been suicidal and aging has exacerbated the problem. Women are less likely to kill themselves, and the methods differ. We ask are mid and later life women's lethal victimization similar to younger women? What are policy implications for prevention? Our research uses national level data from news surveillance of 728 intimate partner homicide suicide (IPHS) events and the State Firearm Law Database (SFLD) to improve our understanding of violent cause mortality by sex, age, method and location. IPHS patterns show 90% of events used firearm and 90% were male perpetrated. Results of multivariate analyses show young women had greater awareness and fear before IPHS. Evidence finds older men sometimes decided to kill their IP as part of their own suicide, without a history of known domestic violence. Older women have disproportionately low use of shelters, police and protective orders. SFLD shows population adjusted states with more DV firearms laws have significantly fewer IPHS events. Firearm culture has restricted research, blocked law enforcement and has done little to reduce gun access in households with vulnerable populations (e.g., suicidal husbands). Lethality Assessment Protocols could be modified for elder women's unique situation.

SESSION 2370 (POSTER)

EPIDEMIOLOGY

COMPARABILITY OF BIOLOGICAL AGING MEASURES IN THE NATIONAL HEALTH AND NUTRITION EXAMINATION STUDY, 1999-2002

Waylon J. Hastings,[1] Daniel Belsky,[2] and Idan Shalev[1], *1. Pennsylvania State University, State College, Pennsylvania, United States, 2. Columbia University Mailman School of Public Health, New York, New York, United States*

Biological processes of aging are thought to be modifiable causes of many chronic diseases. Measures of biological aging could provide sensitive endpoints for studies of risk factors hypothesized to shorten healthy lifespan and/or interventions that extend it. However, uncertainty remains about how to measure biological aging and if proposed measures assess the same thing. We tested four proposed measures of biological aging with available data from NHANES 1999-2002: Klemera-Doubal method (KDM) Biological Age, homeostatic dysregulation, Levine Method (LM) Biological Age, and leukocyte telomere length. All measures of biological aging were correlated with chronological age. KDM Biological Age, homeostatic dysregulation, and LM Biological Age were all significantly associated with each other, but were each not associated with telomere length. NHANES participants with older biological ages performed worse on tests of physical, cognitive, perceptual, and subjective functions known to decline with advancing chronological age and thought to mediate age-related disability. Further, NHANES participants with higher levels of exposure to life-course risk factors were measured as having older biological ages. In both sets of analyses, effect-sizes tended to be larger for KDM Biological Age, homeostatic dysregulation, and LM Biological Age as compared to telomere length. Composite measures combining cellular- and patient-level information tended to have the largest effect-sizes. The cellular-level aging biomarker telomere length may measure different aspects of the aging process relative to the patient-level physiological measures. Studies aiming to test if risk factors accelerate aging or if interventions may slow aging should not treat proposed measures of biological aging as interchangeable.

TRENDS IN GERIATRIC PHYSICAL ASSAULT INJURIES TREATED IN U.S. EMERGENCY DEPARTMENTS, 2006-2015

Tony Rosen,[1] Sunday Clark,[2] Zach Gassoumis,[3] Jeanine Yonashiro-Cho,[3] Alyssa Elman,[4] David Lachs,[1] Elizabeth Bloemen,[5] and Jeffrey Hall[6], *1. Weill Cornell Medical College / NewYork-Presbyterian Hospital, New York, New York, United States, 2. Department of Emergency Medicine, Weill Cornell Medical College / NewYork-Presbyterian Hospital, New York, New York, United States, 3. Leonard Davis School of Gerontology, University of Southern California, Los Angeles, California, United States, 4. Weill Cornell Medical College, New York, New York, United States, 5. University of Colorado School of Medicine, Aurora, Colorado, United States, 6. Centers for Disease Control and Prevention, Atlanta, Georgia, United States*

Trends in Geriatric Physical Assault Injuries Treated in US Emergency Departments, 2006-2015 Older adults are common victims of assault, many of which may result in severe injuries. Our objective was to understand temporal and demographic trends in geriatric assault injuries treated at U.S. Emergency Departments (EDs) and to compare these trends to assault injuries in younger adults. We conducted an analysis of assault injuries in patients aged ≥60 compared to patients aged 18-59 treated in EDs during 2006-2015 using the National Electronic Injury Surveillance System-All Injury Program Special Study of Assaults, which collects data from a nationally representative stratified probability sample of U.S. hospitals. Total geriatric assaults seen in EDs increased from 35,135 in 2006 to 69,657 in 2015, a 98% increase. These injuries increased as a percentage of all geriatric injuries treated from 0.9% to 1.1%. Assaults in older men increased 119%, while assaults in older women increased 68%. Among age groups, the biggest percentage increases were among adults aged 60-64 (138%) and aged 65-74 (89%). ED visits for injuries associated with physical elder abuse increased from 13,241 in 2006 to 27,406 in 2015, a 107% increase. During this period, number of younger adults treated for assault did not significantly change. We concluded that geriatric assault injuries, particularly in older men in younger age groups, are dramatically increasing. Further research is needed to better understand these assaults to develop prevention strategies.

