INNOVATIONS IN AGING DAY 2021
ABSTRACT COMPETITION

DATE SUBMITTED: 3/31/2021
NAME (Primary Author): Chetan P. Ahire, Ph.D. Student
AFFILIATION: OUHSC Student, Graduate College, Department of Pathology
EMAIL: chetan-ahire@ouhsc.edu

ABSTRACT CATEGORY: Clinical care or research
ABSTRACT TITLE: Chemotherapy-Induced Vascular Cognitive Impairment: Role of Endothelial Senescence
CO-AUTHORS: Priya Balasubramanian, Stefano Tarantini, Tamas Kiss, Adam Nyul-Toth, Jordan Delfavero, Feng Yan, Qinggong Tang, Zoltan Ungvari, Anna Csiszar

ABSTRACT SUBMISSION:
Introduction: There is evidence from case studies on long-term cancer survivors that chemotherapy induces progressive adverse effects on cognitive function in 30 to 50% of cancer survivors. Although chemotherapy affects multiple cognitive domains, no strategies exist to prevent/reverse chemotherapy induced cognitive impairment (CICI). Progress in this field is hampered by the lack of adequately controlled clinical studies and preclinical models, making it difficult to investigate the underlying mechanisms of CICI. We have established an innovative mouse model, p16-3MR mice treated with the chemotherapeutic drug paclitaxel (PTX) to address this question.

Hypothesis: Although chemotherapeutics does not cross the blood-brain barrier; endothelial cells lining blood vessels are exposed to the highest concentrations of these drugs, making them uniquely vulnerable to drug-induced DNA damage and cellular senescence. Our working hypothesis is that chemotherapy-induced endothelial senescence is a major contributor to neurovascular dysfunction, dysregulation of cerebral blood flow (CBF) and blood-brain barrier (BBB) disruption contributing to impaired cognitive function.

Results: Behavioral assessment with radial arm water maze test provided evidence for impaired cognitive function following chemotherapy (p<0.05). Endothelial vasodilator dysfunction affects cognitive function; thus, functional hyperemia responses and the BBB integrity were assessed in the somatosensory cortex. The results from control and PTX-treated animals showed that endothelial-dependent CBF responses were markedly attenuated (p=0.07) and BBB integrity (p=0.0412) is compromised in PTX treated mice. Treatment with PTX has also been observed to cause vascular rarefaction in the somatosensory cortex (p<0.05). DNA damage was observed in the cortex of PTX treated mice quantitively. The number and activation level of microglia (p=0.0001) increased significantly in response to PTX treatment. Flow cytometry-based analysis of Cerebromicrovascular endothelial cells proved that senescent endothelial cells have accumulated in the brain following chronic PTX treatment.

Conclusion: Our results prove that PTX treatment induces cellular senescence in Cerebromicrovascular endothelial cells via DNA damage response, which contributes to vascular rarefaction, decreased CBF and loss of BBB integrity, thus inducing neuroinflammation and CICI.
Key Word 1: chemotherapy induced cognitive impairment (CICI); Key Word 2: cerebral blood flow (CBF); Key Word 3: blood-brain barrier (BBB)
ABSTRACT CATEGORY: Clinical care or research  
ABSTRACT TITLE: Goal-Directed, Task-Specific Training Improves Activity of Daily Living Performance in People with Alzheimer’s Disease and Related Dementias  
CO-AUTHORS: Jonathon Baldwin MS, CNMT, Julie Stoner, PhD

ABSTRACT SUMMISSION:
Background: Progressive disability in activities of daily living (ADL) is inevitable for people with Alzheimer’s disease and related dementias (ADRD). Attempts to slow or prevent ADL disability have been unsuccessful despite making progress in behavioral training methods. Missing from this research is an emphasis on how we maximize a patient’s engagement during training with person-centered goals and the rigorous examination of implementation protocols (dosing and training methods) which may advantage learning in people with ADRD. Our team addressed this gap with the development of the STOMP (Skill-building through Task-Oriented Motor Practice) intervention which creates methods for obtaining and practicing individualized ADL goals and tests high-intensity protocols that appear to advantage learning as well as sustained learning over time.

