33)</td>
<td>2.18 (0.37)</td>
<td>3.39</td>
<td>0.07</td>
</tr>
<tr>
<td>2</td>
<td>Left Anterior</td>
<td>1.74 (2.01)</td>
<td>2.01 (0.35)</td>
<td>5.68</td>
<td>0.02</td>
</tr>
<tr>
<td>3</td>
<td>Left Posterior</td>
<td>1.57 (0.24)</td>
<td>1.63 (0.24)</td>
<td>0.039</td>
<td>0.85</td>
</tr>
<tr>
<td>4</td>
<td>Right Posterior</td>
<td>1.58 (0.27)</td>
<td>1.61 (0.27)</td>
<td>0.003</td>
<td>0.96</td>
</tr>
</tbody>
</table>

**Poster Number: NR 3**

**Atrophy in the Default Mode Network Following the Development of Delusions in Patients with Alzheimer’s Disease**

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**Introduction**: It is estimated that a third of Alzheimer’s disease patients develop delusional thoughts over the course of the illness. This delusional subset is faced with increased cognitive and functional impairment, caregiver burden, a faster rate of cognitive decline, and a higher rate of institutional care compared to AD patients without delusions. Imaging studies assessing delusions in AD have primarily found right-sided frontal lobe pathology. The asymmetric right-sided atrophy causes left-frontal predominance and release, which may create a hyperinferential state resulting in delusions. However, neuroimaging studies have not been consistent, as numerous brain regions have been implicated in delusional AD patients, including regions of the...
frontal, medial temporal, posterior parietal, and medial occipital lobes. In addition, most of the neuroimaging studies to date are cross-sectional in design. One of the few longitudinal studies, conducted by the authors, found decreased gray matter volume in the cerebellum and left posterior hemisphere following the development of delusions in 24 subjects with AD. The current study aims validate our findings by attempting to replicate them in a different sample of AD patients pre- and post-delusional onset.

**Methods:** We obtained clinical and neuroimaging data from the National Alzheimer’s Coordinating Center (NACC) database collected from September 2005 to May 2012. We identified 19 AD subjects with available T1 MRIs pre- and post-delusion. We conducted a voxel-based morphometry (VBM) analysis comparing the first delusional scan to the last non-delusional scan to determine changes in gray matter morphology. AD diagnosis was based on the National Institute of Neurological Disorders and Stroke-Alzheimer Disease and Related Disorders (NINCDS-ADRDA) diagnostic criteria for AD. Delusional symptoms were identified by the informant-completed Neuropsychiatric Inventory-Questionnaire (NPI-Q). VBM was conducted using SPM8 software on Matlab 2010 following the procedures outlined by Ashburner et al. 2010 for longitudinal data. Multiple comparisons were corrected using False Discovery Rate (FDR) at $p < 0.05$ with no masking. Significant threshold was set at 50 voxels to minimize false positives.

**Results:** The demographic data for the subjects pre- and post-delusion are found in Table 1. The development of delusions was associated with gray matter atrophy of 16 discrete voxel clusters, including the bilateral insula, left amygdala, right cingulate gyrus, right superior temporal gyrus, left middle temporal gyrus, right inferior frontal gyrus, bilateral precentral gyrus, right medial frontal gyrus, left cuneus, left cerebellar culmen, and right anterior cingulate (Table 2, Figure 1).

**Conclusions:** Many regions of atrophy following the onset of delusions were congruent to the anatomical regions of the Default Mode Network (DMN). The DMN is a resting-state network encompassing the ventral and dorsal medial prefrontal cortex (mPFC), posterior cingulate, inferior parietal lobule, medial temporal cortex, hippocampal formation, and the precuneus. Altered DMN connectivity has been found in a number of disorders of the mind, including in autism, schizophrenia, and Alzheimer’s disease. We found that the ventral and dorsal mPFC, medial temporal cortex, and the precuneus—core DMN regions—showed atrophy following the onset of delusions. The dorsal and ventral mPFC are involved in integrating social and sensory cues, mentalizing about self and others, and assigning meanings to situations. In addition, we also identified atrophy of the cerebellum, which has been previously implicated in psychotic symptoms in patients with schizophrenia. The cerebellum makes vast connections to the cerebrum and may be much more involved in cognition than previously thought. Therefore, breakdown in these areas could disrupt the ability to logically process sensory information in generating conclusions which, in turn, could give rise to delusions. Our findings are somewhat consistent with our prior longitudinal study in showing atrophy of the left superior temporal gyrus, bilateral insula, and the right medial frontal gyrus. A limitation of our study is that we did not include a non-psychotic severity-matched AD control for comparison, so it is not clear whether the structural changes are due to the onset of delusions or the progression of the AD severity. Nonetheless, this is the first study of its kind to associate delusional onset in AD with DMN atrophy.
Suprathreshold voxel clusters in longitudinal VBM analysis of 19 AD patients who developed delusions, FDR corrected 
p < 0.05. Extent threshold: k = 50 voxels, p = 0.714. Clusters are in decreasing order of significance.

Suprathreshold voxel clusters, p < 0.001, uncorrected

Poster Number: NR 4

Apathy and Regional Cholinergic Receptor Binding in Alzheimer’s Disease: 2-FA PET Imaging

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Introduction: Apathy is a common and disabling syndrome in Alzheimer’s disease (AD). Dysfunction of the cholinergic neurotransmitter system is a core component the neurodegenerative disease. Whether apathy or other neuropsychiatric symptoms are related to either focal or diffuse cortical cholinergic receptor alterations is not known. We used PET imaging and a novel nicotinic cholinergic receptor ligand to assess the relationship between apathy symptoms and regional cholinergic receptor binding in AD.

Methods: Twenty-nine patients who met NIA/AA criteria for probable AD dementia participated in the study. Clinical assessments included the Neurobehavioral Rating Scale, a measure of cognitive, psychiatric, and behavioral symptoms. The NRS Behavioral Retardation factor score (NRS-BR) was used as the measure of global apathy. The Scale for the Assessment of Negative Symptoms in Alzheimer’s Disease (SANS-AD) was used to assess three individual domains of apathy symptoms: cognitive (disinterest, poor attention), behavioral (poor initiative, limited environmental responsiveness), and emotional (blunted affect, unemotional). PET imaging was performed using the nicotinic receptor ligand 18F-2-FA to generate brain images of cholinergic receptor binding. SPM8 and a mask of pre-specified brain regions were used to assess the correlation between clinical variables and voxel 2-FA activity. Binding values were also extracted from significant voxel clusters to assess the magnitude of observed regional relationships.

Results: Mean age of the AD participants was 80.2, mean MMSE was 19.8, and mean NRS-BR score was 1.9. SPM analysis of 2-FA PET images revealed an inverse relationship (greater apathy associated with lower ligand binding) between NRS-BR score and 2-FA binding in bilateral anterior cingulate, bilateral lateral orbitofrontal cortex, and right hippocampus (voxel p < .01, uncorrected). With a more conservative statistical threshold (p < .001), the inverse relationship remained significant in the
right anterior cingulate cortex. When MMSE and NRS Anxiety/Depression factor score were included as a covariate in the model, the results were unchanged. The correlation coefficient between mean 2-FA binding in right anterior cingulate and NRS-BR score was −0.57. Analysis of PET ligand binding and SANS-AD subscores that reflect individual apathy domains revealed a significant inverse relationship between the SANS-AD behavioral domain subscore and 2-FA activity in right anterior cingulate and lateral orbitofrontal cortex (voxel p < .001). There was no significant relationship between the SANS-AD cognitive subscore or SANS-AD emotional subscore and 2-FA binding in any brain region.

**Conclusions:** Apathy in AD is related to lower availability of cholinergic receptors in bilateral anterior cingulate and lateral orbitofrontal cortex, independent of any effect of depression or global cognition. These relationships are strongest for the behavioral aspects of apathy, compared to the cognitive and emotional aspects. These findings support the view that regional cholinergic system dysfunction contributes to apathy in AD in addition to the cognitive deficits that occur, and that apathy is a fundamental expression of the AD neurodegenerative process. Improved understanding of mechanisms involved in the expression of apathy and other neuropsychiatric symptoms in AD will lead to better targeted and more effective treatments.

**This research was funded by:** U.S. Department of Veterans Affairs.

**Poster Number:** NR 5

**Benzodiazepine Use Reduces Cortical Beta-Amyloid Levels and is Not Associated with Progressive Cognitive Decline in Non-Demented Elderly Adults: A Pilot Study Using F18 -Florbetapir Positron Emission Tomography**

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3Keio University, Tokyo, Japan
4Jikei University, Tokyo, Japan
5McGill University, Montreal, QC, Canada

**Introduction:** Benzodiazepines (BZDs) are among the most commonly used psychotropics for anxiety, agitation, and insomnia in the elderly population. The adverse effects of BZDs on memory, including anterograde amnesia and impairment on long-term memory, have been well documented. However, studies investigating the effects of BZD use on progressive cognitive decline in elderly adults and increased risk of dementia yield conflicting results. While there are several epidemiological studies showing elevated incidence of cognitive decline and risk of dementia in BZD users, other findings suggest that BZD use is not associated with cognitive impairment or increased incidence of dementia in elderly individuals. In addition, several lines of investigation suggest that BZD exposure has a neuroprotective role against dementia; pre-clinical studies have showed that BZD administration reduces cortical β-amyloid plaques deposition in mice brains. To the best of our knowledge, no study to date has investigated whether BZDs attenuate the levels of cortical β-amyloid accumulation in humans.

**Methods:** Data was downloaded from the ADNI database on March 3rd, 2015. Previous BZD users (PRE+BZD) were defined as controls using any type of BZDs at least for 1 year before baseline clinical assessment. The duration of BZD use was calculated by subtracting the time duration between the medication date ended and medication date began. Dose of medication was calculated using diazepam equivalence dose of BZD. Dose times duration was calculated multiplying the duration of BZD usage and diazepam equivalent dose of BZD. Next, PRE+BZD participants were matched by age, gender, apolipoprotein E4 (apoE4) genotype, race, ethnicity, marital status, education years, and scores on the MMSE with controls that never took BZD (PRE-BZD). To access subjects’ memory functions, different domains (i.e. immediate recall, learning, and forgetting) of Rey Auditory Verbal Learning Test (RAVLT) were used. ROI-based AV-45 SUVR, reported from ADNI, was calculated by dividing the AV-45 mean SUV from each ROI by a composite reference region (average of whole cerebellum, brainstem/pons, and eroded subcortical white matter). Voxel-based confirmatory analysis was carried out in PRE+BZD and matched PRE-BZD users. Independent t-tests and chi-square tests were carried out to compare baseline demographic and clinical profiles. An analysis of covariance (ANCOVA), controlling for dose times duration of BZD and antidepressant taking, was performed to investigate AV-45 SUVR difference between the two groups. Continuous BZD users (CON+BZD) were defined as those controls who continued to use BZD from baseline to the endpoint of the 2 year follow-up. Similarly, CON+BZD participants were matched to non-demented elderly adults who never took BZD (CON-BZD) in their lifetime based on the aforementioned variables. A mixed-effect model for repeated measurements (MMRM) analysis was performed to investigate changes in cognition over 2 years between the CON-BZD and CON+BZD group. Another MMRM analysis was carried out to see changes in AV-45 SUVR between the two groups over 2 years.
Results: We included 15 PRE+BZD subjects (range of previous BZD taking years = 1 to 25, mean = 7.47 years) and 15 PRE-BZD subjects. PRE+BZD users showed higher forgetfulness and percentage of forgetting than matched PRE-BZD users. PRE+BZD users had lower frontal, cingulate, parietal, and temporal AV-45 SUVR than the PRE-BZD group. Voxel-based analysis showed that PRE-BZD group showed higher AV-45 SUVR in bilateral frontal and parietal regions, including Brodmann area 5, 8, and 9 in comparison to PRE+BZD users. No region showed higher AV-45 SUVR in PRE+BZD users than the PRE-BZD group. We also included 15 CON+BZD subjects (mean duration of BZD intake = 6.40 years) and 15 CON-BZD subjects. No difference was found in changes of scores on the MMSE, ADAS-13, RAVLT immediate recall and RAVLT percentage of forgetting between the CON+BZD and matched CON-BZD users over the 2 year period (p = 0.28, 0.67, 0.81 and 0.81, respectively). There was also no difference in changes in AV-45 SUVR between the groups.

Conclusions: PRE+BZD users had lower cortical Aβ accumulations in frontal, cingulate, parietal, and temporal regions, in comparison to the matched PRE-BZD group. Confirming our hypotheses, PRE+BZD users showed faster forgetfulness, as evident by their RAVLT forgetting scores and percentage of forgetting. However, in terms of progressive cognitive decline, there was no difference in changes in scores from different cognitive domains between CON-BZD and CON+BZD users. While BZD induces memory impairment, it may not be associated with progressive cognitive deterioration and seems to be associated with lower levels of cortical Aβ in elderly non-demented adults. Our finding was limited by only 2 years of follow-up and a small sample size. Future studies with a large sample of elderly individuals must be carried out to reproduce the findings from our study.

This research was funded by: N/A.

Comparison of demographic and clinical variables between non-demented elderly adults who have been taking benzodiazepine at least for a year (PRE+BZD) and matched non-demented elderly adults who have never taken benzodiazepine (PRE-BZD). * indicates statistical significance p < 0.05.

<table>
<thead>
<tr>
<th>Demographic variables</th>
<th>PRE+BZD (n = 15)</th>
<th>PRE-BZD (n = 15)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, years</td>
<td>75.36 ± 8.35</td>
<td>76.27 ± 4.18</td>
<td>0.71</td>
</tr>
<tr>
<td>Education years</td>
<td>16.73 ± 2.52</td>
<td>15.53 ± 2.53</td>
<td>0.20</td>
</tr>
<tr>
<td>MMSE score</td>
<td>29.07 ± 1.22</td>
<td>29.07 ± 1.28</td>
<td>1.00</td>
</tr>
<tr>
<td>CDRSB score</td>
<td>0.07 ± 0.18</td>
<td>0.13 ± 0.52</td>
<td>0.64</td>
</tr>
<tr>
<td>ADAS-11</td>
<td>4.53 ± 3.16</td>
<td>4.27 ± 1.49</td>
<td>0.77</td>
</tr>
<tr>
<td>ADAS-13</td>
<td>7.33 ± 5.00</td>
<td>7.20 ± 2.78</td>
<td>0.93</td>
</tr>
<tr>
<td>RAVLT immediate</td>
<td>47.00 ± 13.88</td>
<td>48.60 ± 6.80</td>
<td>0.69</td>
</tr>
<tr>
<td>RAVLT learning</td>
<td>6.07 ± 2.55</td>
<td>6.40 ± 2.35</td>
<td>0.71</td>
</tr>
<tr>
<td>RAVLT forgetting*</td>
<td>4.27 ± 2.34</td>
<td>2.60 ± 2.00</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td>RAVLT per. forgetting</td>
<td>41.14 ± 27.70</td>
<td>22.35 ± 20.15</td>
<td>&lt;0.05</td>
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<td>FAQ</td>
<td>0.13 ± 0.52</td>
<td>0.33 ± 0.72</td>
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<tr>
<td>TIV</td>
<td>1116.80 ± 119.51</td>
<td>1123.65 ± 94.72</td>
<td>0.87</td>
</tr>
<tr>
<td>Demographic variables</td>
<td>Number (frequency[%])</td>
<td>Number (frequency[%])</td>
<td>p-value (two-tailed)</td>
</tr>
<tr>
<td>CVD+</td>
<td>12 (80.00)</td>
<td>9 (60.00)</td>
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</tr>
<tr>
<td>Smoking+</td>
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<tr>
<td>White</td>
<td>13 (86.67)</td>
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<td>Hispanic/Latino</td>
<td>0 (0)</td>
<td>1 (6.67)</td>
<td>1.00</td>
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<td>Married</td>
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<td>Females</td>
<td>11 (73.33)</td>
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<td>0 ApoE4</td>
<td>9 (60.00)</td>
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<td>1.00</td>
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<tr>
<td>1 ApoE4</td>
<td>6 (40.00)</td>
<td>6 (40.00)</td>
<td>1.00</td>
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<tr>
<td>2 ApoE4</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>1.00</td>
</tr>
</tbody>
</table>

PRE+BZD and PRE-BZD groups were matched in all the demographic variables listed above (t-test, two-tailed for the continuous demographic variables). PRE+BZD users showed worse memory, as indicated by their scores on RAVLT forgetting and RAVLT percentage of forgetting, in comparison to the PRE-BZD group.
Stressful Life Events and Cognitive Decline: Sex Differences in the Baltimore Epidemiologic Catchment Area Follow-Up
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Introduction: It is well recognized that dementia is more prevalent in women than in men, yet the reasons for this disparity are unclear. Studies of the association between stress and cognition implicate variability in the stress response as potentially underlying the development of cognitive morbidity. Sex differences in stress dysregulation have been documented in humans and in animal models; in general, females tend to exhibit greater stress responses than males do. These responses are, however, influenced by normal hormonal changes, including puberty, pregnancy, and menopause. Thus, the magnitude of sex differences in the stress response changes over the lifespan such that the effect of age on the physiological response to stress is up to three times greater in women than in men. To the extent that stress could negatively affect cognition, women may be increasingly vulnerable to the cognitive effects of stress as they age. Although several studies have found sex differences in the effects of acute stress on cognition, whether there are sex differences in the association between stress exposure and cognitive decline has received scant research attention. This is a critical gap in the field of cognitive health and aging because such differences may underlie the disparity in dementia prevalence between men and women.

