

### EMERGING ADULT CAREGIVERS: PERCEPTIONS OF OLDER ADULT CARE RECIPIENTS, QUALITY OF CONTACT, AND AGEISM

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Approximately 12-18% of family caregivers to older adults in the U.S. are 18-25 years old (i.e., emerging adulthood), yet minimal research has focused on this subgroup of caregivers (Levine, 2005; Smyth, Blaxland, & Cass, 2011). Individuals' perceptions of an older adult's social role relate to their attitudes toward older adults as a group (Hummert, 1999; Kite & Wagner, 2002). However, whether perceptions that emerging adult caregivers hold of older adults are specific to the social role of "care-recipient" has not been studied. A sample of 210 informal caregivers (ages 18-25) were surveyed to collect qualitative responses regarding perceptions of an older adult care-recipient (age 65+) and to assess quality of contact with the care-recipient and ageist attitudes. Participants were asked to provide five adjectives describing their older adult care-recipient. Approximately 43% provided a set of adjectives in which 80%-100% were coded as positive adjectives (e.g., "active", "wise"); similarly, half of the sample's adjective sets contained 0%-25% negative adjectives (e.g., "helpless", "obnoxious"). The quality of contact with the care-recipient was significantly correlated ( $p < .001$ ) with the percentage of positive ( $r = .47$ ) and negative ( $r = -.49$ ) adjectives. Scores on the Fraboni Scale of Ageism were also significantly correlated ( $p < .01$ ) with the percentage of positive ( $r = -.19$ ) and negative ( $r = .20$ ) adjectives. Overall, these emerging adult caregivers had generally positive perceptions of their older adult care-recipients, and these perceptions reflected the positive quality of contact with the care-recipient. Less ageist attitudes' relationship with more positive and less negative perceptions may have implications for experiences within a caregiving dyad.

### AMINO ACIDS PREDICT COGNITION BEYOND CLINICAL METABOLIC MARKERS: A MACHINE LEARNING APPROACH

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Prior work has suggested that metabolic disorders increase the risk for cognitive decline. Further, studies have identified amino acids (AAs) as potential biomarkers for dementia and diabetes. This study examines AAs and metabolic clinical markers (MCM) as predictors of cognition (Processing Speed (SOP), Working Memory (WM), Fluid (Gf) and Crystallized Intelligence (Gc)). The sample included 241 middle-aged adults from Bronx, NY. Predictors included age, gender, education, ethnicity, smoking, having diabetes, glucose, insulin, triglycerides, diastolic, and systolic blood pressure (BP), and cholesterol. AAs and associated derivatives were obtained from serum using NMR-based metabolomics. Analyses were conducted for each cognitive domain using repeated cross-validation random forests and lasso regressions. Overall, all models had acceptable cross-validation mean squared error

except for WM. Several MCMs were specific to each cognitive domain, such as lower triglycerides and glucose associated with better SOP and higher systolic BP associated with better Gc while none were identified for Gf. The Gf model had the least number of AAs with lower serine associated with better FI. Two AAs, higher histidine and alanine, were associated with better SOP. Further, higher alanine, valine, isoleucine, serine, methionine, betaine, and moderate tyrosine were associated with better Gc. These results indicate that AAs were specific to each cognitive domain and ranked similar or higher in importance as several MCMs. These results suggest that further investigation of AAs alongside associated MCMs is needed to assess the metabolic contribution to cognitive performance. Such research will help identify specific metabolic targets relating to cognition.

### METABOLOMICS PROFILING OF MUSCLE FAT DEPOSITION IN AGING: RESULTS FROM THE HEALTH ABC STUDY

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Background: Age-related inter-muscular fat (IMF) deposition is associated with poor physical function in those with preserved/high muscle mass. However, the heterogeneity of IMF in aging is poorly understood. We used a semi-targeted metabolomics approach to: 1) determine the metabolites associated with IMF infiltration in aging; and 2) establish a model to predict IMF using the metabolome. Methods: We performed a cross-sectional analysis of 314 African-American men (age: 69-79 years) from the Health ABC study at baseline. Mid-thigh IMF area (cm<sup>2</sup>, by CT) and 350 plasma metabolites (by liquid-chromatography/mass spectrometry) were measured. Correlation analysis was performed to determine metabolites associated with IMF. An IMF prediction model was calculated, using regression analysis with 10-fold cross-validations on random halves of the population with metabolites, age and weight as predictors. Results: Of 161 metabolites correlated with IMF ( $P < 0.05$ ), 34 remained significant after adjusting for age, weight, physical activity, medications, smoking and multiple comparisons (false discovery rate  $\leq 0.25$ ). IMF-associated metabolites were primarily lipids (76%) and amino acids (15%). Most metabolites were positively correlated with IMF (94%), with the exception of mevalonic acid (from fatty acids sub-class) and glutamine (from organic-acids) which were negatively associated with IMF. IMF-associated metabolites predicted 49% of the variability in the actual IMF in the test set of the random half of the population (50%,  $n = 144$ ). Conclusion: Identification of the unique metabolomics features associated with IMF may improve our understanding of key biological alterations of muscle during aging.