Methods: Randomized-controlled trial with 32 participants with dementia assigned to either the original, intensive STOMP protocol (3 hours/day, 5 days/week for 2 weeks) or a less-intensive STOMP protocol (1 hour/day, 2 days/week for 2 weeks) delivered by an occupational therapy assistant in the home. Inclusion criteria: English speaking, adults 50-90 years old that live with a legally-authorized representative that can provide consent, who can follow a one-step command, have three ADL goals they want to address and can participate in an intense therapy protocol. Blinded occupational therapists completed baseline, post-intervention and 3-month follow-up assessments in the home. Repeated measurements included the Goal Attainment Scaling (GAS) of observed activities of daily living. Repeated measures ANOVA and graphs were used to interpret and display results.

Results: There were no differences between the groups for age, gender, education, type of dementia or mean MMSE at baseline. Post-intervention GAS scores for high intensity group (M=65.4; SD: 11.2) and low intensity scores (M=60.2; SD 13.3) were significantly higher than baseline within groups (p<0.0001) but not significantly different between groups (p=.91). Ninety-day follow-up scores were significantly higher than baseline and post-intervention (p=0.025). There is a trend for the 90-day follow-up scores for the high intensity group to be higher than the lower-intensity group.

Conclusions: People with ADRD receiving the STOMP intervention in their homes improved significantly in observed ADL performance post-intervention and the improvements were sustained.

Key Word: ADL
INNOVATIONS IN AGING DAY 2021
ABSTRACT COMPETITION

DATE SUBMITTED: 3/23/2021
NAME (Primary Author): H.M. Farrar, Assistant Professor
AFFILIATION: OUHSC Faculty, College of Nursing, Dept. of Nursing
EMAIL: helen-farrar@ouhsc.edu

ABSTRACT CATEGORY: Clinical care or research
ABSTRACT TITLE: Concept Analysis of Social Model Hospice
CO-AUTHORS: Scott, K.E.; Clark, J.K.

ABSTRACT SUBMISSION:
Context: The term Social Model Hospice (SMHh) first appeared late in the 20th century as a label for a complementary model to medical hospice care. Two decades later, the term is inconsistently defined and used by scholars, healthcare providers, public consumers, and those within the SMHh movement. Also known as community homes for dying people, the SMHh offer places of warmth and loving care for people who can no longer remain in their own homes. Considerable lack of awareness about the model has limited it's use and growth as an innovative model of end of life care.

Objective: The director of a SMHh, a clinician providing care in a SMHh and a Nurse Researcher collaborated to perform a concept analysis to trace the development of concept and confirm an evolving definition based on scholarly analysis. The hope is that this work will assist in the scholarly development of research documenting the effectiveness of the model of care.

Methods: Rodger’s evolutionary method was used to review literature describing the use of the concept over time and application of the concept within the context of hospice and palliative healthcare. Database and hand searching was done for the years 1975 to 2020.

Results: Twenty-five publications were used for analysis, 13 from the database search process and 12 from hand searching relevant citations.

Conclusion: Antecedents include 1) terminal illness, 2) resource crisis, 3) unmet needs falling outside the scope of medical hospice care, and 4) desire to experience death outside the medical system and/or personal home. Attributes include: 1) dedicated home, 2) round-the-clock, individualized end-of-life care, 3) care option when dying at home becomes unmanageable, 4) collaboration with medical hospice services, 5) non-profit organization funded by community philanthropy, 6) environment to support loved ones, and 7) community volunteer involvement. Consequences include 1) effective end-of-life care for dying patients and their families, 2) innovative healthcare design, 3) nationwide network of like-minded providers, and 4) platform for end-of-life community education. Clarity of the SMHh concept will facilitate access to end-of-life care, further the model’s development, formalize research endeavors, and foster community education.