Methods: We examined whether the association between stressful life and traumatic events and cognitive change over approximately 11 years differed between 332 men and 572 women (age range 30 to 99 years) in the Baltimore Epidemiological Catchment Area (ECA) study. At ECA Wave 3 (1993–1996), participants reported distal (i.e., since 1981) and proximal (i.e., since 1992) stressful events (i.e., marriage, divorce/separation, death of spouse, death of other loved one, birth of child, child moving out, retirement, loss of job, life threatening injury/illness) and traumatic events (i.e., combat, accident, physical attack, rape, mugging/theft, witness to another being hurt or killed, receiving threats, natural disasters). Participants were administered the Mini Mental State Examination (MMSE) and a word-list memory test at Waves 3 and 4 (2004–2005). We created indices of stressful events and traumatic events by summing the number of each reported. We created cognitive change scores by subtracting test scores at Wave 3 from those at Wave 4.

Results: In multivariable models adjusted for age, years of education, and Wave 3 cognitive test performance on each respective test (e.g., change in word recall was adjusted for word recall score at Wave 3), a greater number of proximal stressful life events was associated with greater decline in delayed word recall ($B = -0.340; 95\%\ CI = -0.622, -0.058, p = 0.018$) and word recognition ($B = -0.383; 95\%\ CI = -0.714, -0.052, p = 0.023$) among women but not men. There were no associations between distal stressful life events or traumatic events (proximal or distal) and cognitive change in either sex.

Conclusions: These results extend earlier findings by indicating that women may be more likely than men to demonstrate cognitive decline in the context of environmental stressors. Differential cognitive vulnerability of women and men to stressful events may explain some of the sex differences in dementia prevalence, and stress reduction may help prevent cognitive decline in women.

This research was funded by: This research was funded by R01DA026652.

Peer Companionship for Suicide Risk Reduction: The Experience of Older Adults
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Introduction: Older adults who are socially isolated—defined as those with restricted social networks and/or loneliness—are at risk for reduced quality of life, physical illness, functional impairment, cognitive impairment, depression, and death (including suicide). In fact, the risk of premature mortality among those who are isolated is at least as large as the risk due to obesity, physical inactivity, alcohol misuse, and smoking. Yet, very little is known about how to reduce social isolation among older
Introduction: We performed a pilot 12-week trial of vilazodone designed to determine whether there are any differences in the effects between vilazodone and paroxetine, and to assess comparative tolerability in older depressed adults. We also compared changes in gene expression and in tolerability and safety.

Methods: Fifty six non-demented older adults diagnosed with major depression were randomized to receive vilazodone [N = 26] or paroxetine [N = 30] for twelve weeks. All received comprehensive neuropsychiatric and cognitive assessments, and gene expression.

Results: There were no baseline differences between the groups in demographic and clinical variables. No significant between group differences in depressed mood symptoms. But effect size estimates indicate that overall the Vilazodone group subjects
show increased improvement in mood compared to Paroxetine. No significant between group differences in mood measures. But effect size estimates indicate that overall the Vilazodone group subjects show increased improvement in mood compared to Paroxetine (on HAMD = −2.25 vs −1.31), accompanied by greater improvement in Health-related Quality of life (SF-36 scales). However, Paroxetine group showed greater improvement in several cognitive measures compared to Vilazodone with significant differences in the measures of attention and executive function. Of the 17 completers in the paroxetine group reported mild side-effects (mean of 1.4 (SD = 1.2)) and 16 reported some side-effects, with a mean of 1.4 (SD = 1.2) side-effects. There are no significant between group differences in cardiovascular risk factor scores (CVRF), resilience (AES), UPDRS or Cumulative illness rating scale (CIRS).

Conclusions: Both treatment groups demonstrated improvement in depression, health-related quality of life, and cognition. However, the VIL group had greater improvement in depression and quality-of-life, the PAX group had greater improvement in the several cognitive measures of attention and executive function. This pilot trial should inform future larger trials of geriatric depression.

This research was funded by: Forest Research Institute (Actavis).

Poster Number: NR 9

Aβ42 Plasma Levels are Increased in Cognitively Impaired Individuals Taking ACE Inhibitor and ARB Antihypertensives

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Introduction: Amyloid-beta (Aβ) is a peptide that accumulates in the brains of individuals with Alzheimer’s disease (AD) and is thought to contribute to the neurodegeneration underlying AD symptoms. Two forms of Aβ have been implicated in AD pathogenesis—Aβ42, which is the initial and predominant form composing plaques within brain tissue, and Aβ40, which accumulates in cerebral vasculature causing angiopathy. The ability of individuals with AD to clear Aβ40 and Aβ42 from brain is reduced compared to individuals without AD. The disease modifying potential of improved Aβ clearance from brain to blood is suggested in part by studies linking lower plasma Aβ levels with (a) greater cognitive decline among non-demented elderly, (b) a higher rate of incident AD, and (c) more rapid cognitive decline in individuals with AD. There is evidence from numerous studies that use of angiotensin converting enzyme inhibitor (ACE-I) or angiotensin receptor blocker (ARB) antihypertensive medication protects against both cognitive decline in nondemented elderly and AD progression; however, the mechanisms of this protective effect are unclear. This pilot study was an initial step toward investigating whether the protective effect of ACE-Is and ARBs on cognition may involve improved clearance of Aβ from brain to blood. The study objective was to determine whether cognitively impaired individuals with amnestic mild cognitive impairment (MCI), or dementia due to either probable AD or mixed dementia due to probable AD and vascular causes who are taking ACE-Is or ARBs have increased plasma levels of Aβ42 or Aβ40 compared to cognitively impaired control individuals not taking an ACE-I or ARB.

Methods: This was a naturalistic observational pilot study of 22 subjects enrolled in IRB-approved studies at the University of Maryland Medical Center and the Baltimore VA Medical Center. Cross sectional data on demographics, cognitive status, medication use, medical history, and blood pressure were obtained. Blood was drawn by venipuncture to assay plasma levels of Aβ40 and Aβ42 by ELISA kit and creatinine enzymatically according to manufacturer’s directions. Data from 12 subjects taking ACE-Is or ARBs were compared to data from 10 control subjects not taking these medications using two-tailed Student’s t test and chi square statistics.

Results: Groups did not differ significantly on demographic variables, Clinical Dementia Rating Scale scores, Mini-mental State exam scores, or blood pressure readings. Similarly, mean (sd) plasma creatinine levels (mg/dl) of subjects taking ACE-Is or ARBs [1.05 (0.29)] did not differ significantly (t = 0.81, df = 20, p = 0.43) from those of control subjects [0.94 (0.31)]. Mean (sd) plasma Aβ42 levels (pmol/l) of subjects taking ACE-Is or ARBs [9.2 (3.9)] significantly exceeded (t = 2.8, df = 20, p = 0.011) those of control subjects [5.4 (2.0)], while mean (sd) plasma Aβ40 levels (pmol/l) of subjects taking ACE-Is or ARBs [53.8 (13.6)] were not significantly greater (t = 1.9, df = 20, p = 0.070) than those of control subjects [43.4 (11.7)].

Conclusions: This is the first study to show an association between ACE-I or ARB use and increased plasma concentrations of Aβ42 in cognitively impaired individuals. The similarity between groups in plasma creatinine levels suggests that disparities in
renal function did not contribute to group differences in Aβ plasma levels. These findings provide the first evidence in cognitively impaired human subjects that the protective effect of ACE-Is and ARBs on cognition may involve improved clearance of Aβ from brain to blood.

Poster Number: NR 10

**Vascular Risk Factors and Subcortical Arteriosclerotic Leukoencephalopathy, but Not Alzheimer Lesion Load, are Associated with Development of Psychosis in Alzheimer’s Disease**

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**Introduction:** Psychotic symptoms, either the presence of delusions or hallucinations, are common in patients with Alzheimer’s disease (AD). It is estimated that 41% of this patient population develop some form of psychosis over the course of the illness, with one in three developing delusions and one in six developing hallucinations. AD patients with psychosis face a significantly worse outcome, including greater cognitive and functional decline, a more rapid disease progression, a higher rate of institutionalization and greater caregiver burden. Unfortunately, the neurobiological mechanisms underlying psychosis in AD are not well understood which hinders our ability to treat and manage these symptoms. There have been several studies that found that psychotic AD patients have greater plaque, neurofibrillary tangle, and tau pathology load compared to non-psychotic patients, but other studies have found no association between psychosis and AD pathology load. The current study aimed to determine the clinical and neuropathological correlates associated with psychosis in subjects with clinically or neuropathologically diagnosed AD.

**Methods:** Using data from the National Alzheimer’s Coordinating Centre (NACC) database, we analyzed the association between psychosis and 1) clinical variables, 2) neuropathological correlates, and 3) vascular risk factors. Our sample of 1073 consisted of an overlapping group of 890 clinically diagnosed AD (cAD) subjects with neuropathology data, and 728 neuropathologically diagnosed AD (npAD) subjects based on the Consortium to Establish a Registry for Alzheimer’s Disease (CERAD) criteria of “definite” AD with any clinical diagnosis. The two cohorts overlapped, as not all cAD subjects received a neuropathological diagnosis at autopsy and not all npAD patients were clinically diagnosed with AD. We used univariate tests to compare AD subjects with psychosis (P+), subcategorized into those who had delusions (D+), hallucinations (H+), or both delusions and hallucinations (DH+), with never-psychotic (P−) control subjects (Figure 1). Data from the informant-completed Neuropsychiatric Inventory Questionnaire (NPI-Q) were used to identify psychotic subjects.

**Results:** Over one third of the AD subjects developed one or more psychotic symptoms. The psychotic groups did not differ from controls on age of death, years of education, cognitive (MMSE, global CDR) or functional measures (FAQ). However, further division of the psychotic subgroups showed that subjects with hallucinations were more cognitively and functionally impaired at the last visit prior to death while delusional subjects were less impaired compared to non-psychotic subjects, consistent across cAD and npAD cohorts (Table 1). In the cAD cohort, psychosis was associated with greater AD lesion load as measured by the Braak stage, neuritic plaque density, and the NIA-Reagan criteria, but the association was not observed in the neuropathologically diagnosed AD cohort. In the neuropathological cohort, subjects with psychosis had a higher prevalence of subcortical arteriosclerotic leukoencephalopathy (SAL), vascular risk factors, particularly a history of hypertension and diabetes, and Lewy body staging.

Figure 1. Distribution of clinically diagnosed (cAD) and neuropathologically confirmed (npAD) Alzheimer’s disease subjects with neuropathological data into psychotic groups.
Table 1. p values of significant associations with psychosis. cAD psychotic groups were compared to cAD non-psychotic controls while npAD psychotic groups were compared to npAD non-psychotic controls

<table>
<thead>
<tr>
<th>Variable</th>
<th>cAD subjects</th>
<th>npAD subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>P+ D+ H+ DH+</td>
<td>P+ D+ H+ DH+</td>
</tr>
<tr>
<td>MMSE</td>
<td>p = 0.01</td>
<td>p &lt; 0.001</td>
</tr>
<tr>
<td>Global CDR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FAQ</td>
<td>p &lt; 0.001</td>
<td>p &lt; 0.001</td>
</tr>
<tr>
<td>Braak</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neuritic Plaque</td>
<td>p &lt; 0.001</td>
<td>p &lt; 0.001</td>
</tr>
<tr>
<td>NIA-Reagan</td>
<td>p &lt; 0.001</td>
<td>p &lt; 0.001</td>
</tr>
<tr>
<td>Lewy Bodies</td>
<td>p = 0.004</td>
<td>p = 0.026</td>
</tr>
<tr>
<td>Subcortical arteriosclerotic</td>
<td>p = 0.003</td>
<td>p = 0.056</td>
</tr>
<tr>
<td>leukoencephalopathy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hypertension</td>
<td>p = 0.008</td>
<td>p = 0.064</td>
</tr>
<tr>
<td>Diabetes</td>
<td>p = 0.054</td>
<td>p = 0.005</td>
</tr>
</tbody>
</table>

*p values compared to respective non-psychotic control subjects.

**Conclusions:** In the clinical AD cohort, psychosis appeared to be associated with markers of AD pathology (plaques and tangles), but this association was not found in the neuropathologically confirmed AD subjects. The observed finding in the clinical AD group appeared to be driven by clinical misdiagnosis, specifically the false positive diagnosis of P- subjects in this cohort. In the correctly diagnosed group, psychosis is associated with SAL, vascular risk factors such as hypertension and diabetes, and, as previously observed, Lewy body pathology. These factors may mediate and contribute to the development of psychosis in the AD population.

**This research was funded by:** Canadian Institutes of Health Research (CIHR) Grant number 313912.

**Poster Number:** NR 11

**Postmenopausal Cognitive Deficit in Relation to Androgens’ Level as Well as Apolipoprotein E Polymorphism**

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**Introduction:** Receptors for estrogens, androgens, and progesterone are widely distributed in the brain and expressed within discrete neural populations, and hormones and especially hormonal changes may influence brain function through other mechanisms. Changes in the hormonal balance after menopause have the potential to affect cognitive function and mood as well as physiological processes linked to cognitive aging and late-life disorders, such as Alzheimer’s disease. A number of studies have examined those and most have focused on 17β-estradiol permanent reduced after menopause. Findings related to cognition in this setting are, however inconsistent. The focus of this study research was to assess cognitive functions in relation to androgens and specifically testosterone and dehydroepiandrosterone in postmenopausal women as well as correlation between cognitive functions and these two androgens according to of apolipoprotein E polymorphism.

**Methods:** The group of 402 women was recruited to the study (minimum two years after the last menstruation, FSH more than 30 U/ml and no dementia signs on Montreal Cognitive Assessment). Computerized battery of Central Nervous System Vital Signs test was used to diagnostic cognitive functions. APOE genotype was performed by multiplex PCR. TTE and DHEA in the blood serum we assessed for further statistical correlations analysis.

**Results:** In the group of postmenopausal women higher testosterone concentration corresponded with the lower scores for NCI, memory and psychomotor speed. Presence of at least one ε4 APOE allele potentiated testosterone’s negative influence on...
cognitive functions. As for DHEA, high level of normal range of levels was related to better results for memory both verbal and visual in the examined women after menopause. APOE polymorphism did not modify the relationship between DHEA concentration and scores for cognitive functions.

**Conclusions:** Hormonal balance variations after menopause may influence brain processes concerned with cognition especially memory and psychomotor speed. Effects observed may be related to androgens influence on higher cortical functions in the changed hormonal dynamics of postmenopausal period.

**Poster Number:** NR 12

**Access to Psychiatrist Services for Older Adults in Long-Term Care: A Population Based Study**

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**Introduction:** There is a high burden of mental health disorders (MHD) among older adults in long-term care (LTC) settings. Despite the high need for psychiatric care, there may be limited access to consultations and follow-up care provided by psychiatrists for this population. At the present time there is limited information available about the overall access to psychiatric services among older adults in LTC or the factors that are associated with receiving psychiatric care in this population.

**Methods:** We completed a retrospective cohort study involving all adults age 66 years and older who resided in LTC facilities in the province of Ontario, Canada between 2012 - 2013. We used linked administrative databases at the Institute for Clinical Evaluative Sciences which contains detailed information about demographics, psychiatric and medical history, medication use, physician outpatient and inpatient services, hospitalization data, and information derived from the Resident Assessment Instrument—Minimum Dataset version 2.0. Among this population we then determined the percentage of LTC residents who received any psychiatric care in the 90 days following participants admission to LTC or at the time of their first annual reassessment. Psychiatric care was categorized as new consultation or follow-up care and the location of the psychiatric service was described. The characteristics of participants who did and did not receive any psychiatric service were then described and compared. Multivariable logistic regression was then utilized to determine the odds ratio and 95% confidence intervals for factors associated with receiving psychiatric services.

**Results:** A total of 65,896 unique participants were included in the study cohort. Among these participants, 28,054 (42.6%) had identified psychiatric need. Overall, 2,870 (4.4%) of older adults in LTC received any psychiatric service within 90 days including 2.1% who received a new consultation and 2.8% who received follow-up care and majority of services were provided in LTC. Receipt of any psychiatric service was positively correlated with younger age, male gender, higher educational achievement and income, prior history of major mental disorders, previous receipt of psychiatric services, indicators of psychiatric need, and access to other specialist physician services. Residence in an urban LTC facility and residence in a LTC facility with a greater number of beds were also associated with increased access to psychiatric services.

**Conclusions:** Access to psychiatric services in LTC facilities in Ontario is limited in comparison to the high need for these services. Several factors other than psychiatric history or symptoms are associated with access suggesting inequities in access to care for this vulnerable population. Improving the distribution of psychiatric services in Ontario may help address some of these inequities and additional psychiatric resources are likely required to meet the needs of the population.