USE OF EXPOSURE CROSSOVER DESIGN TO CONTROL FOR UNMEASURED BASELINE CONFOUNDING IN OBSERVATIONAL STUDIES

Ling Han,[1] Robert D. Kerns,[2] Melissa Skanderson,[3] Joseph L. Goulet,[4] Stephen Luther,[5] and Cynthia Brandt[1], *1. Yale School of Medicine, New Haven, Connecticut, United States, 2. Yale University, New Haven, Connecticut, United States, 3. VA Connecticut, West Haven, Connecticut, United States, 4. VA Connecticut Healthcare System, West Haven, Connecticut, United States, 5. James A. Haley Veterans Hospital, Tampa, Florida, United States*

Observational comparative effectiveness studies face the challenge of selection bias. Due to lack of randomization, an alleged treatment effect may reflect inherent differences in baseline characteristics between comparison groups, rather than the outcome of treatment. Propensity score methods were devised to "resample" a most comparable comparison group, under a strong yet untestable assumption of no unmeasured confounding. We present an "exposure crossover" study evaluating complementary and integrative health approaches (CIH) among 6,379 US veterans who received acupuncture, massage or chiropractic therapies between 10/1/2011-9/30/2013. Their average pain intensity ratings (PIRs) during the 12-months after CIH initiation (effect period, EP) were compared with the 12-months before (baseline period, BP). Through this built-in self-matching, veterans' characteristics and other stable baseline confounding, measured and unmeasured, were presumably eliminated. After accounting for time-varying opioid use and within-subject correlations using a generalized estimating equation, we found that in comparison to the BP, the adjusted mean PIR during the EP was -0.40 (95% Confidence Interval (CI): -0.51, -0.29) points lower; while the adjusted rate ratio of moderate to severe pain (PIRs ≥ 4) was 34% lower [0.66 (95% CI: 0.62, 0.70)]. The effect sizes were greater among veterans older than 65 years, yet diminished to null after 6-9 months. Assuming a 3-month induction period, using alternative random-intercept model, and examining post-CIH opioid use as an alternative outcome, derived similar results. These observations echo some randomized trials suggesting a modest, short-term CIH benefit, and highlight the merits and usefulness of exposure-crossover design to observational studies of medical interventions.

ADVANCING AN INTERDISCIPLINARY SCIENCE OF AGING THROUGH A PRACTICE-BASED DATA SCIENCE APPROACH

Robert Lucero,[1] and Ragnhildur Bjarnadottir[1], *1. University of Florida, Gainesville, Florida, United States*

Two hundred and fifty thousand older adults die annually in United States hospitals because of iatrogenic conditions (ICs). Clinicians, aging experts, patient advocates and federal policy makers agree that there is a need to enhance the safety of hospitalized older adults through improved identification and prevention of ICs. To this end, we are building a research program with the goal of enhancing the safety of hospitalized older adults by reducing ICs through an effective learning health system. Leveraging unique electronic data and healthcare system and human resources at the University of Florida, we are applying a state-of-the-art practice-based data science approach to identify risk factors of ICs (e.g., falls) from structured (i.e., nursing, clinical, administrative) and unstructured or text (i.e., registered nurse's progress notes) data. Our interdisciplinary academic-clinical partnership includes scientific and clinical experts in patient safety, care quality, health outcomes, nursing and health informatics, natural language processing, data science, aging, standardized terminology, clinical decision support, statistics, machine learning, and hospital operations. Results to date have uncovered previously unknown fall risk factors within nursing (i.e., physical therapy initiation), clinical (i.e., number of fall risk increasing drugs, hemoglobin level), and administrative (i.e., Charlson Comorbidity Index, nurse skill mix, and registered nurse staffing ratio) structured data as well as patient cognitive, environmental, workflow, and communication factors in text data. The application of data science methods (i.e., machine learning and text-mining) and findings from this research will be used to develop text-mining pipelines to support sustained data-driven interdisciplinary aging studies to reduce ICs.

MEDICAL COMPLICATIONS AND INJURY LEADING TO EMERGENCY DEPARTMENT USE AMONG OLDER ADULTS

Mary W. Carter,[1] Bo Kyum Yang,[1] and Cyrus Y. Engineer[1], *1. Towson University, Towson, Maryland, United States*

Medical injury consistently ranks among the most expensive hospital stay diagnoses and represents a frequent cause of hospital readmission. Although older adults are at greater risk of medical injury, in part, because of greater incidence of comorbidity and increased medical complexity, little is known about the burden of medical injury leading to ED use or the costs and outcomes associated with these events among older adults. In response, this study used nationally representative data from the 2014 Nationwide Emergency Department Survey to examine the epidemiology of older adult ED-visits for medical injury. Principal diagnosis codes were grouped using AHRQ's Clinical Classification Software to identify medical injury-related visits. Results indicated that in 2014, 506,466 ED-visits for medical injuries occurred, comprising 2% of all older adult ED-visits. Leading causes of medical injury included malfunction of device, implant and grafts (24%); infection and inflammation of internal prosthetic device, implant, and graft (16%), and other complications of surgical and medical procedures (15%). Risk factors for medical injury included being male, Medicaid as primary payor, and number of chronic conditions. Multinominal logistic regression and multivariate regression results indicate that Medical injury-related ED visits were associated with higher hospitalization risk (RRR=2.08, p<0.000), 27% longer hospital stays, and 24% higher total charges relative to non-medical injury related visits. However, medical injury was not associated with risk of death after adjustment. Study findings suggest that ED-visits for medical injury occur frequently among older adults and are associated with significant burden and cost.

IN HIP FRACTURE, GENDER CONFOUNDS COGNITION ASSESSMENT, TIME TO DEATH, AND COGNITION-RELATED MORTALITY

Heather L. Mutchie,[1] Denise Orwig,[1] and Ann Gruber-Baldini[1], *1. University of Maryland Baltimore School of Medicine, Baltimore, Maryland, United States*

Of 300,000 annual hip fractures in the US, about 30% occur in men, over 30% experience cognitive impairment or dementia, and 30% die within one year. This study compares time-to-death and cognition-related cause of death (CR-COD) by gender after hip fracture using different methods of cognitive impairment ascertainment. Baseline hospital charts and Modified Mini-Mental State Examination (3MS) were from the Baltimore Hip Studies 7th cohort (2006-2011) (171 women, 168 men). National Death Index was obtained up to December 31, 2014. Cox models