Key Word 1: concept analysis; Key Word 2: social model of hospice home; Key Word 3: end of life care
INNOVATIONS IN AGING DAY 2021
ABSTRACT COMPETITION

DATE SUBMITTED: 3/17/2021
NAME (Primary Author): Carol E. Johnson, PhD, AuD, Professor
AFFILIATION: OUHSC Faculty, College of Allied Health, Communication Sciences and Disorders
EMAIL: carole-johnson@ouhsc.edu

ABSTRACT CATEGORY: Clinical care or research
ABSTRACT TITLE: Entry-Level, Low-priced Hearing Aids Enhance Quality of Life for Older Oklahomans with Low Incomes
CO-AUTHORS: A. M. Jilla, PhD, AuD; J. Park, BS; J. Huddleston, BS; J. Baldwin, MS

ABSTRACT SUBMISSION:
BACKGROUND: Untreated sensorineural hearing loss (SNHL) can result in the reduction of health-related quality of life (HRQoL), and is associated with depression, isolation, and cognitive decline. Only one in five with hearing loss gets hearing aids possibly due to cost. The average price of a hearing aid in the US is $2,500.

STUDY DESIGN: Randomized clinical trial

PURPOSE: To determine the benefits from low-priced, entry-level advanced digital technology (ADT) hearing aids for older adults with low incomes.

METHOD: Participants were recruited from the United Way Hearing Aid Bank which provides low-priced entry-level ADT hearing aids to older adults with low incomes and live in one of seven central Oklahoma counties. Eighty adults with mild and moderate SNHLs were randomly assigned to treatment (N = 42) and waiting list control groups (N = 38) and were administered the World Health Organization Disability Assessment Schedule 2.0 (WHO-DAS 2.0), the Hearing Handicap Inventory for the Elderly (HHIE), and the Abbreviated Profile of Hearing Aid Benefit (APHAB). The treatment group completed surveys before and 8 weeks after hearing aid fitting. Those in the waiting list control group completed outcome measures at baseline and 8 weeks after. Participant enrollment met requirements for sample size calculations to yield 80% power, assuming a 5% alpha level. Variables were assessed for normality using Shapiro-Wilks tests.

RESULTS: Treatment and control groups were equivalent for age (M ~ 67.1 y), mild and moderate SNHL, and baseline scores on outcome measures. Groups differed on sex composition and experience with hearing aids. Analysis of covariance with sex and experience as covariates indicated that those in the treatment group fit with low-priced, entry-level ADT hearing aids had significantly greater hearing handicap reduction (HHIE; p <0.0001) and acoustic change scores (APHAB; p<0.0001) than the waiting list control group. The WHO-DAS 2.0 showed improvement on a few subscales for the treatment group.

DISCUSSION: Low-priced, entry-level ADT hearing aids provided a significant increase of HRQoL and acoustic benefits for older Oklahomans with low incomes. Patients were satisfied with their hearing aids and wore them 4 to 8 hours/day.
CONCLUSION: Low-priced, entry-level digital hearing aids provide acoustic benefits and enhanced health-related quality of life for older Oklahomans with low incomes. (Work support by OCAST Health Research Grant 16-118)

Key word 1: Elderly
INNOVATIONS IN AGING DAY 2021
ABSTRACT COMPETITION

DATE SUBMITTED: 3/19/2021
NAME (Primary Author): Carol E. Johnson, PhD, AuD, Professor
AFFILIATION: OUHSC Faculty, College of Allied Health, Communication Sciences and Disorders
EMAIL: carole-johnson@ouhsc.edu

ABSTRACT CATEGORY: Health professions education
ABSTRACT TITLE: Experiential Aging Simulation for Developing Empathy and Problem-solving Skills when serving Older Adults
CO-AUTHORS: None

ABSTRACT SUBMISSION:
BACKGROUND: The number of people over 65 years of age is increasing, and many of those individuals will have arthritis, hearing loss, low vision, and other comorbidities. Future healthcare providers need to have empathy and develop problem-solving skills that are appropriate for older adults.