This research was funded by: This project was funded through the Ontario Research Coalition.
Introduction: Older adults who are socially isolated—defined as those with restricted social networks and/or loneliness—are at risk for numerous suicide risk factors, including reduced quality of life, physical illness, functional impairment, depression, as well as suicide ideation, attempts, and suicide deaths. The premise of this work is that among depressed older adults, social disconnection is both a risk factor for late-life suicide and a potential intervention target. Despite the negative consequences for late-life mental health, little is known about how to reduce social isolation and increase social engagement. Here, we present the rationale and feasibility results of a project testing the use of the ENGAGE intervention (Alexopoulos & Areán, 2014; Alexopoulos, Raue, Kiosses, Seirup, Banerjee, & Areán, 2014) as a means of increasing social engagement, and thereby reducing risk factors for suicide. ENGAGE is designed to work primarily through “reward exposure,” which, in line with RDoC principles (e.g., Insel, 2014), targets the behavioral expression of positive valence systems’ dysfunction by having patients re-engage with pleasant, physical, or social activities they may have stopped doing because of depression. For this trial, subjects were focused solely on social activities because the hypothesis of the study is, in line with the Interpersonal Theory of Suicide (Van Orden et al., 2010), that targeting social engagement will increase positive connections and contributions to others, thus reducing two proximal risk factors for suicide—thwarted belongingness and perceived burdensomeness, thereby reducing suicide risk. We report here the experience and outcomes of the first three subjects enrolled, with the objectives of demonstrating that these older adults would complete 10 sessions, develop action plans based exclusively on social engagement, and demonstrate reductions in thwarted belongingness, depression, and suicide risk. We hypothesized that the changes in thwarted belongingness would temporally precede changes in depression and suicide risk.

Methods: Three older adults (age 60 or older) who were seeking services at a geriatric mental health outpatient clinic participated. All three completed 10 in-home sessions of ENGAGE (over approximately 10 weeks) delivered either by a clinical psychologist (KVO) or a geriatric social worker. Both therapists received research-grade supervision in ENGAGE. Outcomes were measured at baseline, 3 weeks, 6 weeks (mid-treatment), and 10 weeks (post-treatment). Because post-treatment data was missing for one subject, outcomes at 3 and 6 weeks are presented. Depression symptom severity was measured with the Quick Inventory of Depressive Symptoms (QIDS). Suicide risk was measured with the short form of the Geriatric Suicide Ideation Scale (GSIS). Thwarted belongingness was measured with the Interpersonal Needs Questionnaire (INQ).

Results: All three subjects were willing and able to generate social engagement goals each session; e.g., taking a walk to see a friend; going to get ice cream with her daughter; helping out by walking the neighbor’s dog. Depression severity decreased...
(mean scores 12.5, 9.75, 7.33), suicide risk decreased (11.25, 8.00, 8.67), and thwarted belongingness decreased slightly (6.25, 6.25, 5.67). Qualitative outcomes indicate that subjects believed that increased social engagement lead to greater positive mood and well-being. One subject stated: “Socializing, it helps my mood to get out. Being around people does lift you up.” Another stated, “I have a reason to keep going, a direction, a family. I sent 83 Xmas cards! I have people in my life. Alone wraps itself around you like an ugly blanket and you lose track of the world you have available to you. My world is still out there. Action plans helped aim me—direction, got me back on track. [After the program] I will concentrate on expanding my outside contacts (like the senior center) and even if I’m here, I’ll do things to feel the outside connections, like getting on the phone”. 

**Conclusions:** Conclusions: It is feasible to focus solely on social engagement goals with the ENGAGE treatment. Even with this small sample, decreases in suicide risk and depression severity were evidenced. Changes in the proposed treatment target—thwarted belongingness—were smaller than expected and occurred later in the treatment than expected. It may be that even very small decreases in thwarted belongingness are associated with reductions in suicide risk; alternatively, another target/mechanism may be accounting for the decrease in suicide risk evidenced in these subjects. A larger randomized pilot trial is underway (K23MH096936) to test the hypothesis generated from the Interpersonal Theory of Suicide that reducing thwarted belongingness is a mechanism whereby interventions reduce suicide risk in later life.
**Introduction:** Pseudobulbar affect (PBA) is a neurologic condition characterized by laughing and crying episodes that are uncontrollable, disruptive, and generally incongruent with social context and prevailing mood. PBA can occur secondary to a variety of unrelated neurologic conditions such as traumatic brain injury (TBI), stroke and Alzheimer’s disease. It is estimated that approximately 9% of nursing home residents have symptoms suggestive of PBA. Dextromethorphan/quinidine (DM/Q) is the only treatment FDA-approved for PBA; approval was based on phase 3 studies in patients with PBA secondary to amyotrophic lateral sclerosis or multiple sclerosis. The PRISM II study was conducted to provide additional data on DM/Q effectiveness in persons with PBA secondary to dementia, stroke, or TBI. Here we present the PRISM II results for older patients compared with younger patients.

**Methods:** PRISM II was an open-label, US, multicenter, 90-day trial. Eligible patients had a Center for Neurologic Study-Lability Scale (CNS-LS) score ≥13 (scale range, 7 [no symptoms] to 35 [maximum]); a clinical diagnosis of PBA; and dementia (any type), stroke (ischemic or hemorrhagic), or nonpenetrating traumatic brain injury (TBI) that was medically stable ≥3 months. Patients with severe dementia (Mini-Mental State Examination [MMSE] score < 10), severe depression, history of psychosis or bipolar disorder, unstable medical illness, or contraindications to DM/Q were excluded. All patients received DM/Q 20/10 mg twice daily (once daily during Week 1). The primary outcome was mean change in CNS-LS score from baseline to Day 90/Final Visit. Secondary endpoints included PBA episode count, impact of PBA episodes on quality of life assessed from 0 (not at all) to 10 (significantly) on a visual analog scale (QOL-VAS), clinical and patient/caregiver global impression of change (CGI-C and PGI-C), the 9-item Patient Health Questionnaire (PHQ-9) assessing depressive symptoms, the MMSE assessing cognition, and a patient satisfaction rating. Safety measures included adverse events (AEs) and vital signs.

**Results:** Of 367 patients enrolled, 152 (41%) were aged ≥65 years, including 70% of the 134 patients with dementia, 41% of the 113 stroke survivors, and 10% of the 120 patients with TBI. Significant improvements in PBA symptoms were seen at Day 90/Endpoint compared to baseline for both older and younger patients, including mean (SD) CNS-LS reductions (primary outcome) of 6.9 (5.5) and 8.3 (6.4) points, respectively, and estimated PBA episodes count reductions of 72.3% and 72.9%, respectively (P < .001 for all). Significant reductions from baseline were also seen for the QOL-VAS and PHQ-9 measures in both age groups (P < .001). On the CGI-C and PGI-C assessments, 74.8% and 70.3% of participants aged ≥65 years were rated as much or very much improved at Day 90/Final Visit (younger patients: 78.0% and 74.0%). The MMSE score improved in both groups, (0.44 points [≥ 65 years] and 0.7 points [<65 years]) and but did not reach significance in the older cohort (P = .149 and .003, respectively); 71.2% [≥ 65 years] and 78.7% [<65 years] were somewhat or very satisfied with DM/Q treatment. A total of 38.2% and 34.4% [aged ≥65 and <65 years] experienced one or more AEs. Most AEs were of mild or moderate intensity; the most commonly reported AEs in older patients were urinary tract infection (5.9%), diarrhea (3.9%), and headache (3.9%); corresponding incidence in patients aged <65 years were 0.5%, 6.5% and 4.2%, respectively. In all, 12.5% vs 16.7% [aged ≥65 and <65 years] experienced any AE deemed potentially related to DM/Q treatment and 13.2% vs 7.4% had AEs leading to study discontinuation. Serious adverse events were reported for 9.2% and 4.2%, respectively; none were deemed to be related to DM/Q treatment.

**Conclusions:** PRISM II is the first study to prospectively evaluate DM/Q effectiveness for patients with PBA secondary to dementia, stroke, or TBI. DM/Q treatment was associated with PBA symptom reduction that was similar to that observed in prior phase 3 controlled trials in patients with PBA secondary to ALS or MS. Symptom improvement was clinically meaningful as judged by patient/caregiver, and clinician global ratings of change and improvement in ratings of depressive symptoms and PBA impact on QOL. DM/Q treatment was generally well-tolerated with a low overall incidence of AEs. These data expand the experience with DM/Q in older patients and support the effectiveness of DM/Q as a PBA treatment consistent with approved product labeling. Reference: 1. Zarowitz BJ, O’Shea T. Consil Pharm 2013;28:713-22. 2. Foley K, et al. Int J Geri atr Psychiatry. In Press.

This research was funded by: Supported by: Avanir Pharmaceuticals, Inc.
Introduction: 5-HT6 receptor antagonists offer a new approach to the symptomatic treatment of AD. 5-HT6 receptors are almost exclusively expressed within the CNS, in areas critical to memory and executive function. Preclinical data support that idalopirdine (Lu AE58054), a selective 5-HT6 receptor antagonist, when added to the cholinesterase-inhibitor donepezil, may potentiate cholinergic and glutamatergic transmission and neural oscillations in the hippocampus and frontal lobes, and reverse working memory deficits.

Methods: A Phase II study explored the efficacy/safety of 90 mg/day of idalopirdine as add-on to donepezil background therapy in 278 individuals with moderate AD (MMSE 12–19) using a double-blind, placebo-controlled, parallel-group design. Based on Phase II results, a global Phase III program was launched to elucidate the efficacy and safety of idalopirdine (10–60 mg/day) in individuals aged ≥50 years with mild and moderate AD (MMSE 12–22) on stable background cholinesterase-inhibitor therapy. The program consists of three 24-week, double-blind, placebo-controlled studies involving ~2500 patients worldwide, and a 6–12 month, open-label extension study in ~1700 patients.

Results: Positive Phase II results were observed with idalopirdine add-on treatment which included statistically significant benefits on the primary endpoint of cognition; supportive data consistent with potential benefits on function and clinical global impression instruments; and possible amelioration of anxiety and hallucinations while overall behavioral effect not significant. Iodalopirdine add-on treatment was generally safe and well-tolerated. Transient elevations in transaminases (ALT/AST) were observed; these were asymptomatic and normalized whether affected individuals continued on treatment or were withdrawn.

Conclusions: A large Phase III program aims to validate and extend promising Phase II results for idalopirdine add-on treatment to donepezil/other cholinesterase inhibitors in a broader population of individuals with mild and moderate AD. Recruitment is ongoing.

This research was funded by: Lundbeck LLC provided support for this poster.

Poster Number: NR 17

AlzhaTV: A Smart Phone App for Managing Depression, Anxiety, and Agitation in Nursing Home Dementia Patients

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3Georgia State University, Atlanta, GA
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Introduction: Depressive spectrum, anxiety, agitation, and neuro-psychiatric symptoms are highly prevalent in nursing home dementia patients. As severity of dementia worsens, the affective symptoms may not change but the neuro-psychiatric symptoms including confusion, delusions, hallucinations, agitation may worsen. Many non-pharmacological interventions have been found to be effective in decreasing depression and problem behaviors. More specifically, one to one social contact was found to be superior in preventing behavioral disturbances, however, many times, such contact is not possible for a variety of reasons. To address this, we have designed and developed a smart phone system that allows family members to stay connected with their loved ones, suffering from dementia while at the nursing homes.

Methods: We have designed and developed a smart phone app called AlzhaTV which allows families and friends to make and upload videos (to reorient to reality, reassure safety, encourage to comply with medications, co-operate with care, or to address the theme of behavioral disturbance). These videos are instantly displayed on the patient’s television. These videos can be displayed on auto, every 15 minutes, every 30 minutes, hourly, or daily frequency, suited to the patient’s level of cognition. We are currently evaluating the effectiveness of AlzhaTV apps for ethnically diverse male and female patients, between the ages of 61 to 95. These patients have dementia (due to Alzheimer’s, Parkinson’s or head injury), depressive disorders, and anxiety disorders. The families of these patients have made anywhere from 6 to 25 videos, which are being played on a daily basis. We are following the patients every week for a planned 12-weeks period. We administered MMSE, CAM, NPI-NH, and GDS initially and then every four weeks.

Results: The immediate response of patients has been extremely positive. The family members are also very satisfied and relieved. It appears that the patients are showing some improvements in their symptoms and not needing their PRN medications. The preliminary results are shown in Table 1. We plan to present detailed results at the conference along with AlzhaTV app for the conference attendees.

Conclusions: Non-pharmacological interventions for dementia patients in nursing home have a lot of potential from both improved care as well as reduced overall healthcare cost. In this paper, we present AlzhaTV, a smart phone app for both iOS
and Android operating systems. The app is being tested with multiple patients and their families, and the preliminary results are highly encouraging. More detailed results of ongoing testing will be presented at the conference.

### Table 1. Short-term and ongoing evaluation of AlzhaTV app with 8 patients

<table>
<thead>
<tr>
<th>Patient (Age, Race, Gender and Diagnosis)</th>
<th>Baseline behavior</th>
<th>Immediate effect after using the App</th>
<th>Week 1</th>
<th>Week 2</th>
<th>Week 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>95 WM, Dementia, Alzheimer’s late onset</td>
<td>Confused, disoriented, hallucinating, very restless and impulsive</td>
<td>Happily surprised to see his daughter on TV, calmed down, watched TV and went to sleep, no agitation rest of the week</td>
<td>App used after agitation, but still somewhat effective</td>
<td>Proactive use of app, significant reduction in behavioral disturbances, did not require PRN meds</td>
<td>Continued proactive use of AlzhaTV, great improvement, no PRNs given for whole week</td>
</tr>
<tr>
<td>61 WM, Major Depression: recurrent, severe</td>
<td>Severely withdrawn, depressed, tearful, and hopeless/helpless</td>
<td>Smiling, talking more and very happy to see grandchildren</td>
<td>Family made a lot of videos and helped depression significantly</td>
<td>Not many new videos, physical condition got worse</td>
<td>Some improvement and less depressed</td>
</tr>
<tr>
<td>69 WM, Parkinson, Depression, Psychosis</td>
<td>Very needy, attention seeking, nervous, depressed, paranoid, and constantly asking for bathroom</td>
<td>Happy, relaxed, smiling and asking for more videos</td>
<td>Lots of videos, continued improvement in behavior, not needing PRN meds for anxiety</td>
<td>Continued good improvement</td>
<td>Continued improvement, decreased needy behaviors, no PRNs given</td>
</tr>
<tr>
<td>88 WM, MDE</td>
<td>Moderately depressed, and difficulty adjusting to nursing home</td>
<td>Happy to see grandchildren</td>
<td>Continued improvement</td>
<td>Major Wi-Fi problems</td>
<td>Major Wi-Fi problems</td>
</tr>
<tr>
<td>72 AAF, Depression, ARF on vent</td>
<td>Neurocognitive disorder</td>
<td>Opened up eyes and became responsive</td>
<td>Continued improvement</td>
<td>Major Wi-Fi problems</td>
<td>More responsive to videos</td>
</tr>
<tr>
<td>87 HF, AD, Tinnitus</td>
<td>Screaming, irritable and depressed</td>
<td>Happy to see family and enjoyed</td>
<td>Got bored on auto frequency of videos, but less agitated</td>
<td>Diminished screaming</td>
<td>Diminished screaming</td>
</tr>
<tr>
<td>87 WM, AD, PD</td>
<td>Restless, impulsive, and agitated/angry</td>
<td>Calmed down and slept</td>
<td>Continued improvement but required PRN meds</td>
<td>Continued improvement &amp; did not require PRN meds</td>
<td>Continued improvement &amp; did not require PRN meds</td>
</tr>
<tr>
<td>66 WM, TBI, Dementia, Delirium</td>
<td>Extreme agitation, hallucinating, impulsive, and crawling out of bed</td>
<td>Happily surprised to see his wife and himself on TV</td>
<td>Confused, restless and impulsive</td>
<td>Not much change</td>
<td>Stankled with a loud video</td>
</tr>
</tbody>
</table>

Poster Number: NR 18

**A Geriatric Telepsychiatry Clinic: Quality Specialty Care From Afar**

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Introduction: Due to the significant difficulties for rural elderly patients in accessing transportation and a limited supply of geriatric specialists, we designed a geriatric telepsychiatry clinic for rural veterans that would provide quality care in a comfortable, safe setting with minimal disruptions for the patient. The following study examines both an example of a typical
Repetitive Transcranial Magnetic Stimulation for Apathy in Mild Cognitive Impairment

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2University of Arkansas for Medical Sciences, Little Rock, AR

Introduction: Mild cognitive impairment (MCI) is a precursor of dementia. Prevalence of MCI is increasing with over 10,000 baby boomers turning 65 years of age each day. Apathy, the most common behavioral problem in MCI, affects over 60% of these patients. The presence of apathy increases the chance of MCI patients converting to Alzheimer’s Dementia. There is a urgent need for non-pharmacological interventions for apathy since most of these patients have multiple comorbidities and on already several medications, making pharmacological treatments less attractive. Repetitive Transcranial Magnetic Stimulation (rTMS), a non-invasive tool, has been recently approved for treatment of refractory depression. Since dysfunction in the frontal lobe of the brain is seen in patients with apathy, rTMS to the frontal lobe might be helpful in treating the same. This study used an enhanced sham treatment which is a major technological advancement in the field of rTMS treatment. Our objective was to determine the efficacy of rTMS to the dorsolateral prefrontal cortex (DLPFC) in treating apathy in MCI in comparison to sham treatment. To compare the efficacy of rTMS to the DLPFC on executive function in MCI in comparison to sham treatment.