### EVALUATING GERIATRIC WORKFORCE DEVELOPMENT NEEDS AMONG HOSPITALS USING NICHE BENCHMARKING DATA

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The Nurses Improving Care for Health System Elders (NICHE) program aims to improve geriatric care competencies for improved care quality. A quantitative descriptive design utilizing secondary data analysis was done to evaluate geriatric workforce enhancement efforts in one acute healthcare system. Data were collected using the Geriatric Institutional Assessment Profile (GIAP) from 2008 and 2013. The GIAP measures perceived professional issues (disagreements among staff and families, limited access to geriatric services, vulnerability to legal action, intensity and burden of behavioral problems) on a Likert scale from best=0 to poor=10. Staff perception of the Geriatric Care Environment was scored by the GIAP as: age sensitive care delivery (0-40), institutional values (0-28), resource availability (0-32) and capacity for collaboration (0-12). Higher scores on the Geriatric Care Environment reflected improvements. Independent sample t-tests examined changes in baseline scores. Post-NICHE implementation, compared to peer hospitals by teaching status and bed size in 3 hospitals there were significantly ( $p < 0.05$ ) improved scores for: access to geriatric services (2.79-3.21), burden of behavioral problems (2.40-3.15), aging sensitivity care delivery (26.05-29.53), institutional values (18.85-19.59) and resource availability (19.51-19.97). Peer hospitals had significantly ( $p < 0.05$ ) better scores for: disagreements among staff about treatment of older adults (1.63-1.94) and capacity for collaboration (7.72-7.99). Findings indicate improvement in perceived professional issues and need for improvement in the geriatric care environment and care redesign to progress to becoming an Age-Friendly health system. This was an initial step in a health system to improve care quality through health workforce development.

#### PERSONS LIVING WITH COGNITIVE IMPAIRMENT SHARE THEIR VIEWS ON TECHNOLOGY

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The purpose of this study was to examine the experience of adults living with cognitive impairments and that of their care partners with digital technology including current use of, ease with and openness to using smart assistive technologies (SATs). SATs for older adults with (and without) cognitive impairments have become increasingly commonplace. Research on various digital devices has focused primarily on supporting users' independence and care partner concerns for safety and security. Our qualitative, interview-based research project provided digital devices chosen by participants to address a specific personal goal. Interviews were conducted in the home and set-up assistance was provided during the initial interview. At the conclusion of the trial period, a second interview was conducted in the home. We describe the participants' commendations for, expectations of, and frustrations with current technology as well as recommendations for potential, helpful digital technology. Current technology offers great promise but a disconnect between the design of

digital technologies and the needs and wishes of the end-user still exists. This study will help inform additional user-driven application SATs, including those aimed at enhancing enjoyment and a higher quality of life.

#### TOGETHER THROUGH DEMENTIA: MEASURING RELATIONSHIP SATISFACTION FOR VETERANS WITH DEMENTIA AND THEIR SPOUSES

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Current and prior relationship quality can have significant impacts on the mental and physical health of individuals with dementia (IWD) and their spousal caregivers (CGs). Yet, marital satisfaction is not often assessed. This poster examines use of the Dyadic Adjustment Scale (DAS), a widely-researched marriage counseling tool, for contextualizing interpersonal factors beyond established measures of quality-of-life (QoL), burden, and depression. Community-dwelling spousal CGs ( $n = 49$ ) and Veterans with dementia ( $n = 37$ ) completed self-report measures including dyadic relationship satisfaction/distress, mutuality, QoL, depression, burden, and the IWD's cognitive status. Descriptive statistics, bivariate correlations, and regressions were performed. Scores on the DAS significantly correlated with CG QoL (.567,  $p < .001$ ), CG depression (-.525,  $p < .001$ ), CG burden (-.428,  $p = .002$ ), IWD's cognitive status (.355,  $p = .034$ ), and IWD social engagement (-.424,  $p = .011$ ). IWD-reported DAS scores were positively correlated with IWD QoL (.381,  $p = .024$ ), CG QoL (.340,  $p = .043$ ), and IWD subjective health (.360,  $p = .031$ ). Regression analysis showed CG DAS ( $b = .188$ ,  $\beta = .464$ ,  $p = .002$ ) and IWD social engagement ( $b = -2.806$ ,  $\beta = -.37$ ,  $p = .012$ ) are significantly predictive of CG QoL;  $F(2, 32) = 15.865$ ,  $p < .001$ ;  $R^2 = .495$ . Findings suggest that the DAS provides important relationship quality insights and may improve QoL needs assessments for caregiving support and respite services, including CG willingness to continue in the CG role. Examining the DAS longitudinally could also inform intervention delivery as dementia severity progresses.

#### CULTURE-RELATED TASK DIFFICULTIES AND NEGATIVE CONSEQUENCES FOR CAREGIVERS FROM DIVERSE COMMUNITIES

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The Diverse Elders Coalition, in partnership with its six member organizations and the Benjamin Rose Institute on Aging, completed a national survey of 840 family and friend caregivers from diverse racial, ethnic, and sexual orientation communities to understand their unique caregiving issues and challenges. Data from a subsample of 404 caregivers identifying as Hispanic/Latino, Asian, Southeast Asian or from multiple ethnicities were examined to determine