DESIGN: Case study

PURPOSE: To describe an experiential learning aging simulation module

METHODS: Doctor of Audiology students executed activities of daily living and ambulated throughout the OUHSC campus using kits simulating conditions of aging. The GERontological Test Suit (GERT suit) and Simulation of Eye Disease Glasses Kit (SEDG Kit). The GERT suit simulates opacity of the lens (goggles to simulate cataracts), narrowing of the visual field (e.g., side blinders), high-frequency sensorineural hearing loss (earmuffs), loss of head mobility (neck brace), stiffness in the joints (elbow and knee restraints), loss of strength (wrist, ankle weights), reduced ability to grip objects (special gloves), and loss of motor coordination (shift in the center of gravity with weight vest). The SEDG Kit simulates macular degeneration, cataracts, glaucoma, unilateral retinal detachment, diabetic retinopathy, and retinitis pigmentosa. After concrete experiences simulating aging, students participated in reflective observations (e.g., How did GERT suit and the SEDG Kit experiences impact mobility and falls risk?), abstract conceptualization (e.g., What aspects of the John W. Keys Speech and Hearing Center (JWKSHC) present obstacles to older patients?), and active experimentation (What changes can we make to improve accessibility for our older patients in the JWKSHC?).

RESULTS: Results of pre-versus post-module experience show a positive shift in self-reported empathy and problem-solving skills when working with older patients. Student’s qualitative reflections on the module indicated that they enjoyed and found the simulations useful. For example, one wrote, “It [the lab] taught me to see from their point of view. It taught me that I need to slow down, listen, and explain things in a way that is easy to understand.” Another comment was “Actually, experiencing simulated effects of aging made content info in our course more meaningful.”

CONCLUSION: Our experiential aging simulation module helped to increase empathy and problem-solving skills of our AuD students when working with older adults.

Key Word: Simulation
DATE SUBMITTED: 3/19/2021  
NAME (Primary Author): Carol E. Johnson, PhD, AuD, Professor  
AFFILIATION: OUHSC Faculty, College of Allied Health, Communication Sciences and Disorders  
EMAIL: carole-johnson@ouhsc.edu  

ABSTRACT CATEGORY: Community-based interventions  
ABSTRACT TITLE: The United Way Community Hearing Aid Bank for Older Adults with Low Incomes in Central Oklahoma  
CO-AUTHORS: None  

ABSTRACT SUBMISSION:  
BACKGROUND: The average price of a hearing aid in the US is $2,500 and Medicare and Oklahoma Medicaid programs do not provide them for older adults. The United Way Community Hearing Aid Bank (UWCHAB) in the John W. Keys Speech and Hearing Clinic in the Allied Health Clinics at the University of Oklahoma Health Sciences Center provides entry-level advanced digital technology (ADT) hearing aids at low cost to adults who are at least 1.7 times below the US Federal Poverty Level and live in either Canadian, Cleveland, Kingfisher, Lincoln, Logan, Oklahoma, or Pottawatomie counties. The cost of UWCHAB hearing aids includes the diagnostic evaluation, hearing aid fitting, and 2- and 4-week follow up appointments.  

DESIGN: Cross-sectional survey  

SAMPLE: The average age of our patients is 67 y, with a female to male ratio of 2:1 and a median income of $13,778 (IQR: $9,645; $19,107). Our patients take between 3 and 6 different medications per day and have the following comorbidities: arthritis (50%), hypertension (45%), diabetes (43%), ocular disorders/low vision (43%), and hyperlipidemia (29%). Patients reported living an average of 20 miles away from our clinical services.  

METHOD: 80 patients were followed for one year after fitting of hearing aids. Patients completed the World Health Organization Disability Assessment Schedule 2.0 (WHO-DAS 2.0), the Hearing Handicap Inventory for the Elderly (HHIE), Abbreviated Profile of Hearing Aid Benefit (APHAB), and the Satisfaction with Amplification in Daily Life (SADL) pre-fitting, and at 2-mo, 6-mo, and 12-mo post-fitting of hearing aids.  