Methods: Our team conducted a randomized sham controlled double blind cross-over study of daily rTMS. Subjects with MCI and apathy meeting strict inclusion and exclusion criteria were randomized to a total of 20 sessions of treatment (2 weeks sham, 2 weeks rTMS, with 4 weeks of washout period). Subjects were randomly assigned to rTMS or sham treatment after consent. After 2 weeks of treatment there was a 4 week period with no treatment. At the end of the 4-week wash out period, subjects were crossed over to the next treatment arm (i.e. those who received rTMS in the beginning will receive sham treatment and vice versa). Subjects were followed for four additional weeks after treatment. Apathy was assessed using the Apathy Evaluation Scale. Memory, executive function, functional status and caregiver burden were assessed.

Results: 79 subjects were screened. 14 met all inclusion and exclusion criteria and were randomized. Increased risk for seizures such as being treated with medications that lower seizure threshold was the main reason for screen failures followed by having implants that would preclude them from rTMS treatment. Treatment parameters were set at 10hz stimulation, 120% Motor
threshold (MT), and 3000 pulses per treatment although there were protocols in place to lower the MT if necessary. One subject could not tolerate the treatment due to discomfort and was removed from the study. Mean age was 65.6 (±9.3) years, 4 were Caucasian and 5 African American and 8 were male and 1 female. Mean MMSE score was 25.6 (±2.6), and AES was 40.1 (±5.8) at baseline. Treatment site discomfort was the most common adverse event. None of the subjects had a seizure. Data has been double entered and cross-checked. We are currently working with the sponsor to unblind the coils. Wilcoxon signed ranks tests comparing change scores (treatment—baseline) on the AES and MMSE during active and sham treatment will be performed. Treatment order effects will be determined using the Mann-Whitney U test. Carryover effects will be tested by the Wilcoxon signed ranks tests to compare baseline scores for each treatment phase.

Conclusions: Preliminary analyses suggest that rTMS could be used safely in patients with MCI. Definitive study with large sample size and longer duration of treatment is needed.

This research was funded by: UAMS TRI VISN 16 MIRECC VISN 16 Pilot grant Neuronetics.

Poster Number: NR 20

Association between Sleep, Function and Disease Stage in Home Dwelling Persons with Dementia: The Pilot Healthy Patterns Sleep Study
Nancy Hodgson, PhD, RN, FAAN; Albert Safi, MHS

Johns Hopkins University, Baltimore, MD

Introduction: Poor sleep quality has been associated with reduced daily functioning in older adults, however previous studies have used subjective measures of sleep and did not include individuals with dementia. As individuals age, especially those with dementia, the amount and quality of their sleep suffers. The aim of this cross-sectional study was to determine whether the objective measures of sleep calculated from 10 days of actigraphy data were associated with functioning in home dwelling persons with dementia.

Methods: It was hypothesized that impairment in sleep quality as measured according to more wake after sleep onset (WASO), number of night awakenings (NNA) and less total sleep time (TST) would be associated with poorer physical and social functioning, as measured by the Barthel Index and Promis measures, respectively. A Basic MotionLogger by Ambulatory Monitoring was used to collect actigraphy data over the course of a 10 day behavioral intervention. Questionnaires and assessments were delivered before and after the intervention. The sample included 18 participants (mean age 81.8) in the Healthy Patterns Sleep Study. Statistically significant Pearson correlation coefficients (r) were generated after a number of analyses.

Results: In age adjusted models, WASO was associated with total Barthel scores \( r = -0.773 \) (\( p = .007 \)) and deficits in bathing \( r = -0.817 \) (\( p = .004 \)), dressing \( r = -0.728 \) (\( p = .013 \)), work related activity \( r = -0.526 \) (\( p = .032 \)) and leisure activity \( r = -0.526 \) (\( p = .038 \)). NNA was associated with incontinence of bowel \( r = -0.696 \) (\( p = .019 \)) and bladder \( r = -0.696 \) (\( p = .019 \)), deficits in leisure activity \( r = -0.630 \) (\( p = .013 \)) and socializing with peers \( r = -0.504 \) (\( p = .038 \)). TST was associated with deficits in physical transfers but was not associated with measures of social function.

Conclusions: There are important nuances regarding the effects of sleep quality on daily function. The above correlations indicate significant relationships between deficits in daily function and poor sleep quality. Poor sleep quality may lead to worsening daily function as individuals age, especially individuals diagnosed with some form of dementia. Deteriorating daily function due to factors related to aging may indirectly affect sleep quality, further confounding the related associations of sleep, function, and mental health. Future research is needed to identify the underlying mechanisms of these associations.

This research was funded by: NIH P30 Grant.

Poster Number: NR 21

The Association of Neuropsychiatric Symptoms of Dementia with Medicare Costs
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2Center for Clinical Management Research, VA Ann Arbor Healthcare System, Ann Arbor, MI
3Department of Medicine, University of Michigan, Ann Arbor, MI

Am J Geriatr Psychiatry 24:3, Supplement 1 S151
Introduction: The neuropsychiatric symptoms (NPS) of dementia are common in all forms and stages of dementia. Symptoms are distressing to caregivers, associated with increased caregiver burden, additional patient functional limitation, earlier institutionalization, and mortality (1, 2). Previous estimates of the economic costs associated with NPS have primarily focused on additional caregiving time, which is substantial (3). The few prior analyses of the impact of NPS on healthcare costs were regional samples and generated estimates based on caregiver reports of utilization (4,5). The aim of this analysis is to use nationally-representative data to describe whether the burden of NPS is associated with increased Medicare expenditures and whether specific symptoms are associated with increased costs.

Methods: The Aging, Demographics, and Memory Study (ADAMS; conducted 2002–2008) is a sub-study of Health and Retirement Study (HRS) and included an in-home respondent assessment and informant interview by a nurse and neuropsychology technician ($n = 856$). Information collected included the 10-item Neuropsychiatric Inventory (NPI), which assesses the following 10 NPS domains: delusions, hallucinations, agitation/aggression, depression, apathy, elation, anxiety, disinhibition, irritability, and aberrant motor behaviors. Each domain score (range 0–12) is summed to generate the NPI total (range 0–120). For each domain, the caregiver also reports how “emotionally distressing” they found the behavior (range 0–5; 0–50 total). Dementia diagnosis was by consensus of a multidisciplinary review panel. Analysis was limited to those patients diagnosed with dementia who provided consent for linkage of data with Medicare Parts A & B claims ($n = 332$), from which cost data were derived using 6 months before and after the ADAMS assessment with data censored 60 days before death. Adjusted models tested the association of overall NPS and specific symptom groups groups (psychosis, affective, agitation), as well as associated caregiver distress, with Medicare costs.

Results: Respondent characteristics are presented in Table 1. The median NPI total was 2 (interquartile range [IQR] 0–12); the median NPI caregiver distress score was 1 (IQR 0–5). 23.5% of respondents had psychotic symptoms (delusions and/or hallucinations) with a median NPI psychosis score (range 1–24) of 5 (IQR 1–4); associated caregiver distress was 2 (IQR 1–4).

<table>
<thead>
<tr>
<th>Variable</th>
<th>Unweighted estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Medicare Costs, $, mean (sd)</td>
<td>11,436 (15,664)</td>
</tr>
<tr>
<td>25th percentile</td>
<td>1,170</td>
</tr>
<tr>
<td>Median</td>
<td>4,516</td>
</tr>
<tr>
<td>75th percentile</td>
<td>16,060</td>
</tr>
<tr>
<td>Age, y, mean (sd)</td>
<td>85.7 (6.6)</td>
</tr>
<tr>
<td>70–79, %</td>
<td>18.1</td>
</tr>
<tr>
<td>80–89</td>
<td>52.4</td>
</tr>
<tr>
<td>&gt;= 90</td>
<td>29.5</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>68.1</td>
</tr>
<tr>
<td>Male</td>
<td>31.9</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
</tr>
<tr>
<td>Non-Hispanic white</td>
<td>70.5</td>
</tr>
<tr>
<td>Non-Hispanic black</td>
<td>22.0</td>
</tr>
<tr>
<td>Hispanic</td>
<td>7.5</td>
</tr>
<tr>
<td>Years of education</td>
<td></td>
</tr>
<tr>
<td>0–11</td>
<td>60.8</td>
</tr>
<tr>
<td>12</td>
<td>20.2</td>
</tr>
<tr>
<td>&gt;= 13</td>
<td>19.0</td>
</tr>
<tr>
<td>Clinical Dementia Rating Scale</td>
<td></td>
</tr>
<tr>
<td>Mild (CDR 0.5–1)</td>
<td>61.1</td>
</tr>
<tr>
<td>Moderate (CDR 2)</td>
<td>18.1</td>
</tr>
<tr>
<td>Severe (CDR 3–5)</td>
<td>19.0</td>
</tr>
<tr>
<td>Mini-mental State Exam, mean (SD)</td>
<td>14.7 (6.5)</td>
</tr>
<tr>
<td>Medical comorbidity</td>
<td></td>
</tr>
<tr>
<td>Congestive heart failure</td>
<td>19.3</td>
</tr>
<tr>
<td>Hypertension</td>
<td>56.3</td>
</tr>
<tr>
<td>Chronic pulmonary disease</td>
<td>19.3</td>
</tr>
<tr>
<td>Diabetes</td>
<td>19.6</td>
</tr>
</tbody>
</table>
42.5% had affective symptoms (depression, anxiety, and/or irritability) with a median NPI affective score of 4 (IQR 2–9); associated caregiver distress of 2 (IQR 1–5). 25.0% had agitation, with a median domain score of 3 (IQR 1–6) and associated caregiver distress of 2 (IQR 1–3). Models testing the association of overall NPI and specific symptoms are presented in Table 2.

**Conclusions:** There is relatively little association between NPS and annual Medicare expenditures. Caregiver distress associated with psychosis was associated with increased expenditures, while additional symptom burden in the patient was associated with decreased expenditures. Moderate dementia was associated with increased costs compared to those with mild dementia, while patients living alone had higher expenditures relative to those living with others. Overall, ADAMS respondents had relatively minimal NPS, with a median NPI total score of just 2 (range 0–120). It is unclear why the NPS burden was so low; this may have reduced the ability to detect an association with expenditures, if it does exist.

**References:**

**This research was funded by:** Funded by the Beeson Career Development Award Program (NIA K08AG048321, the American Federation for Aging Research, The John A. Hartford Foundation, and The Atlantic Philanthropies).

### Table 2. The association of overall and specific NPS domains with Medicare expenditures among ADAMS respondents with dementia

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 1 (overall)</th>
<th></th>
<th>Model 2 (psychosis)</th>
<th></th>
<th>Model 3 (affective)</th>
<th></th>
<th>Model 4 (agitation)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>RCR</td>
<td>95% CI</td>
<td>p-value</td>
<td>RCR</td>
<td>95% CI</td>
<td>p-value</td>
<td>RCR</td>
<td>95% CI</td>
</tr>
<tr>
<td>Years of education</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0–11 (ref.)</td>
<td>1.00</td>
<td>-</td>
<td>-</td>
<td>1.00</td>
<td>-</td>
<td>-</td>
<td>1.00</td>
<td>-</td>
</tr>
<tr>
<td>12</td>
<td>1.08</td>
<td>(0.61,1.89)</td>
<td>0.79</td>
<td>1.09</td>
<td>(0.72,1.66)</td>
<td>0.67</td>
<td>1.05</td>
<td>(0.61,1.79)</td>
</tr>
<tr>
<td>&gt;= 13</td>
<td>0.65</td>
<td>(0.42,1.00)</td>
<td>0.05</td>
<td>0.72</td>
<td>(0.50,1.03)</td>
<td>0.07</td>
<td>0.63</td>
<td>(0.41,0.97)</td>
</tr>
<tr>
<td>Living situation</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alone</td>
<td>1.40</td>
<td>(1.08,1.80)</td>
<td>0.01</td>
<td>1.27</td>
<td>(1.04,1.54)</td>
<td>0.02</td>
<td>1.39</td>
<td>(1.06,1.82)</td>
</tr>
<tr>
<td>With others (ref.)</td>
<td>1.00</td>
<td>-</td>
<td>-</td>
<td>1.00</td>
<td>-</td>
<td>-</td>
<td>1.00</td>
<td>-</td>
</tr>
<tr>
<td>Nursing home</td>
<td>1.23</td>
<td>(0.89,1.71)</td>
<td>0.21</td>
<td>1.03</td>
<td>(0.70,1.51)</td>
<td>0.88</td>
<td>1.13</td>
<td>(0.84,1.52)</td>
</tr>
<tr>
<td>Clinical Dementia Rating Scale</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Mild (ref.)</td>
<td>1.00</td>
<td>-</td>
<td>-</td>
<td>1.00</td>
<td>-</td>
<td>-</td>
<td>1.00</td>
<td>-</td>
</tr>
<tr>
<td>Moderate</td>
<td>1.80</td>
<td>(1.23,2.63)</td>
<td>&lt;0.01</td>
<td>1.73</td>
<td>(1.17,2.56)</td>
<td>0.01</td>
<td>1.62</td>
<td>(1.06,2.46)</td>
</tr>
<tr>
<td>Severe</td>
<td>1.12</td>
<td>(0.77,1.61)</td>
<td>0.55</td>
<td>1.19</td>
<td>(0.77,1.85)</td>
<td>0.42</td>
<td>1.08</td>
<td>(0.73,1.60)</td>
</tr>
<tr>
<td>NPI total score</td>
<td>0.99</td>
<td>(0.96,1.02)</td>
<td>0.46</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>NPI total caregiver distress</td>
<td>1.04</td>
<td>(0.98,1.09)</td>
<td>0.20</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>NPI psychosis score</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.90</td>
<td>(0.85,0.94)</td>
<td>&lt;0.01</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>- associated caregiver distress</td>
<td>-</td>
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<td>-</td>
<td>-</td>
<td>-</td>
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<td>-</td>
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<tr>
<td>NPI affective score</td>
<td>-</td>
<td>-</td>
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<tr>
<td>- associated caregiver distress</td>
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<td>-</td>
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<tr>
<td>NPI agitation score</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<tr>
<td>- associated caregiver distress</td>
<td>-</td>
<td>-</td>
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<td>-</td>
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<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

- Models adjusted for: age, age^2, gender, race/ethnicity, net worth, Elixhauser comorbidities.
- RCR: relative cost ratio.
**Predictors of Late-Life Suicidal Behavior**

Amy L. Byers, PhD, MPH\(^1\), Amy X. Lai, BA\(^2\); Yixia Li, MPH\(^2\); John Boscardin, PhD\(^1,2\); Craig Nelson, MD\(^1\); Kristine S. Yaffe, MD\(^1\)

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2San Francisco Veterans Affairs Medical Center, San Francisco, CA

**Introduction:** Little is known about the predictors of suicidal behavior in late life. The present study determined the key psychiatric, medical, and sociodemographic predictors of late-life suicidal behavior.

**Methods:** The sample consisted of 3685 adults who were 55 years or older from the Collaborative Psychiatric Epidemiology Surveys (CPES 2001–2003), an aggregate of three nationally representative studies (the National Comorbidity Survey Replication, the National Survey of American Life, and the National Latino and Asian American Study) of community-dwelling adults in the U.S. Because the CPES is nationally representative of the age, racial/ethnic, and gender distributions, the results from the present study are generalizable to the U.S. population. The CPES contains information about suicidal behavior, psychiatric disorders, chronic medical conditions, and sociodemographic characteristics that was collected as part of the World Mental Health Composite International Diagnostic Interview (WMH-CIDI). In this study, suicidal behavior was defined as a positive endorsement for a suicidal ideation, plan, or attempt that first occurred in late life. Predictors included DSM-IV psychiatric disorders, self-reported history of chronic medical conditions, and sociodemographic characteristics. The key factors related to the risk of late-life suicidal behavior were determined by a systematic model-building approach that accounted for a broad range of potential predictors. Analyses included survey-weighted Cox proportional hazards analyses and complex design-corrected statistical tests. Results are based on weighted analyses unless otherwise noted.

**Results:** The population had a mean ± SE age of 68.0 ± 0.3 years and was 56.4% female, 80.7% white non-Hispanic, 8.8% African American, and 10.5% Hispanic/Other (6.1% Hispanic, 3.0% Asian, and 1.4% Other). In addition, approximately 3% (unweighted N = 93) had suicidal behavior, and of these, 1.5% had suicidal ideation only, 0.7% had plans, and 0.3% had attempts. In the final model, psychiatric disorders and sociodemographic characteristics were highly significant predictors of late-life suicidal behavior. Adults with lifetime substance use disorder had approximately 7 times the risk of developing suicidal behavior in late life while adults with major depressive disorder or social phobia had nearly 3 times the risk (Table 1).

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Hazard Ratio</th>
<th>95% CI</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Psychiatric</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Substance use disorder(^b)</td>
<td>7.38</td>
<td>2.76–19.69</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Major depressive disorder(^b)</td>
<td>2.97</td>
<td>1.54–5.76</td>
<td>.001</td>
</tr>
<tr>
<td>Social phobia(^b)</td>
<td>2.68</td>
<td>1.38–5.19</td>
<td>.004</td>
</tr>
<tr>
<td><strong>Medical</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cancer(^c)</td>
<td>0.28</td>
<td>0.13–0.62</td>
<td>.002</td>
</tr>
<tr>
<td><strong>Sociodemographic</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Family income</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>3.02</td>
<td>1.14–8.01</td>
<td>.03</td>
</tr>
<tr>
<td>Average</td>
<td>2.50</td>
<td>1.09–5.71</td>
<td>.03</td>
</tr>
<tr>
<td>High (reference)</td>
<td>1.00</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Race/ethnicity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>white non-Hispanic (reference)</td>
<td>1.00</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>African American</td>
<td>0.41</td>
<td>0.20–0.85</td>
<td>.02</td>
</tr>
<tr>
<td>Hispanic/Other</td>
<td>0.82</td>
<td>0.43–1.57</td>
<td>.55</td>
</tr>
</tbody>
</table>

\(^a\)Data are reported as weighted statistics.
\(^b\)No disorder was used as the reference group.
\(^c\)Negative endorsement was used as the reference group.
factors included as covariates (not shown), adults with comorbid psychiatric disorders (two or more disorders) were almost 10 times more likely to develop suicidal behavior (hazard ratio [HR]: 9.56, 95% CI: 5.88–15.54, p < .001). Adults with comorbid psychiatric and medical conditions (one or more psychiatric-medical condition) were about 4 times more likely (HR: 3.72, 95% CI: 1.91–7.24, p < .001).

**Conclusions:** This is the first study to our knowledge that determined key predictors of late-life suicidal behavior in a multivariable model that accounted for a broad range of important factors. Although our findings suggest that cancer and race/ethnic minority status were related to a lower risk of suicidal behavior, our results highlight that substance use disorder, major depressive disorder, social phobia, and low or average family income were independently and greatly associated with an increased risk of developing suicidal behavior. Thus, early monitoring and managing of these factors may help reduce suicidal behavior later in life.

This research was funded by: This work was supported by a NIH R01 grant (MD007019) administered by the Northern California Institute for Research and Education.

**Poster Number: NR 23**

**Improving Psychopharmacological Care for Older Veterans: Implementation of Phase 2 of the Psychotropic Drug Safety Initiative**

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2Yale University School of Medicine, West Haven, CT

**Introduction:** Older patients face increased vulnerability to medications, particularly those active in the central nervous system. The Psychotropic Drug Safety Initiative (PDSI) is a Veterans Health Administration (VHA) nationwide psychopharmacology quality improvement (QI) program. The goal of PDSI is to ensure Veterans across the Veterans Health Administration (VHA) system have access to safe, effective, and evidence-based psychopharmacological treatment. The PDSI program supports Veterans Integrated Service Network (VISN) and facility psychopharmacology QI initiatives by providing quarterly data on national, VISN, and facility-level performance on prescribing measures; facilitating clinical review of Veterans who may benefit from improvement in their psychotropic medication regimen via actionable patient lists updated nightly on the PDSI Clinical Management Dashboard; providing feedback and technical assistance for QI action planning; coordinating a national QI learning collaborative; and providing training and educational resources. On October 1, 2015, the PDSI launched Phase 2, which focuses on improving psychopharmacological care of older Veterans.

**Methods:** The PDSI program is coordinated through the Office of Mental Health Operations (OMHO) in collaboration with Mental Health Services (MHS), Pharmacy Benefits Management (PBM), and now in Phase 2 additionally with Geriatrics and Extended Care (GEC). Phase 2 aims were determined through multiple stakeholder engagement with leadership and representatives from national, VISN, and facility mental health and geriatric provider groups. A subject matter expert workgroup developed prescribing measures to facilitate monitoring of facility, VISN, and national progress towards achieving these program aims. VISNs and facilities were instructed to identify priority measures on which to focus their local QI efforts in the coming year and to develop and submit local QI action plans for those measures. Ongoing monitoring and support for Phase 1 psychopharmacology QI initiatives continued at both the national and local level. Bimonthly national QI collaborative conference calls continued and a webinar series was developed to educate providers about the evidence-base that supports the program aims and prescribing measures.

**Results:** PDSI Phase 2 aims include: 1) improve psychopharmacological care of patients with dementia, 2) decrease benzodiazepine and sedative hypnotic use among patients aged ≥75 years, 3) increase metabolic monitoring among patients aged ≥75 years prescribed an antipsychotic, and 4) decrease use of highly anticholinergic medications among patients aged ≥75 years. Fourteen prescribing measures were developed that address these aims, 7 measures for outpatient prescribing and 7 matched measures for prescribing in Community Living Centers (CLCs, the VA equivalent of nursing homes). Baseline data (FY15Q3) for facility, VISN, and national scores on each measure were released to help facilities determine their priority measures, with quarterly updates to follow. Actionable patient lists identifying Veterans flagged on these 14 measures were added to the PDSI Clinical Management Dashboard, which is updated nightly. The number of facilities selecting specific measures will be determined in November 2015 and initial Phase 2 QI action plans will be submitted in December 2015. Local implementation of those action plans will follow. Over 250 people participated in each of the 5 online live webinar sessions and the recorded sessions will be available for further online training.
Conclusions: PDSI Phase 2 builds upon an existing national and local QI program infrastructure to help educate providers about evidence-based geriatric psychopharmacology and to facilitate improvement in safe, effective use of psychotropic medications in the older Veteran population.

This research was funded by: The Psychotropic Drug Safety Initiative is supported by the Office of Mental Health Operations, Mental Health Services, Pharmacy Benefits Management, and Geriatrics and Extended Care at the US Department of Veterans Affairs.

Poster Number: NR 24

The Impact of a Videogame-Based Physical Activity Program in Older Adults with Schizophrenia on Subjectively and Objectively Measured Physical Activity
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Introduction: The purpose of this presentation is to describe the impact of a videogame-based physical activity program using the Kinect for Xbox 360 game system (Microsoft, Redmond, WA) on physical activity in older adults with schizophrenia.

Methods: Design: One group pretest posttest study. Setting: Mental health treatment facilities. Participants: Twenty older adults with schizophrenia. Intervention: Active videogame using the Kinect for Xbox 360 game system, for 30 minutes, once a week for 6 weeks. Measurements: Physical activity was measured objectively with the Sensewear Pro armband and by self-report with the Yale Physical Activity Survey at enrollment and at the end of the 6-week program.

Results: There was a significant increase in frequency of self-reported vigorous physical activity. We did not detect a statistically significant difference in objectively measured physical activity although increase in number of steps and sedentary activity were in the desired direction.

Conclusions: Our videogame-based physical activity program is the first in the literature to show a significant positive impact on the amount and frequency of physical activity in older adults with schizophrenia. These results suggest participants’ perception of physical activity intensity differs from the intensity objectively captured with a valid and reliable physical activity monitor.

This research was funded by: This work was supported by the National Center for Research Resources [KL2R024130 to H.L. & UCSF-CTSI Grant Number UL1 RR024131] and the National Institute on Aging (K23AG04438). The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Center for Research Resources or the National Institutes of Health. No Disclosures to report.

Poster Number: NR 25

Dementia in Indian Cinema: A Narrative Review
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Introduction: Indian cinema is known for portraying social, cultural, political issues and this also includes issues in mental health. We review films portraying dementia in Indian Cinema.

Methods: Films were identified after discussion with various experts in person, telephone and email correspondence. Web databases were also checked to identify the films.

Results: Ten films portraying balanced and unbalanced versions of dementia and its related issues have been identified. Various behaviour problems in dementia have been portrayed including wandering, perseveration and regressive behaviour. Caregiver issues have been discussed in the films. However treatment and other interventions have not been discussed.

Conclusions: It can be concluded that these films can be used as a resource for movie clubs as a part of teaching curriculum during post graduate and under graduate training. They can be an excellent medium to understand cultural issues related to dementia in the community and gaining cultural competence in the process.

This research was funded by: No funding has been received for this work.
**Introduction:** The American Psychological Association (APA) defines resilience as the process of adapting well in the face of adversity, trauma, tragedy, threats, or significant sources of stress. Research examining resilience as a process versus a personality trait suggests that older adults are capable of resilience despite their backgrounds, experiences, and even health conditions. Early studies of resilience focused mainly on younger subgroups, but with the continued graying of the population, a growing field of research has emerged on the concept of resilience among older adults and its impact on successful aging. There is much interest in finding ways to help older adults achieve the best possible health status and minimal levels of disability as they age. With this review of the literature, we will define resilience; describe scales used to measure resilience as well as characteristics and positive outcomes associated with high resilience; and explore potential interventions to promote resilience among older adults.

**Methods:** We utilized online search engines, including PubMed and Medline, to identify reviews and research studies of resilience among older adult populations.

**Results:** Research studies have identified the common characteristics associated with resilience, including mental, physical, and social factors. An individual’s adaptive coping skills, social support, personal relationships, community involvement and integration, optimism, and positive emotions appear to be particularly important factors of resilience. Resilience in late life has also been significantly associated with positive outcomes, including greater well-being, improved mental health, successful aging, increased longevity, faster cardiovascular recovery, and lower depression and mortality rates. Several studies describe resilience interventions; however, few interventions have achieved proven success in helping older adults to develop and enhance resilience.

**Conclusions:** These studies indicate that building resilience can help older adults to achieve better outcomes and successfully adapt to the inevitable adversities of aging, despite chronic conditions and increasing physical limitations. Interventions to enhance resilience within this population through the key characteristics that support and promote resilience are warranted, but to date little evidence of success in this area exists.

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**Poster Number: NR 27**

**Suggested Protocol for Electroconvulsive Therapy for Depression in a Parkinson’s Disease Patient with a Deep Brain Stimulator: A Case Report**

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**Introduction:** We report one a case of bilateral electroconvulsive therapy (ECT) conjointly done in a patient with a deep brain stimulator (DBS) in place for Parkinson’s disease (PD), to show that it can be accomplished safely and effectively. DBS is a nonsurgical treatment used to improve unwanted involuntary movement in PD and other movement disorders. Through intracranial electrodes it delivers electrical impulse to the globus pallidus, subthalamic nucleus (STN) or thalamus, inhibiting unwanted movement. Depression occurs in approximately 40% of patients with PD. There is currently limited data available on the use of ECT in the presence of the DBS. Case: 48 yo Hispanic Male with history of severe depression as well as severe PD diagnosed for over 10 years. A DBS was placed in 2010 in bilateral STN, and the device allowed him to remain relatively asymptomatic together with Requip, Sinemet and Selegiline. 5 years after DBS implantation he presented to our hospital, in May 2015, with severe depression, thoughts of suicide, hallucinations and daily alcohol use. In consultation with Neurology, geriatric psychiatry and patient’s primary psychiatric team, it was deemed that patient was suitable for ECT treatment. He was started on ECT treatment with very positive results. Has been able to tolerate going off Sinemet and Selegiline with maintenance of his functionality and relatively asymptomatic from PD, as well as with improvement on his mood.

**Methods:** A literature review had been thoroughly conducted by the primary psychiatry treatment team, the Geriatric Specialist, and the ECT treatment team. Additionally, access to Journal of ECT listserv had led to communication with other physicians with prior published case studies on DBS patients with good response to ECT. Based on current literature review, discussion with Neurology, and with consulting MDs on listserv, it was recommended to proceed with bitemporal electrode
Late-Life Major Depression and Neuroticism: A Preliminary Functional Connectivity Study

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Introduction: The role of neuroticism in late life major depressive disorder (MDD) is generally understudied. Our initial research shows that older depressed patients scoring higher on measures of neuroticism experience worse clinical outcomes than those scoring low, including poorer mood outcomes to acute antidepressant treatment and greater longitudinal cognitive decline. Functional magnetic resonance imaging (fMRI) may be a useful technique to understand the underlying connections between depression and neuroticism. We sought to examine neuroticism-related functional brain connectivity among older adults with and without depression enrolled in the Neurobiology of Late-life Depression (NBOLD) study at UConn Health Center.

Methods: Thirty nine depressed patients and 36 never-depressed controls enrolled in NBOLD and agreed to clinical assessment and an fMRI scan. Depressed subjects were screened using the CES-D; all had initial scores >16. They were assessed by a study psychiatrist who administered a Montgomery-Asberg Depression Rating Scale (MADRS) and confirmed a diagnosis of MDD during a clinical interview. Subjects completed the DS-14, a measure of negative affectivity (NA) and social inhibition. We used NA scores as a measure of neuroticism. Control subjects scored <6 on the CES-D and reported no depression history, as confirmed on clinical interview by a study psychiatrist. All subjects underwent a five-minute, eyes-open, resting state 3T fMRI scan at the Olin Neuropsychiatry Center at the Institute of Living of Hartford Hospital. We computed the voxel-wise amplitude of low-frequency fluctuations (ALFF) at the low frequency band (0.01–0.08 Hz) and seed-based functional connectivity analysis using Dosenbach’s 160 ROIs as seeds (http://rfmri.org/dpabi). To examine the correlations between the negative affect with resting-state activity (ALFF) and functional connectivity, we conducted the whole-brain voxelwise linear regression analysis on ALFF maps and functional connectivity maps using the NA scores as the regressor while controlling for depression severity (MADRS). Only those regions where ALFF values correlated significantly with NA scores were chosen to further examine associations between functional connectivity and negative affect. Instead of using the significant clusters as seeds, corresponding regions from Dosenbach’s 160 ROIs were identified as seeds, and functional connectivity maps from these seeds were used as input to regression analyses with the NA scores as the regressor and MADRS as a covariate. The regression analyses on ALFF and functional connectivity with NA were conducted in the depressed and control groups separately. For all analyses, the false discovery rate (FDR) control on clusters was used for multiple comparison correction with the significance level set at p < 0.05.
Results: Findings for Negative affectivity using ALFF analyses Within the MDD group, higher NA was associated with greater ALFF in default mode network (DMN) regions including ventromedial prefrontal cortex (vmPFC), posterior cingulate (PCC), bilateral inferior and parietal cortex, as well as bilateral dorsolateral prefrontal cortex. Higher NA also correlated with lower ALFF in bilateral caudate, insula and hippocampus. In the healthy control group, higher negative affect was associated with greater ALFF in the mid-cingulate. All analyses controlled for depression severity. Therefore, the association of increased default mode activity with higher NA was a consistent finding across both depressed and control groups. Findings for Negative affectivity using seed-based analyses In the MDD group, higher negative affect was associated with greater functional connectivity between the vmPFC seed and the other DMN regions (i.e., PCC, bilateral inferior parietal cortex). Higher negative affect also correlated with lower functional connectivity between the vmPFC seed with dorsal ACC and caudate. The positive correlation between negative affect and vmPFC-PCC connectivity was also confirmed using the PCC as a seed. In the healthy control group, higher negative affective was also correlated with enhanced vmPFC-DMN connectivity.

Conclusions: Across depressed patients and healthy controls, higher negative affect was associated with greater default mode network activity (particularly in vmPFC) and enhanced functional connectivity among regions within the default mode network. Enhanced default mode activity and connectivity in major depression have been reported previously. Our study indicates that enhanced resting state activity/connectivity in major depression could be a trait that is related to neuroticism.

This research was funded by: The study was supported by NIMH grants R01MH096725-01 and R01MH098301.

Poster Number: NR 29

“Music First”: An Interprofessional Study of the Effect of Patient-Preferred Music as a Nonpharmacological Alternative or Adjunct to Medications for Behavioral and Psychological Symptoms of Dementia

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Introduction: This was a 3-month, prospective, naturalistic, interprofessional, single-center study conducted at an extended care facility focused on dementia care in Indianapolis, Indiana. This study sought to determine how personalized music delivered via headphones influenced affect, behavior and cognition/memory as well as the behavioral and psychological symptoms of dementia (BPSD), thereby affecting the necessity and utilization of pharmacological interventions (antipsychotics and/or benzodiazepines) for agitation in participants with mild, moderate, or severe dementia.

Methods: Prior to beginning the study, all 92 participants received hearing assessments by faculty members and undergraduate students with an audiology background. Researchers along with undergraduate music students and psychology majors met with participants and their families to determine the subject’s preferred musical genre and specific preferred songs from their late teens to early twenties. It was postulated that this period of life would be associated with emotional memory and the most vivid recall of significant life events. This information allowed researchers to build individualized playlists for each eligible participant. Additionally, all participants had baseline and monthly assessments of affect, behavior, and memory assessed via validated scales [Profile of Mood States-Brief Form (POMS-B), Cohen-Mansfield Agitation Inventory (CMAI), Mini-Mental State Examination (MMSE)]. These assessments were completed by a psychologist and a team of undergraduate psychology students. Participants’ medication records were reviewed by a pharmacist and pharmacy students who recorded the scheduled and PRN (as-needed) administration of multiple agents. This included first and second generation antipsychotics (for which there is an FDA mandated Black Box warning to avoid use in adults with dementia) and benzodiazepines. Forty-seven participants were randomly assigned to usual care, and 45 were randomly assigned to usual care combined with personalized music delivered with headphones via an iPod shuffle, while stratifying the groups based on level of dementia (moderate versus severe) and the presence or absence of a prescribed antipsychotic at baseline. Those participants assigned to the usual care plus personalized music received scheduled music listening sessions for 30 minutes three times weekly in addition to PRN music exposure during episodes of acute agitation that might otherwise be managed through medications. This study actively sought to determine whether providing music first could reduce antipsychotic administration and the potential side effects associated with these agents in nursing home residents with dementia.