RESULTS: Entry-level ADT hearing aids and associated follow-up services resulted in a reduction of hearing handicap (HHIE: p < 0.0001) and an increase in acoustic benefits (APHAB: p < 0.0001) at 2-mos post-fitting. Patients were also very satisfied with their hearing aids (SADL) and wore them between 4 to 8-hr/day. No significant differences were seen in benefit-change scores measured at 2-mo compared to 6-mo, and 12-mo for reduction of hearing handicap (HHIE: 6-mo; p = 0.761 and 12-mo; p = 0.81) and acoustic benefit (APHAB: 6-mo; p = 0.16; 12-mo; 0.89). Satisfaction from hearing aids remained consistent at 2-mo, 6-mo, and 12-mo post-fitting.  

CONCLUSIONS: The UWCHAB results in long-term benefits from ADT hearing aids and associated services provided to older Oklahomans with low incomes.
Key Word: Community hearing aid bank
DATE SUBMITTED: 3/26/2021
NAME (Primary Author): Keith Kleszynski, Assistant Professor of Research
AFFILIATION: OUHSC Faculty, College of Medicine, Section of Geriatrics
EMAIL: keith-kleszynski@ouhsc.edu

ABSTRACT CATEGORY: Health professions education
ABSTRACT TITLE: Tele-mentoring to Improve Response to COVID-19 in Rural Oklahoma Nursing Homes
CO-AUTHORS: Thomas Teasdale, Karen Kinney, Teri Round, Amy Costner-Lark, Lee Jennings

ABSTRACT SUBMISSION:
Background: According to the Oklahoma State Department of Health, as of January 7, 2021, 2,642 Oklahomans have died from COVID-19, including 807 long-term care residents and 6 staff (31% of all deaths). On November 9, 2020, in an effort to improve state nursing home response to the COVID-19 pandemic, we launched a state hub for the Project ECHO National Nursing Home COVID-19 Action Network. Our hub provides free virtual training and tele-mentoring to nursing homes across the state, and approximately 2/3 of the homes in Oklahoma are in rural areas.

Methods: Sources of feedback included staff responses assessing topics of interest for ECHO sessions for 11 of the first 15 sessions. The topics for these sessions were, Preventing and Limiting the Spread of COVID-19 in Nursing Homes, Guidance and Practical Approaches for Use of PPE during COVID-19, Approaches to Cohorting during COVID-19.

Results: We sought this feedback to make sure ECHO sessions were as relevant and engaging as possible to promote attendance and active participation during sessions. The Oklahoma Project ECHO National Nursing Home COVID-19 Action Network housed out of the University of Oklahoma Health Sciences Center benefits from an array of content experts on campus that were recruited for this effort so utilizing staff feedback to improve session content within a week or two was possible.

Conclusions: Nursing homes have similar concerns about how COVID-19 has impacted care delivery and quality as well as staff and resident morale. Project ECHO is a platform the majority of Oklahoma nursing homes are using to share approaches to combat these challenges.

Key Word 1: tele-mentoring; Key Word 2: COVID-19; Key Word 3: nursing homes
ABSTRACT SUBMISSION:

Background: The Oklahoma Dementia Care Network (OkDCN) secured Cares Act funding to improve telehealth access and infrastructure within Oklahoma’s nursing homes (NHs) to offset the negative impact of COVID-19 in that setting. Our three aims broadly addressed resident health and well-being: 1) conduct nursing home staff education related to COVID19 risk reduction, 2) increase telemedicine visits, and 3) decrease social isolation of residents via virtual visits with family caregivers. The goal of these activities is to help partnering sites prevent, prepare for, and respond to the COVID-19 pandemic through improved smart-tablet/telehealth access and use.

Methods: An implementation and training plan was developed, materials were purchased, and NHs were recruited. Apple “shortcuts” were loaded onto iPads to facilitate intended use. Online educational materials were prepared for staff and linked to shortcuts. Easy-to-use, laminated guidelines for connecting residents with family members and with provider telehealth services were provided. A brief training on iPad usage was conducted at hand-off. Real-time data collection was supplemented with a follow-up survey to all NHs and a telephone interview with NHs not responding to the survey. Evaluation included (a) process evaluation, (b) number of staff trained on using iPads, (c) frequency of use for clinical education, (d) frequency of iPad use for telemedicine visits, (e) use of Medicare telemedicine billing codes, (f) frequency of iPad use for family virtual visits, and (g) staff satisfaction with iPads and training.