Results: Both usual care and usual care combined with music showed reduced agitation from study initiation to conclusion (p < .001). Participants prescribed antipsychotics at baseline showed more agitation than those not prescribed antipsychotics (p < .05), regardless of their assigned group. Additionally, there was a significant antipsychotic medication by care group interaction (p < .05). For the usual care group, those receiving scheduled antipsychotics scored a mean 27.17 on the CMAI compared to those not on antipsychotics (mean = 21.95). Comparatively, participants in the usual care and music group did...
Zonisamide Improves Parkinsonism Without Psychiatric Deterioration in Patients with DLB: A Double-Blind Randomized Placebo-Controlled Study

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Introduction: We previously showed that zonisamide (ZNS) improves motor symptoms in patients with Parkinson’s disease with rare occurrence or exacerbation of hallucination. In this study, a double-blind randomized placebo-controlled study was performed to evaluate the efficacy of zonisamide (ZNS) for parkinsonism in patients with dementia with Lewy bodies (DLB).

Methods: Patients diagnosed with probable DLB, who had a Unified Parkinson’s Disease Rating Score (UPDRS) part 3 total score ≥10 and a Mini-Mental State Examination (MMSE) score range between 10 and 26, and had received L-dopa/DCI therapy over 12 weeks were enrolled. Prior to enrollment, the written voluntary informed consent was obtained from all patients and their caregivers. They received placebo (PLA) for 4 weeks in a single-blind manner, then were randomized into 3 groups and received PLA, ZNS 25 or 50 mg/day for 12 weeks in a double-blind manner. The primary endpoint was the UPDRS Part 3 total score. The MMSE, Neuropsychiatric Inventory (NPI), Zarit Caregiver Burden Interview (ZBI), adverse events (AEs), clinical laboratory tests, ECG were also evaluated. This study was performed in accordance with ethical principles that have their origin in the Declaration of Helsinki, Good Clinical Practice, and local regulations.

Results: Total of 159 patients were randomized into the three groups; 58 patients in the PLA group, 51 patients in the ZNS 25-mg group, and 50 patients in the ZNS 50-mg group, respectively. Of 159 patients, 153 (55, 48, and 50, respectively) patients were subjected to the modified intention-to-treat (mITT) analysis (the primary), and all of 159 patients to the safety analysis. At baseline, mean age (±SD) was 75.1 ± 6.3 years, mean duration of dementia and motor dysfunction were 3.8 ± 2.5 and 3.6 ± 2.9 years, respectively. The frequency of fluctuating cognition and visual hallucination were both 67.3%. The mean levodopa equivalent daily dose was 319 ± 191 mg and mean levodopa daily dose was 279 ± 149 mg. The mean UPDRS part 3 total score was 32.4 ± 11.4, mean MMSE score was 21.4 ± 4.8. The UPDRS part 3 total score reduced in all the 3 groups at Week 12 (change from baseline [LS Mean ± SE]; −2.1 ± 0.9 in the PLA group, −4.4 ± 1.0 in the ZNS 25-mg group, and −6.2 ± 1.0 in the ZNS 50-mg group), and the reduction was significantly greater in the ZNS 50-mg group than in the PLA group (difference, −4.1 [95% confidence interval; −6.8, −1.4]; p = 0.003, ANCOVA [Fisher’s LSD]). The score of MMSE, NPI-10, or ZBI did not significantly change against the respective baselines in all the groups. The incidence of AEs was 50.0% in the PLA group, 43.1% in the ZNS 25-mg group, and 64.0% in the ZNS 50-mg group. The reported AEs were qualitatively similar to those in patients with Parkinson’s disease. No notable differences in incidences of somnolence, hallucination, or cognitive impairment were found between the groups given ZNS and PLA.
Conclusions: The improvement of motor symptoms (UPDRS part 3 total score) showed significantly greater in the ZNS 50-mg group than in the PL group, and greater in the ZNS 25-mg group than in the PL group but not statistically. In addition to those, the changes of total scores in both MMSE and NPI were not different among the three groups, suggesting ZNS not worsening cognitive functions and psychiatric symptoms. Hallucination and delusion, common psychiatric symptoms induced by the anti-parkinsonian drugs for parkinsonism in DLB patients, were hardly affected by ZNS treatment, indicating its significance in the clinical use. ZNS significantly improved parkinsonism accompanying DLB without exacerbating cognitive functions and psychiatric symptoms.

This research was funded by: This study got full support from Sumitomo Dainippon Pharma Co., Ltd.

Poster Number: NR 31

Efficacy, Safety and Biomarker Data from SCarlet RoAD—a Global Phase 3 Study of Gantenerumab in Patients with Prodromal AD

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Introduction: Gantenerumab is a fully human, anti-Ab monoclonal antibody that binds with high affinity to aggregated Ab. Gantenerumab promotes removal of aggregated Ab by activating microglial phagocytosis. SCarlet RoAD (NCT01224106; WN25203) is a Phase 3, multicenter, randomized, double-blind, placebo-controlled, 2-year study designed to test gantenerumab in prodromal AD. This was the first global study using biomarker screening for entry and a single clinical endpoint for outcome. Dosing was terminated in December 2014 following a pre-planned futility analysis; patients continue to be followed.

Methods: Patients were 50–85 years old with MMSE scores ≥24, CDR-Global scores of 0.5 (memory box scores of 0.5 or 1.0) and evidence of amyloid pathology (CSF Ab(1–42) < 600 pg/mL, Innotest®, with cognition and functional performance largely preserved to exclude a diagnosis of AD dementia. 799 patients were randomized to monthly subcutaneous injections of placebo, or 105 mg or 225 mg gantenerumab, depending on their APOE ε4 allele status (APOE4 homozygotes received 105 mg or placebo). Primary endpoint at 2 years was the CDR-Sum of Boxes (SB) total score; secondary endpoints included ADAS-Cog 13, FAQ and MMSE. 114 patients were enrolled in a PET sub-study.

Results: No differences were found between placebo and gantenerumab treatment groups in the primary endpoint, CDR-SB scores, over 2 years. Similar results were observed for ADAS-Cog 13, FAQ and MMSE. Nevertheless, in patients who were predicted to have a faster rate of progression, an exposure-clinical effect relationship was observed. Serious adverse events were reported in 19.5%, 17.3% and 16.9% of patients in the placebo, 105 mg and 225 mg gantenerumab arms, respectively. ARIA were dose- and APOE4 allele-dependent. Overall incidence of ARIA for placebo, 105 mg and 225 mg gantenerumab groups was 0.8%, 6.6% and 12.3% for ARIA-E, and 10.9%, 19.2% and 13.1% for ARIA-H, respectively. Amyloid-PET-observed mean % change (±SD) from baseline in cortical composite SUVr (using mean cerebellar grey as reference region) at Week 100 was −1.11 ± 8.02 for placebo (n = 20), +0.19 ± 12.70 for 105 mg gantenerumab (n = 11) and −5.37 ± 7.92 for 225 mg gantenerumab (n = 18). No changes in CSF Ab(1–42) levels were found. CSF p-Tau mean % change (±SD) from baseline at Week 104 was +2.77 ± 20.69 for placebo (n = 72), −4.78 ± 11.90 for 105 mg gantenerumab (n = 71) and −7.34 ± 10.09 for 225 mg gantenerumab (n = 66). CSF t-Tau mean % change (±SD) from baseline at Week 104 was +3.43 ± 19.95 for placebo (n = 72), −1.36 ± 12.89 for 105 mg gantenerumab (n = 71) and (n = 66) −2.12 ± 11.01 for 225 mg gantenerumab.

Conclusions: Gantenerumab, a human anti-Ab antibody with high affinity for aggregated Ab, was well tolerated by patients with prodromal AD over the dose range tested in this dataset, one of the largest controlled datasets in prodromal AD patients available to date. No significant differences in primary efficacy endpoints between treatment arms were observed. However, an exposure-clinical effect relationship was suggested in patients predicted to have greater AD progression. In addition, at the doses tested, gantenerumab treatment was associated with dose-dependent reductions in brain Ab SUVr, and CSF p-Tau and t-Tau, compared with placebo. As expected, CSF Ab(1–42) levels were unaltered. These findings are consistent with brain amyloid clearance and an effect on downstream markers of...
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neurodegeneration; together with the exposure-clinical effect relationship, these data support the exploration of higher doses of gantenerumab.

This research was funded by: SCarlet RoAD is an F. Hoffmann-La Roche funded study.

Poster Number: NR 32
Non-Pharmacologic Insomnia Intervention for Older Adults with Mild Cognitive Impairment: Improvements in Actigraphy-Assessed Sleep Parameters
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Introduction: Sleep problems plague older adults, with negative effects of physical and mental health and quality of life. Sleep problems are a risk factor for declining health status. Growing evidence links sleep problems to the development of mild cognitive impairment (MCI). Cognitive-behavioral therapy for insomnia (CBT-I) has been shown to be effective in a broad range of individuals with sleep problems. However, cognitive therapies such as CBT-I involve cognitive processes that are frequently impaired in MCI (i.e., executive processes such as planning and problem solving, memory, and language). Therefore, evaluations of CBT-I for people with MCI should include measures of these cognitive functions. Because CBT-I has not been implemented in this population, our aim was to adapt commonly used strategies for those with memory impairments and measure whether or not the intervention resulted in improvements in the sleep parameters measured by actigraphy.

Methods: In the first part of this study, a six-session cognitive behavioral intervention for insomnia (CBT-I) was adapted for people with MCI and administered by sleep specialists to older adults with MCI (n = 28) in two residential facilities. Participants were randomly assigned to either the sleep intervention or an active control group focused on nutrition in aging. Actigraphy was used at baseline, immediately post-intervention and at a four month follow-up to assess sleep latency, wake after sleep onset, and sleep efficiency. Insomnia severity was measured with the Insomnia Severity Index (ISI). The D-KEF Color-Word Interference Test was used to assess executive functioning.

Results: Significant (all p values < 0.001) improvements in actigraphy-assessed sleep outcomes (sleep latency, wake after sleep onset, sleep efficiency) and insomnia severity were found in the intervention group, compared to the control group. The intervention group also demonstrated a significant, positive change in executive functioning (D-KEFS; p < .02). Anxiety (p = .08) and physical functioning (p = .06) also showed a trend towards improving, though there was no significant improvement in depression scores.

Conclusions: Nonpharmacological interventions such as CBT-I may be beneficial for people with MCI. Further study of CBT-I in people with MCI is warranted. Such research should include pre- and post-intervention measures of cognitive functions. Targeting of sleep has the potential to have broad public health impact, including in people with MCI.

This research was funded by: This study is supported by Grant #2012-199 from the Retirement Research Foundation.

Poster Number: NR 33
25-Year Physical Activity Trajectories and Brain MRI Measures in Mid-Life: The Coronary Artery Risk Development in Young Adults (CARDIA) Study
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S162 Am J Geriatr Psychiatry 24:3, Supplement 1
Introduction: OBJECTIVE: To estimate the relationship between physical activity trajectories and brain MRI measures in mid-life. BACKGROUND: Several studies in older adults have reported associations with physical activity and beneficial structural brain measures including decreased brain atrophy and larger hippocampal volumes. Little is known about the association of early life physical activity with brain MRI measures in mid-life.

Methods: The CARDIA Study followed healthy adults aged 18–30 years over 25 years. Participants reported time spent on moderate and heavy activities every 2–5 years. Physical activity level for each timepoint was calculated based on the strenuousness and time spent for each activity and then averaged over 25 years. Physical activity levels at baseline and over 25 years were divided into tertiles (low, intermediate, and high). At Year 25, structural measurements for total brain, gray matter, white matter, and hippocampi were obtained using a 3T MR scanner in a subset of 706 participants (mean age 50.3 years ±3.5). Expert-trained image analysis methodology was used to classify tissue as normal or abnormal. Abnormal tissue included ischemia, demyelination, inflammation, and the penumbra of infarcted tissue in white tissue and infarcted cortical tissue in gray tissue. Generalized linear models were used to determine the association between tertile of physical activity and Z-scores for brain MRI measures. Minimal models were adjusted for age, education, race, gender, smoking, alcohol use, and intracranial volume. Multivariable models were adjusted for hypertension, diabetes, and body mass index as well as the covariates in the minimal model. Logistic regression models (adjusted for the same covariates in the multivariable models) were used to determine the association between tertile of physical activity and the presence of abnormal tissue (none or any).

Results: Participants with a high baseline physical activity had less abnormal tissue in right and left hippocampal volumes compared to those with a low level (all P < 0.05 for overall linear trend). (Table 1) Participants with a high level of physical activity over 25 years had less abnormal tissue in the right hippocampal volumes compared to those with a low level. (Table 2) These findings were confirmed with logistic regression models. No differences were seen for gray and white matter.

Conclusions: Associations of greater physical activity in early life with brain MRI measures in mid-life are consistent with benefit of physical activity.

This research was funded by: SW has no funding sources. The Coronary Artery Risk Development in Young Adults Study (CARDIA) is supported by contracts HHSN268201300025C, HHSN268201300026C, HHSN268201300027C, HHSN268201300028C, HHSN268201300029C, and HHSN268200900041C from the National Heart, Lung, and Blood Institute (NHLBI), the Intramural Research Program of the National Institute on Aging (NIA), and an intra-agency agreement between NIA and NHLBI (AG0005) CARDIA funding.

Table 1. Relationship between baseline physical activity compared to highest tertile and hippocampal MRI measures

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<th>Brain MRI Measure</th>
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<td>Low PA tertile</td>
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<td>P-value for linear trend</td>
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<td>Normal right hippocampal volume</td>
<td>β</td>
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<td>β</td>
<td>P-value</td>
<td>β</td>
<td>P-value</td>
</tr>
<tr>
<td></td>
<td>−0.133</td>
<td>0.13</td>
<td>−0.063</td>
<td>0.45</td>
<td>0.32</td>
<td></td>
</tr>
<tr>
<td>Normal left hippocampal volume</td>
<td>β</td>
<td>P-value</td>
<td>β</td>
<td>P-value</td>
<td>β</td>
<td>P-value</td>
</tr>
<tr>
<td></td>
<td>−0.171</td>
<td>0.048</td>
<td>−0.094</td>
<td>0.26</td>
<td>0.14</td>
<td></td>
</tr>
<tr>
<td>Abnormal tissue in right hippocampal volume</td>
<td>β</td>
<td>P-value</td>
<td>β</td>
<td>P-value</td>
<td>β</td>
<td>P-value</td>
</tr>
<tr>
<td></td>
<td>0.234</td>
<td>0.016</td>
<td>0.0533</td>
<td>0.56</td>
<td>0.043</td>
<td></td>
</tr>
<tr>
<td>Abnormal tissue in left hippocampal volume</td>
<td>β</td>
<td>P-value</td>
<td>β</td>
<td>P-value</td>
<td>β</td>
<td>P-value</td>
</tr>
<tr>
<td></td>
<td>0.267</td>
<td>0.007</td>
<td>0.071</td>
<td>0.45</td>
<td>0.021</td>
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</tr>
</tbody>
</table>

All volumes were measured in cubic centimeters (cc³) and then converted to Z-scores.
PA = physical activity.
Physical activity levels were divided into low, moderate, and high tertile. High physical activity tertile was the reference.
*Minimal models were adjusted for age, race, female gender, educational level, alcohol use, smoking status, and intracranial volume.
**Multivarate models were adjusted for age, race, female gender, educational level, BMI, alcohol use, smoking status, type 2 diabetes, blood pressure, and intracranial volume (ICV).
Driving and Dementia: What’s Sex Got to Do with It?

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Introduction: Driving cessation is often a difficult process for older people as driving is the most common method of transportation for them, thus it has the potential to lead to loss of independence and quality of life. Dementia is an important reason for driving cessation. In order to intervene and assist older people with dementia in this process, it is important to understand demographic patterns of cessation. Our objective was to review the literature on sex differences in the prevalence and incidence of driving cessation among older adults with dementia and to perform a meta-analysis to determine the magnitude of these effects.

Methods: A systematic literature search was conducted from July 7, 2015 to July 13, 2015 using MEDLINE, PubMed, Scopus and CINAHL to identify observational studies of sex differences in driving cessation among older adults with dementia. Study quality was assessed using the Newcastle-Ottawa Scale and data were extracted by the authors. Meta-analyses were performed using the random effects model and meta-regressions were used to covary the effects of age and Mini-Mental State Examination (MMSE) score.