Results: 60 telecommunication devices (iPads) and accessories were prepared and distributed in highly identifiable “Smart Tablet Bags” to 30 nursing homes in 20 counties over a 10-month period. (a) Implementation was delayed almost six months due to complications with iPad purchasing and programming. After two months of tracking, four NHs had yet to use the iPads. Usage ranged from 1-103 times. (b) 45 staff were trained on iPad use at handoff. (c) iPads were used for education 36 times, the least common use. (d) Telehealth accounted for 67 uses. (e) Medicare billing was difficult to obtain. (f) Virtual family visits accounted for 166 of the times iPad use was recorded. (g) Satisfaction was uniformly high across all survey questions.

CONCLUSIONS: iPads were well accepted as a way to connect family and reduce social isolation. Tracking telehealth and staff education use was difficult.
Key Word 1: Nursing Home Resident Dementia; Key Word 2: Telehealth and Wellness; Key Word 3: COVID-19 Response
INNOVATIONS IN AGING DAY 2021
ABSTRACT COMPETITION

DATE SUBMITTED: 3/29/2021
NAME (Primary Author): Kerstin M. Reinschmidt, PhD, MPH, Assistant Professor
AFFILIATION: OUHSC Faculty, College of Public Health, Health Promotion Sciences
EMAIL: kerstin-reinschmidt@ouhsc.edu

ABSTRACT CATEGORY: Community-based interventions
ABSTRACT TITLE: Expanding the Capacity of Community Health Workers in Oklahoma to Address Dementia
CO-AUTHORS: Terence Gipson, MPH; Tamara Braxton, CHW

ABSTRACT SUBMISSION:

Background: Community health worker (CHW) is an umbrella term for a diverse workforce. A CHW is defined as a “frontline public health worker who is a trusted member of and/or has an unusually close understanding of the community served.” Studies demonstrate that CHWs are effective in reducing chronic disease disparities. The benefits of CHWs in promoting healthy aging and addressing underlying challenges of Alzheimer’s disease and related dementias (ADRD) are now being documented. Increasingly collaborating with public health and health sciences partners, CHWs in Oklahoma are expanding their capacity to address ADRD among the state’s aging population.

The CHW component of the Oklahoma Dementia Care Network aims to address gaps in dementia care education and training to improve the health outcomes for older adults with ADRD. The specific objective is to deliver community-based programs that provide CHWs with the knowledge and skills to improve these health outcomes. Taking a community-based participatory approach, public health and community partners collaborate to accomplish this objective.

Methods: First, we developed a train-the-trainer dementia training by drawing from existing evidence-based sources on ADRD, and from the national CHW Core Consensus (C3) Project that provides a foundational framework for CHW trainings. Our innovative training includes basic information on dementia, a section on C3 CHW roles that address dementia, appendices with training resources, and a power point with partial voice-over. Our zoom-delivered 8-hour pilot resulted in 13 CHWs receiving certificates of completion.

Second, five trainers from the pilot cohort collaborate to implement the zoom-delivered training. Three 6-hour trainings in October 2020, and February and March 2021 had a total of 36 participants. Pre/post evaluation on dementia knowledge showed improvement. Qualitative feedback included that participants valued new strategies and recommended the use of videos.

Third, we are developing dementia integration and evaluation plans with two organizations. CHWs will address dementia by using a flow chart and embedded tools to assess their client’s needs, refer clients, follow-up, and document their work.