Results: Nine studies with a total of 2088 participants reported sex differences in the prevalence or incidence of driving cessation. Eight studies (1755 participants) provided data on sex differences in the prevalence of driving cessation and were included in the meta-analysis. This analysis showed a significantly higher prevalence of driving cessation in women than men (OR = 2.319, 95% CI = 1.532–3.511), although the results were heterogeneous (I² = 68%). Co-varying age and MMSE score had no effects on the statistical significance of the results. Sensitivity analyses were conducted excluding studies that did not use standard diagnostic criteria, used only self-report data, used only a single clinic for recruitment, and had low quality assessment scores. These analyses were consistent with the main results, and only modestly reduced the heterogeneity. Only one study reported sex differences in the incidence of driving cessation and these differences were not significant.

Conclusions: Our meta-analysis found that among older people with dementia, women showed a significantly higher prevalence of driving cessation. Our findings support the need for further research on sex differences in the incidence of driving cessation.

Table 2: Relationship between physical activity averaged over 25 years (compared to highest tertile) and hippocampal MRI measures

<table>
<thead>
<tr>
<th>Brain MRI Measure</th>
<th>Low PA tertile</th>
<th>Intermediate PA tertile</th>
<th>P-value for linear trend</th>
<th>Low PA tertile</th>
<th>Intermediate PA tertile</th>
<th>P-value for linear trend</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>β</td>
<td>P-value</td>
<td>β</td>
<td>P-value</td>
<td></td>
<td>β</td>
</tr>
<tr>
<td>Normal right hippocampal volume</td>
<td>−0.159</td>
<td>0.070</td>
<td>−0.085</td>
<td>0.31</td>
<td>0.19</td>
<td>−0.130</td>
</tr>
<tr>
<td>Normal left hippocampal volume</td>
<td>−0.099</td>
<td>0.25</td>
<td>−0.095</td>
<td>0.91</td>
<td>0.45</td>
<td>−0.089</td>
</tr>
<tr>
<td>Abnormal tissue in right hippocampal volume</td>
<td>0.243</td>
<td>0.012</td>
<td>0.0115</td>
<td>0.90</td>
<td>0.018</td>
<td>0.262</td>
</tr>
<tr>
<td>Abnormal tissue in left hippocampal volume</td>
<td>0.129</td>
<td>0.19</td>
<td>0.003</td>
<td>0.97</td>
<td>0.33</td>
<td>0.153</td>
</tr>
</tbody>
</table>

All volumes for the brain MRI measures were quantified in cubic centimeters (cc³) and then converted to Z-scores. PA = physical activity.

*Minimal models were adjusted for age, race, female gender, educational level, alcohol use, smoking status, and intracranial volume (ICV).

**Multivariate models were adjusted for age, race, female gender, educational level, BMI, alcohol use, smoking status, type 2 diabetes, blood pressure, and intracranial volume (ICV).
cessation. They also suggest that intervention strategies to support driving cessation in people with dementia may have to be designed differently for men and women.

This research was funded by: The Canadian Consortium on Neurodegeneration in Aging is supported by a grant from the Canadian Institute of Health Research with funding from several partners.

Poster Number: NR 35

**Chronic but Not Acute Estradiol Improves Cholinergic-Related Cognitive Performance in Postmenopausal Women**

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2Jeju National University School of Medicine, Jeju, Republic of Korea
3Carl von Ossietzky University, Oldenburg, Germany
4University of Vermont, Burlington, VT

**Introduction:** The cholinergic system has been implicated in many aspects of the cognitive effects shown after estrogen (E2) administration including improving attention, working memory, and improved performance on effort-demanding tasks such as verbal memory. The cholinergic system is also an important site of action for estrogen in the brain and E2 appears to modulate cholinergic neurotransmission. Cognitive symptoms reported by postmenopausal women may be linked to changes in the cholinergic system, such as difficulties in memory and attention. While many studies in humans have investigated the effects of estrogen and hormone therapy on cognition, it is unclear whether the mechanism is neurotropic or pharmacologic. We have shown previously that three months of estrogen administration blunted the detrimental effects of cholinergic antagonists on cognitive function. The hypothesis underlying was that estrogen produced trophic effects on basal forebrain cholinergic neurons. However, recent studies have suggested that estradiol’s effects on these cholinergic neurons may be produced through novel estrogen receptors such as GPR30. GPR30 is a novel G protein-coupled estrogen receptor that is expressed in brain, particularly by cholinergic neurons in the basal forebrain and appears to be an important regulator of basal forebrain cholinergic functioning. To clarify whether varying durations of E2 administration differentially impact cognitive operations, this study directly compared the acute effects (single dose) of E2 to the chronic effects (3 months) of estrogen in modifying the response to cholinergic blockade. We anticipated that the effects of chronic administration of E2 in postmenopausal women would be greater than acute single-dose estrogen in modifying cognitive performance after cholinergic antagonist challenge.

**Methods:** During the acute pretreatment phase, eighteen non-smoking postmenopausal women (mean age 59.11, SD = 5.81) were randomly and blindly given a single capsule containing either 1 mg 17-β estradiol (E2) (n = 10) or matching placebo (n = 8) at 4 visits. Ninety minutes after the hormone or placebo administration, cholinergic blockade challenges were completed. Subjects received one of the following medications on each challenge day: 2.5 μg/kg of the antimuscarinic drug scopolamine (IV), 20 mg of the antinicotinic drug mecamylamine (oral), a combination of scopolamine and mecamylamine, or placebo. A double placebo system was used such that on each day, the subject received oral capsules and an injection. These challenge day conditions were randomized among subjects and double blinded. After completing all acute phase challenge visits, all eighteen subjects were placed on oral 17-β estradiol at a dose of 1 mg/day for three months. At the end of the 3-month chronic treatment phase, subjects completed four additional pharmacological challenge days identical to the acute phase challenges. Multiple domains of cognition were assessed during cholinergic challenge days using the Critical Flicker Fusion Task (CFF), Choice Reaction Time Task (CRT), Buschke Selective Reminding Task (SRT), and the N-Back Task (NBT).

**Results:** Results showed that single dose of acute E2 or placebo as a pretreatment had no measurable effect on cognitive performance after cholinergic antagonist medication or placebo, thus both groups were combined for acute versus chronic analysis. Comparing acute versus chronic treatment, main effects of chronic E2 treatment appeared in several domains. Chronic E2 improve performance total mean (p = 0.036) and motor median (p = 0.033) reaction time on the CRT with faster performance in the chronic E2 administration group than acute treatment . For verbal episodic memory, the chronic E2 administration group also showed significantly better performance during the delayed recall trial of the SRT (p = 0.006) compared to acute E2 treatment. While main effects of E2 treatment on cognitive performance were seen after chronic administration (but not after acute administration), there were no significant treatment by cholinergic antagonist interactions on the various cognitive domains tested.
Conclusions: While rapid effects of single-dose administration of estradiol can be seen in some systems, these results suggest that the effect of estrogen on cognitive performance is likely mediated through long-term trophic effects and less likely to be mediated via rapid, membrane-mediated or receptor-mediated effects on cholinergic systems or other neurotransmitter systems directly related to cognitive performance. Although single dose of has no protective effects on cognitive function in this model, chronic administration of estrogen is beneficial to psychomotor speed and verbal recall memory by improving cholinergic functioning. Knowledge of these differences will assist in further studies using estrogen or SERMs for cognitive preservation and/or enhancement, potentially with cholinergic modulation.

This research was funded by: NIA 2 R01 AG021476.

Poster Number: NR 36

Subjective Sleep as a Prognostic Factor for Venlafaxine Response in Older Depressed Outpatients
John Kasckow, MD, PhD1,2; Elizabeth DiNapoli, PhD1,2; Stephen Smagula, PhD2; Benoit H. Mulsant, MD3; Eric Lenze, MD4; Charles F. Reynolds III, MD5
1VA Pittsburgh Health Care System, Pittsburgh, PA
2University of Pittsburgh Medical Center, Pittsburgh, PA
3University of Toronto, Toronto, ON, Canada
4Washington University, St. Louis, MO

Introduction: In clinical trials for treating older depressed participants, insomnia has been associated with worse outcomes. This has been demonstrated with serotonin selective reuptake inhibitors (e.g., paroxetine) and tricyclics (nortriptyline). In those studies, sleep disturbance was based on either objective EEG findings or on subjective measures. It is not clear if baseline insomnia is associated with antidepressant response when treating older depressed patients with serotonin norepinephrine reuptake inhibitors (SNRI). To address this issue, we performed a secondary analysis of an NIMH-funded clinical trial: “Incomplete Response in Late Life Depression: Getting to Remission (IRL-GREY)” in which participants received the SNRI—venlafaxine XR over 12–16 weeks. We hypothesized that baseline subjective complaints of insomnia would predict worse outcomes in patients’ overall depressive symptoms.

Methods: Data was obtained from the 3 site IRL-GREY trial described by Lenze et al. (Lancet. 2015) which was implemented at the University of Pittsburgh, Washington University, and the University of Toronto. Participants (n = 468) were aged > 59 years with a DSM IV diagnosis of major depressive disorder; a Montgomery Asberg Rating Scale (MADRS) score > 14. Exclusions were a lifetime diagnosis of bipolar or other psychotic disorders; current psychotic symptoms; dementia; cognitive disorder and a mini- mental status exam score < 24; alcohol/substance abuse in the past 3 months. Venlafaxine XR was started at 37.5 mg/d and titrated up to 300 mg/d. Descriptive statistics were obtained for baseline demographic variables. Baseline sleep scores were determined by summing the three 17 item Hamilton Depression Rating Scale insomnia items which assess initial, middle and terminal insomnia (respectively items 4, 5 & 6). We tested our hypothesis by utilizing a random coefficient regression model with the demographic variables: race, gender, age, employment status, marital status, living with vs no supervision and the additional covariates: time, time squared, baseline sleep and the interaction terms sleep*time and sleep*time squared. Our outcome measure assessing depressive symptoms was MADRS scores; we subtracted the suicide item from the total MADRS score to obtained a modified outcome score assessing depression. We employed a backwards elimination approach to obtain a finalized model.

Results: The sample was 88% Caucasian; average age: 69.03 ± 7.20; 65% female; 18% employed; 44% married; with only 3% living with supervision. Using a backward elimination approach, we derived a final mixed regression model with the covariates—sleep, time, sleep*time, age, employment status and site. The interaction term—sleep*time was significant (beta = −.0375; standard error = .0182; p = .040) revealing that participants with worse baseline sleep had faster reductions in MADRS scores over the trial.

Conclusions: In this sample of older depressed patients receiving venlafaxine over a 12–16 week period, baseline subjective sleep appears to be a significant but weak prognostic indicator of antidepressant response. The direction of change contrasts with previous reports suggesting that worse subjective sleep complaints at baseline are associated with worse outcomes. Future research will focus on whether this is a unique characteristic of SNRI treatment response in the elderly.

This research was funded by: NIH R01-MH083660, P30MH090333, the UPMC Endowment on Geriatric Psychiatry, Taylor Family Institute for Innovative Psychiatric Research, Center for Advancing Translational Sciences and the Campbell Family Mental Health Research Institute.
A Systematic Review of Interventions for Driving Cessation in Older Adults

Duncan H. Cameron, BA Hons1,2; Mark Rapoport, MD, FRCPC1,3; Sarah Sanford, PhD2; Gary Naglie, MD, FRCPC2,4

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2Baycrest Health Sciences, Rotman Research Institute, Toronto, ON, Canada
3Department of Psychiatry, University of Toronto, Toronto, ON, Canada
4Department of Medicine, University of Toronto, Toronto, ON, Canada

Introduction: Driving represents the primary source of transportation for a majority of older adults, but increased motor vehicle collision rates per mile driven, a greater potential for injury from collisions, and an increased prevalence of dementia can pose significant problems for older drivers, their family members and health professionals alike. The process of driving cessation, however, is often fraught with difficulty, and while health professionals are frequently relied upon to assist with this process, many lack the tools to provide support in key areas, such as the self-assessment of driving ability or decision-making. The aim of this project was to review the existing literature on interventions facilitating driving cessation in older adults with and without dementia.

Methods: A literature search was performed using the databases MEDLINE, CINAHL, Cochrane Central, Embase and PsycINFO, covering dates 1994-September 2014, to identify all articles pertaining to driving cessation. Two independent raters screened articles for inclusion and extracted data using the Cochrane Collaboration data extraction tool.

Results: The initial search yielded a total of 476 records after removal of duplicates in the search results. Of these, 110 pertained to driving cessation in older adults, including a total of five that assessed three different intervention approaches for driving cessation. Three of these described controlled trials of three different interventions, while the other two were non-controlled studies of one of the three interventions. The first controlled study employed a driving cessation-focused group education and support program for older, retired drivers (i.e. drivers who have stopped driving) with a diagnosis of probable progressive dementia, and results were compared to those participating in a traditional Alzheimer’s Society support group. The second study described a driving cessation-focused support group intervention for caregivers of older, current drivers with dementia, and examined the difference between the intervention, provision of written materials, and a waitlist control. The third study described another driving cessation-focused education and support group, called the University of Queensland Driver Retirement Initiative (UQDRIVE) intervention. Participants in that third study were older retired (i.e. stopped driving) or retiring (i.e. in the transition to driving cessation) drivers (aged ≥60) without dementia, randomized to the intervention or to a waitlist control group. The 3 controlled intervention studies described positive results for intervention participants relative to controls on outcome measures including quality of life, depression, emotional impact of cessation, self-efficacy, preparedness for cessation, and community mobility post-cessation. Both non-controlled studies reported on data from the UQDRIVE intervention. The first of these described improved self-reported satisfaction with issues related to driving cessation and overall lifestyle post-intervention compared with pre-intervention. The second non-controlled study reported a high level of satisfaction with all aspects of the intervention upon completion of the program.

Conclusions: The results described in this review indicate promising effects of interventions that target driving cessation, and helpful tools for addressing the complex needs of older drivers and their caregivers during the transition to driving cessation or post-driving cessation. However, there were few studies identified, and there were important methodological limitations to the identified studies, including small sample sizes, attrition, unvalidated ratings, and lack of blinding of participants and personnel. Nonetheless, this literature will be important in informing future interventions to help older adults, with and without dementia, and their family members manage the process of driving cessation with dignity.

This research was funded by: The Canadian Consortium on Neurodegeneration in Aging is supported by a grant from the Canadian Institute of Health Research with funding from several partners.

The Effect of Tai Chi on Perceived Stress Levels of Older Female Adults of Non-Chinese Origin

Hala Tamim, PhD; Mohammad Mahjoorighasrodashti, BSc; Joseph Baker, PhD

York University, Toronto, ON, Canada

Introduction: Tai Chi is described as a traditional Chinese exercise form derived from martial arts folk traditions. Although the benefits of Tai Chi have been demonstrated in previous studies, the benefits derived by non-Chinese older females of low socio-
economic status (SES) specifically on stress levels have not been explored. The purpose of this study was to assess the effectiveness of a 16 week Tai Chi intervention for improving perceived stress levels among non-Chinese females 65 years of age or older of low SES.

Methods: This study was part of a larger study that examined the effectiveness of a Tai Chi program in improving physical and mental health among mid to older adults. Out of the 210 participants recruited in the original study, the present analysis was restricted to the 62 non Chinese females, 60 years of age and older and of low SES. All participants were recruited from an area in the Greater Toronto of Ontario, chosen for its diverse ethnic make-up and its low SES. The study was longitudinal in nature. Two cohorts of participants were enrolled in a 16-week Tai Chi program. Perceived stress levels were assessed using Perceived Stress Scale (PSS), both at baseline and at the end of the program.

Results: A total of 62 participants were enrolled in the TC program. The average age of the participants was 71.3 (±6.63) years old. In terms of comorbidities and medical conditions, arthritis, hypertension, diabetes, and depression rates were high among participants with 51.6%, 66.1%, 30.6% and 22.6% of the participants reporting them, respectively. Results of this study showed that the PSS scores of the participants were reduced from baseline to end of the program (p = 0.031). Furthermore, those with greater attendance (i.e., 8 or more Tai Chi sessions) experienced a significant change (p = 0.013) in their PSS levels compared to those who did not (p = 0.462).

Conclusions: Findings suggest that Tai Chi has considerable potential as an effective intervention in terms of improvement of stress among Canadian, non-Chinese older females living in low SES neighbourhoods.

This research was funded by: This study was supported by a grant from the Social Sciences and Humanities Research Council of Canada and Sport Participation Research Initiative.

Poster Number: NR 39

How Medicare Advantage Has Impacted Mental Health Service Utilization

Daniel Jimenez, PhD1; Benjamin L. Cook, PhD2

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2Cambridge Health Alliance, Cambridge, MA

Introduction: Given the rising numbers of older adults with behavioral health disorders (10.1 million to 14.4 million by 2030), and stark gaps in access to mental health care, more work is needed to understand how shifts in policy will impact mental health services use and expenditures in the near future. The purpose of this study is to identify the influence of Medicare Advantage HMO enrollment on access to mental health care services and mental health care expenditures compared to traditional, fee-for-service Medicare (TM), among the elderly with mental illness. In addition, we assess whether Medicare Advantage HMOs were differentially beneficial for certain sociodemographic groups.