Outcomes include a new dementia training implemented by CHWs, improved CHW dementia knowledge and skills, and a CHW workforce prepared for dementia care. Expected long-term outcomes include improved quality of care and life for people living with dementia.
**Key Word 1:** Community Health Workers/Community Health Representatives; **Key Word 2:** Dementia Training; **Key Word 3:** Community-based Interventions
INNOVATIONS IN AGING DAY 2021
ABSTRACT COMPETITION

DATE SUBMITTED: 4/7/2021
NAME (Primary Author): Claire Reynolds, Resident
AFFILIATION: OUHSC Resident/Fellow, College of Medicine, OB/GYN
EMAIL: anna-reynolds@ouhsc.edu

ABSTRACT CATEGORY: Clinical care or research
ABSTRACT TITLE: Evaluating the Relationship Between Ovarian Reserve and Facial Age as Determined by Computer Software
CO-AUTHORS: Jamie Dubaut, Karl Ricanek, Jay Olshansky, Amrutha Setharum, LaTasha Craig

ABSTRACT SUBMISSION:
Objective: To evaluate association between perceived facial age (determined by Janus Facial Analytics Platform, a software provided by Lapetus Solutions, Inc.) and antimullerian hormone (AMH) in patients at a university-based infertility clinic.

Design, Materials and Methods: A retrospective pilot study for women undergoing fertility evaluation at OU Physicians Reproductive Medicine clinic. Patients seen from 2014-2017 were included who had AMH drawn and photo taken. Charts were reviewed for antral follicle count, cycle day 3 follicle-stimulating hormone (FSH), estradiol, ethnicity, race, BMI, smoking status and fertility diagnosis. De-identified photographs were analyzed using facial analytics software to determine patient’s perceived ages relative to chronological age. AMH cutoffs of 1.0, 0.7, and 0.4 ng/mL were used for categorization.

Patients were categorized based on the difference between perceived and chronological age (e.g. phenotypic distance). Chi-square analysis was performed in SAS 9.4.

Results: 248 patients met inclusion criteria. Phenotypic distance ranged from 17 years younger to 23 years older; Janus Facial Analytics showed a face age older than actual age in 52.8% of patients. Actual ages ranged from 23-45 years; 42.7% were 35 or older. No association was found between age difference and smoking status, ethnicity, race or BMI. A significant association was demonstrated between women whose faces appeared younger than actual ages and an AMH≤0.7 (p=0.04), as well as AMH≤0.4 (p=0.04). When stratified by age, women over 35 with a younger perceived age were 4.95 (95% CI 1.32-18.57) times more likely to have an AMH ≤0.4, compared to women with older perceived age.

Conclusions: We hypothesized poor ovarian reserve to be associated with older perceived age. Instead we found lower AMH associated with younger perceived age, particularly in women over 35. Inconsistencies in lighting, makeup and photo quality challenge the accuracy of the facial analytic software. In future studies, we will control for these variables and re-evaluate these correlations.

Support: Lapetus Solutions, Inc. provided Janus Facial Analytics software and was co-founded by Ricanek and Olshansky.

Key Word 1: ovarian; Key Word 2: reserve aging; Key Word 3: face aging
DATE SUBMITTED: 4/1/2021
NAME (Primary Author): Emily Roberts, Assistant Professor
AFFILIATION: OSU Faculty, Department of Public Health
EMAIL: emily.roberts12@okstate.edu

ABSTRACT CATEGORY: Community-based interventions
ABSTRACT TITLE: Visioning for the Adaptive Reuse of Closed Malls for Mixed-Use Dementia Friendly City Centers: Community Stakeholder Focus Group Outcomes
CO-AUTHORS: None

ABSTRACT SUBMISSION:
The double societal hit of dementia and infectious disease outbreaks like the COVID-19 pandemic have raised great concerns for the future of institutional care settings for people living with dementia. In addition to improved safety precautions for infection spread, it is imperative that mental health and psychosocial support be concurrently delivered, calling to attention the urgent need for alternatives to traditional care settings.

It is estimated that 5.4 million Americans have some form of dementia and these numbers are expected to rise in the coming decades, leading to an unprecedented demand for memory care housing and services.