Methods: The data are responses to the 2004–2012 Medical Expenditure Panel Survey (MEPS), a nationally representative sample of the non-institutionalized civilian population of the US. The sample includes 2,342 adults 65 years and older with probable depressive disorder (1,866 non-Hispanic White, 146 Black, and 330 Hispanic). Probable depressive disorder was defined as a score greater than or equal to 3 on the PHQ-2 or a score greater than or equal to 13 on the Kessler-6 questionnaire. To assess the association of Medicare Advantage HMO enrollment on mental health care access, expenditures, and adequacy of mental health care, we first conducted unadjusted analyses, comparing those with and without Medicare beneficiaries with and without HMO enrollment using t-tests for continuous variables, and chi-square tests for dichotomous variables. Second, we estimated regression models assessing association between Medicare Advantage HMO enrollment and mental health care utilization, adjusting for clinical need and sociodemographics.

Results: Medicare Advantage HMO enrollees with probable mental illness were significantly less likely to be non-Hispanic White, more likely to be Hispanic, less educated, and more likely to live in an urban area compared to Medicare beneficiaries not enrolled in a Medicare Advantage HMO program. After adjustment for mental and physical health, and socioeconomic and demographic factors, Medicare Advantage HMO enrollees with probable mental illness were 12% more likely to initiate treatment for mental health care than beneficiaries in more traditional Medicare programs. Among those that initiated mental health care, there were no significant differences in expenditures for mental health care. Initiation differences between Medicare Advantage HMO enrollees and Medicare beneficiaries in more traditional insurance plans persisted in most sociodemographic categories. Exceptions were that the HMO non-HMO difference was only 1.2% for Blacks, compared to 13.7% for non-Hispanic whites, a marginally significant difference-in-difference (p <.08). Likewise, the HMO non-HMO difference was actually −6.5% among beneficiaries with 200–399% FPL, a significant difference-in-difference from beneficiaries living under the poverty level (p = .01).
Conclusions: Mental health treatment initiation rates were substantially lower in Medicare Advantage HMOs compared to TM. These disparities persisted across multiple sociodemographic categories. The main policy purpose of managed health care is to control health care costs without imposing financial risk on consumers. In an ideal setting, managed care can create and enforce evidence-based treatment algorithms, provide the infrastructure for continuing education, ensure continuity of care, and provide screening and outreach programs. However, real-world settings often fall short of this ideal so there is a natural concern is whether this policy of cost control conflicts with the objective of promoting more equal access for those in need. The challenge for Medicare Advantage HMOs regarding mental health services is how to provide high-quality, cost effective mental services given that mental disorders are among the most common, disabling, and costliest disorders in old age. Potential solutions to this challenge lie in integration, prevention, and education. Our primary goal is to advocate for older adults who are in need of mental health care. We want to ensure that they receive continuous health care coverage, affordability insurance, high-quality, timely, and equitable care that promotes patients' well-being that is economically sustainable regardless of the particular model of funding. Given that greater attention is devoted to Medicare Advantage HMO programs and to integrated care and cost containment initiatives more broadly, then policies that enhance access to geriatric psychiatric care need to be enacted in order to eliminate the disparities between TM and Medicare Advantage HMO.

This research was funded by: This research was supported by grants R01 MH091042 and K23 MH098025 from the National Institute of Mental Health and P30 AG024409 from the National Institute on Aging.

Poster Number: NR 40

Forensics Meets Geriatrics: Aging on Psychotropic Drugs
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2Patton State Hospital, Patton, CA

Introduction: Forensic institutions throughout the United States house individuals with schizophrenia spectrum disorders (SSD) and significant history of violence stabilized on psychotropic drugs. The good news is: this population lives longer, the bad news is: the incidence of cognitive disorders among this group is growing. At present there are few studies regarding optimal psychopharmacologic management of forensic SSD patients with co-morbid dementia. It is, therefore not known which individuals require low dosage regimens in order to avoid age-related adverse effects and which can tolerate and need larger doses to avoid relapses into prior patterns of aggressive behavior. Furthermore, the new demographic trend engendered a paradox: poorer health care outcomes in spite of higher medical spending. Correcting these problems requires research into novel health care practices, programs and policies as well as new psychopharmacologic approaches in elderly forensic detainees. In this article we hypothesize that preventing delirium (often associated with dehydration) may lower the adverse effects of psychoactive drugs, the use of restraints, mortality and institutional cost, while at the same time providing better quality of care.

Methods: Method: we completed a retrospective review of records for six month at a large US forensic institution, analyzing the risk factors for emergency room (ER) transfer due to medical causes.

Results: Age, dementia, medication adverse effects and dehydration (with associated delirium) were identified as risk factors in 57.9% of ER transfers.

Conclusions: Conclusion: Delirium and dehydration are preventable risk factors which if recognized may not only preempt 57.9% of transfers, but also lower health care utilization, optimize care and decrease mortality.

This research was funded by: No financial support.

Poster Number: NR 41

Education’s Impact on Healthy Seniors’ Attitudes and Health Care Preferences Regarding Different Stages of Alzheimer’s Disease
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3University Health Network, Toronto, ON, Canada
Introduction: Alzheimer’s disease (AD) and behavioral and psychological symptoms of dementia (BPSD) are not well-known publicly. Studies have yet to explore whether education about both AD and BPSD has an effect on healthy senior’s knowledge, beliefs and healthcare preferences.

Methods: As a pilot study, twenty-four female and eight male healthy seniors were quantitatively assessed using AD knowledge, belief questionnaires and healthcare treatment decisional grids at three time-points (pre-, post- and one month follow-up) in respect to AD and BPSD educational sessions. Krueger’s methodology was used to qualitatively analyze data from focus groups about subjects’ reasons for their decisional preferences and any changes.

Results: After receiving education about AD, subjects performed on average 10% better on the AD knowledge questionnaire. Of the subjects whose knowledge improved overall during the focus group, one quarter chose less active interventions upon gaining AD knowledge in the severe stage. One month following, this association strengthened with one-third of the subjects whose knowledge improved choosing fewer active healthcare interventions. The majority of both genders chose Alzheimer’s disease as a more concerning condition compared to cancer and heart failure. Medications were the most preferable intervention to manage BPSD symptom, while physical restraints were least preferable.

Conclusions: This pilot study highlights that education about AD and BPSD can impact seniors’ choices about healthcare interventions. This will inform the design of a larger study focusing on seniors with mild cognitive impairment or early AD where decision-making for care is more time sensitive.

This research was funded by: Physician Services Incorporated.

Poster Number: NR 42

“Again?” Impact of Age, Fatigue and Expectation on Repeat Test Administration, and Practice Effects

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3Western Washington University, Bellingham, WA

Introduction: Neuropsychological tests when administered as part of a comprehensive battery or when repeated are impacted by both participant and examiner factors. These may include demand characteristics of the testing environment, examiner-patient interactions, as well as patient motivation, fatigue, vigilance, age and effort. This study examined performance of healthy middle- and older-aged adults given the same battery of cognitive tests three times over a period of one day as part of a study examining medication effects.

Methods: Seventy-one participants, 35 in the middle-age group (mean age 48.9 yrs) and 36 in the older-age group (mean age 74.4 yrs) participated in this study. The neurocognitive tests measured declarative memory, working memory, and attention. The battery of tests lasted 60 minutes and was given in the morning, after lunch, and again in the afternoon. In the medication study, some participants received medication on study day one versus study day two which were separated by one week, and only placebo day data is included here.

Results: Participants demonstrated a decreased performance from baseline on the declarative memory task (Hopkin’s Verbal Learning Test total and delayed recall) and one attention task (Digit Symbol Coding) (P < .05). In addition, participants demonstrated an improvement from baseline on a working memory task (Letter-Number Sequencing) and one attention task (d2 Test of Attention) (P < .05). Older adults and middle age adults were significantly different with regard to performance level (as expected), however, the pattern of performance over time was the same between age groups.

Conclusions: Results suggest that over the course of one day, participants may demonstrate both declines on some tasks and improvement on other tasks. It is possible that declines may be attributable to fatigue during some tasks, in contrast to improvement in other tasks secondary to practice effects. Nonetheless, aspects of demand characteristics of the testing environment may also have influenced results. These findings suggest that there are a myriad of factors besides age that can impact the performance on objective cognitive tests across time, and the pattern of change can include both improvement and decline. Clinicians should consider that both improvement as well as decline can be present within a single battery of tests given over a period of time.
The Relationship of Psychotropic Medication Use and Change in Physical Function and Mood Over Time among Long Term Care Residents with Dementia

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1University of Maryland School of Nursing, Baltimore, MD
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Introduction: Despite recent efforts to decrease their use, psychotropic medications remain commonly prescribed for older adults with dementia living in long term care settings and have been associated with negative health outcomes. The purpose of this study was to describe the prevalence of psychotropic medication use among long term care residents with moderate to severe cognitive impairment, and to explore the relationship of psychotropic medication use on change in physical function and mood over time.

Methods: This study was a secondary data analysis and included 199 residents in 8 long term care facilities from two cluster-randomized controlled trials. Descriptive analyses were done to describe the prevalence of residents receiving psychotropic medications. Controlling for setting and cognition, multivariate analyses of covariance was done to consider the impact of psychotropic medication use on change in physical function (Barthel Index) and depressive symptoms (Cornell Scale for Depression in Dementia) from baseline to 6 months.

Results: The majority of the residents were female (74%) and Caucasian (62%). The average age of the residents was 84.7 (SD = 8.8), and they had severe cognitive impairment with a mean MMSE score of 7.3 (SD = 4.7). Sixty (30%) of residents were receiving antipsychotics, 57 (29%) were receiving antidepressants, 45, (23%) were receiving mood stabilizers, 38 (19%) were receiving anxiolytics, 2 (1%) were receiving sedative/hypnotics and 136 (68%) were receiving narcotics. There was no significant change in physical function or mood over 6 months among residents receiving antipsychotics, antidepressants, mood stabilizers, anxiolytics, and narcotics compared to those not receiving these psychotropic medications. There was a non-significant trend toward an increase in depressive symptoms over 6 months among those residents receiving narcotics versus those not receiving narcotics.

Conclusions: The findings from this study provide additional support for the prevalence of psychotropic medication use among nursing home residents with dementia and suggest that the short term use of psychotropic medications may not result in negative functional or affective outcomes.

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Sertraline for the Treatment of Depression in Vascular Cognitive Impairment

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Introduction: Vascular cognitive impairment (VCI) refers to the effects of cerebrovascular disease (CVD) on cognition, from mild isolated deficits to dementia. VCI is the second most common cause of cognitive impairment in the elderly, behind Alzheimer disease. Depression is highly prevalent among patients with VCI, but little is known about its response to treatment. The purpose of this study was to determine whether or not sertraline, a commonly used antidepressant, would benefit patients with VCI and related depression.

Methods: The study was an 8-week, open-label, flexible dose treatment with sertraline in patients with VCI and depressive symptoms. Twenty-seven outpatients were recruited from clinical sites in the Greater Los Angeles Veterans Affairs Healthcare System. Patients had deficits in multiple cognitive domains, clear decline from previous abilities, and significant depressive symptoms (Cornell Scale for Depression in Dementia (CSDD) score > 8). Assessments were performed prior to treatment and after 8 weeks of treatment, and included the CSDD, the Neurobehavioral Rating Scale (NRS), the Neuropsychiatric Inventory (NPI), the Clinical Global Impression of Change (CGI-C), the MMSE, the Mattis Dementia Rating Scale, and assessment of activities of daily living. The change from baseline to end of the treatment period on each scale was assessed using paired t-tests.
The association between baseline CSDD scores and change in CSDD scores was examined using Spearman correlations. Adverse events were tabulated.

**Results:** All 27 patients enrolled in the study were male Veterans. Mean age was 75.4 (±8.3), mean MMSE score 21.3 (range 5–29). One patient screen-failed, thus 26 were treated with sertraline, started at 25–50 mg/day and titrated as tolerated at two-week intervals. Twenty-one of the 26 patients treated with sertraline completed 8 weeks of treatment. The mean optimal sertraline dose was 114 mg/day (range 75–200 mg/day). Five patients discontinued because of poor sertraline tolerance (1 patient), poor adherence (1), patient or caregiver preference (2), and medical illness unrelated to sertraline (1). Mean CSDD total score declined (improved) from 13.7 to 7.2 (p < .001), with most patients improved, over the 8-week trial. A statistically significant decline in score was apparent across all five CSDD domains—mood, behavioral, physical (appetite, energy), cyclic functions, and ideational disturbance. Baseline scores were highest on the mood-related domain and decreased from 4.4 to 2.6 (p < .0001). The NRS depressed mood item score declined from 2.6 to 1.3 (p < .0001). Change in CSDD total score was associated with CSDD total baseline score (r = −0.47, p = .030); similarly, change in NRS mood depress item score was associated with NRS depressed mood item baseline score (r = 0.53, p = .014). On the CGI-C, 16 of 21 patients were at least minimally improved, two were unchanged, and three were minimally worse. Total neuropsychiatric symptoms, as measured by NPI Total scores, improved (27.9 +/- 20.5 vs. 14.8 +/- 14.5, p = .01). There was no significant change in global cognition measures or activities of daily living over the treatment period. Nausea (6 patients), insomnia (4), sedation (4), dizziness (3), and dry mouth (3) were the most common side effects. No patient discontinued clearly due to a side effect of sertraline.

**Conclusions:** In this open trial, patients with VCI and depression improved in measures of depression, total neuropsychiatric symptoms, and global clinical outcome with eight weeks of sertraline treatment. Antidepressant efficacy has not been demonstrated thus far in this study population. Study limitations include absence of placebo control and blind ratings, relatively small sample size, and inclusion of only males. Further study of antidepressant efficacy in VCI is warranted, based on the prevalence of the clinical problem, the relative paucity of data, and the results of this study.

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**A Case Report: Diagnosing Frontotemporal Dementia While Unraveling the Mystery behind Medical Complications**

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**Introduction:** Frontotemporal Dementia is more common than what we once thought. It is the second most common cause of early onset dementia. There is no single diagnostic test that can confirm Frontotemporal Dementia with certainty. Obtaining a thorough history, collateral information from a caregiver, a neurological examination and neuropsychological testing are all very essential for making this diagnosis.

**Methods:** Mr. X is a 64 year old Caucasian Male who was admitted for necrotizing infection of his right hand. He had a history of nail biting that started roughly about 1 year ago and describes how he would ‘slowly bite off the entire nail and he would swallow the nails as oppose to spitting them out’. The wife also reported observing blood on his hands and around his mouth from the nail biting, and the nails eventually became infected. He denied anxiety contributing to his nail biting or relief of negative symptoms. He denied developing any rituals or obsessive behaviors. His family noticed a history of gradual decline where patient became less involved in daily activities and stopped visiting family as much. There were no other symptoms of depression and mania, denies any symptoms of psychosis. On admission, the blood sugars were significantly elevated (blood glucose 659, HbgA1c of 12.7). He underwent debridement of right hand necrotizing infection and transmetacarpal amputation of the right hand. After the amputation, he was very nonchalant about the entire incident, denied being worried about daily function despite losing his dominant hand. On mental status exam, the patient had a notably inappropriate affect, and he appeared somewhat aloof to the situation. Language, and speech appeared appropriate. He scored 29/30 in the Montreal Cognitive Assessment, and CLOX was deferred secondary to dominant hand amputation. Routine labs were grossly within normal limits.

**Results:** After ruling out multiple etiologies, we considered various neurocognitive disorders. The nail biting and the consumption of nails are suspected to be a manifestation of hyperorality. Patient’s growing social withdrawal-ness was suspicious for apathy. In light of those concerns, we recommended brain MRI and neuropsychological testing to assess for neurocognitive disorder, specifically fronto-temporal dementia. Patient was seen by staff psychologist and completed portions of repeatable battery for the assessment of neuropsychological status (RBANS), portions of the Wechsler Adult Intelligence Scale-4th edition (WAIS-IV), portions of the Delis-Kaplan Executive Function System (D-KEFS). Patient was noted to
demonstrate significant decrement in executive control, including flexibility of thought, abstract reasoning and inhibitory control, which suggests a neurocognitive disorder primarily affecting the frontal region. The neurocognitive tests confirmed our suspicion, and patient was diagnosed with fronto-temporal dementia. Patient and his wife were made aware of the natural course of dementia and the need to begin planning process, in particular medical decision and finances.

**Conclusions:** Fronto-temporal dementia is characterized by significant changes in social behavior, personality or aphasia accompanied by degeneration of the frontal and/or temporal lobes. There are multiple variant of the disease: behavioral variant FTD, and three forms of primary progressive aphasia. Behavioral variant FTD (bvFTD) is the most common subtype of FTD, accounts for 50% of all diagnosed FTD. The hallmark of bvFTD is progressive change in personality and behavior and the diagnosis of possible bvFTD is primarily based on clinical presentation and clinical assessment. Neuroimaging can provide support and neuropsychological testing can be helpful in patient management. Neuroimaging is not a diagnostic criteria because the imaging often appears normal in early disease, and even in later stage imaging only demonstrate focal frontal or temporal atrophy in about half of the patients. Patients with early bvFTD typically score well on the executive function portion of the neuropsychological testing. Given the uncommon nature of this condition, many physicians feel uncomfortable diagnosing this condition. But it is essential to diagnose it accurately and refer appropriately, as the implications of an incorrect diagnosis could be dangerous.

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