In searching for innovative options to create more autonomy and better quality of life in dementia care settings, adaptive reuse of existing structures, in particular vacant urban malls, may be one option for the large sites needed for the European model of dementia villages. These settings may become sustainable Dementia Friendly City Centers (DFCC), because in the case of existing mall construction, the internal infrastructure is in place for lighting, HVAC, with varied spatial configuration of public spaces.

This presentation describes the community engagement research being conducted by a team at Oklahoma State University, laying groundwork for the DFCC model for centralized dementia programs, services and attached housing. Stakeholder focus groups from four disciplines (caregiver, medical staff, designer, community development) were shown preliminary site designs for a case study site and asked for feedback on the model.

Five principle themes emerged including: community education and acceptance; amenities and activities, maintaining family connections, resident adaptation and staffing. Stakeholders agreed on the potential for innovation in the DFCC model which could further a culture of dementia care which is inclusive, progressive and convergent with the needs of an aging population.

Key Word 1: Memory care; Key Word 2: Adaptive Reuse; Key Word 3: Person-centered care
DATE SUBMITTED: 3/18/2021
NAME (Primary Author): Stefano Tarantini, Assistant Professor of Research
AFFILIATION: OUHSC Faculty, College of Medicine, Allied Health, Public Health, Department of Biochemistry/Center for Geroscience and Department of Health Promotion Sciences
EMAIL: stefano-tarantini@ouhsc.edu

ABSTRACT CATEGORY: Clinical care or research
ABSTRACT TITLE: NAD+ Supplementation for Prevention of Age-Related Cognitive Decline: translating preclinical findings into an innovative clinical trial
CO-AUTHORS: Tamas Kiss, Priya Balasubramanian, Tamas Csipo, Adam Nyul-Toth, Agnes Lipecz, Peter Mukli, Anna Csiszar, Zoltan Ungvari, Andriy Yabluchanskiy

ABSTRACT SUBMISSION:
Understanding molecular mechanisms involved in vascular aging is essential to develop novel interventional strategies for treatment and prevention of age-related vascular pathologies. NAD+ is a rate-limiting co-substrate for sirtuin enzymes, which regulate pro-survival pathways in the vasculature. Epidemiological studies provide critical evidence that vascular aging is characterized by NAD+ depletion.

Pre-clinical evidence shows that restoration of NAD+ levels exert significant vaso-protective effects, improving endothelium-dependent vasodilation, attenuating oxidative stress, and rescuing age-related changes in gene expression. Existing preliminary evidence suggests that treatments aimed at restoring the age-related cellular NAD+ deficiency may hold promise to improve vascular endpoints, delay cognitive decline, and improve health outcomes in aging. An innovative approach is being developed to investigate the impact of NAD+ supplementation on microvascular endothelial function, functional cerebral blood flow responses, and cognitive performance in older adults.

We have designed a 2x2 study to investigate the effects of oral administration of NR (1g/day for 10 weeks) or placebo (10 weeks) in healthy older adults (60 years of age) in a randomized, double-blinded, placebo-controlled, crossover study. Peripheral micro- and macrovascular endothelial function will be evaluated using laser speckle contrast imaging and flow-mediated dilation approaches.

Neuroactivity-induced cerebral blood flow increase will be assessed using functional near-infrared spectroscopy (fNIRS), transcranial Doppler flowmetry (TCD), and dynamic retinal vessel analysis (DVA). Lastly, using a comprehensive battery of cognitive tests (CANTAB), we plan to evaluate performance in different cognitive domains including learning, memory, reaction time, and processing speed.

Outcomes evaluation: These techniques are currently already in use and have been validated to reliably detect age-related deficits in healthy dementia-free individuals. In our preliminary validation studies, endothelial function is impaired with aging (FMD, 5.6 ± 0.7% vs. 8.3 ± 0.6% in young, p = 0.0061) and neurovascular coupling responses were 50% lower in older healthy adults. These changes in endothelial function and neurovascular coupling responses associated with decreased cognitive function (reaction time: 269±12 vs 340±19; executive function: 8±1.9 vs 27±2.8; working memory: 3.62±1 vs 12.6±0.97, p&lt;0.0001).
Key Word: Vascular Cognitive Impairment