

### THE SEARCH STUDY: A QUALITATIVE INQUIRY INTO DIVERSE STAKEHOLDER PERSPECTIVES ON HEALTHY AGING ACROSS CHICAGOLAND

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Older adults face increased risk of chronic diseases of aging such as Alzheimer's dementia and other adverse age-related outcomes. However, the conceptualization of healthy aging and how age-related issues are addressed in community-based structures, particularly among racial and ethnic minorities, remain poorly understood, especially from the Stakeholder perspective. Stakeholders, such as faith leaders and members of community-based organizations, engage in regular negotiations to advance health equity in their communities by partnering and collaborating with older adults and their families as well as other local and federal organizations. The Stakeholder Engagement in Aging Research and Community Health (SEARCH) Study employs multiple research methods to illuminate Stakeholders' perspectives on barriers and facilitators to healthy aging in diverse communities. This presentation highlights findings from in-depth, qualitative interviews with Stakeholders (N=37) serving African American, Latinx, and South Asian older adults. Emergent themes suggest that systemic racism, stigmatization, limited health literacy, and cultural beliefs serve as barriers to healthy aging across groups. Within groups, Stakeholders report precarious immigration status and fragile and fragmented life situations as barriers among Latinx older adults, while acculturative stress presents a challenge to healthy aging in South Asian older adults. Food insecurity and neighborhood factors such as exposure to violence and socio-economic disadvantages act as barriers among African American older adults. Conversely, religious faith and spirituality, familial support, and culturally-congruent care serve as facilitators across groups. The findings from this study underscore the continued need for intersectional, inclusive, and culturally-informed approaches to supporting healthy aging within diverse communities.

### HEART FAILURE, ARRHYTHMIAS AND DEMENTIA IN THE "OLDEST OLD" OF SOUTH CENTRAL UNITED STATES

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Heart failure and dementia are common age-related conditions. Heart failure and associated comorbidities of hypertension and arrhythmias may impact cognition. Retrospective data of 311 patients averaging 98 ( $\pm 3.2$ ) years who received treatment at the University of Arkansas for Medical Sciences were analyzed for diagnoses, prescribed medications and health conditions relevant to heart failure, hypertension, arrhythmias and dementia. 74% of the subjects were white, non-Hispanic, 24% were African American, and 2% were of unknown ethnicity. 83% were women and 17% were men. Only 251 (81%) of the reviewed charts had blood pressures recorded, of whom 43% (n=114) had systolic pressures

>140mmHg. Furthermore, 50% (n=156) of patients had heart failure, and 29% (n=89) had dementia. Of those with dementia, 35% had an arrhythmia. For those without a diagnosis of dementia or any treatment for dementia, 25% had an arrhythmia. Heart failure and arrhythmias have not been well studied as an etiological factor for dementias. In our cohort, the presence of heart failure diagnoses was not different in those with dementia versus those without dementia. However, more patients with dementia had arrhythmias versus those without dementia, suggesting that arrhythmias may contribute to cognitive decline, even in the oldest old. Approximately 70% of the arrhythmias were atrial fibrillation. We did not have data on the management of these arrhythmias and whether anticoagulants were being used appropriately, especially for atrial fibrillation. Nevertheless this highlights the importance of close management of arrhythmias for maintaining cognitive health in older adults.

### LOW GLUCOSE ENHANCES THE CYTOPROTECTIVE EFFECT OF METFORMIN AGAINST DOXORUBICIN-INDUCED CYTOTOXICITY

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Metformin, an oral anti-diabetic drug, is currently being investigated for its anti-aging properties and has also been used as adjunct therapy in cancer. Cancer is a disease of aging. Type 2 diabetes is also prevalent in older adults. We wanted to test the hypothesis that metformin could protect normal cells during chemotherapy treatment under different glucose conditions. We used C2C12 myoblast cells to study cellular bioenergetics, variations in gene expressions, and biochemical alterations induced by metformin and pegylated liposomal doxorubicin (L-Doxo) under low glucose (2.7 mM or 50 mg/dL) and normal physiologic glucose (5.5 mM, or 100 mg/dL) conditions. Using confocal microscopy, we noted that treatment of C2C12 cells with 30  $\mu$ g/mL L-Doxo under low glucose and normal physiologic glucose conditions induced cellular defects. Furthermore, L-Doxo treatment dysregulated the expression of mitochondrial fission and fusion genes, which may influence transformation of the network's connectivity. L-Doxo treatment significantly reduced mitochondrial oxygen consumption rate (OCR) and extracellular acidification rate (ECAR). However, pre-treatment with 100 nM metformin provided protection against L-Doxo-induced damage and increased cell viability and ATP levels in cells even under low glucose conditions. Our data provide further evidence by which low dose metformin exerts protective effects against L-Doxo, a chemotherapeutic drug, under low glucose conditions. Metformin appears to act via AMPK $\alpha$ , Raptor, and SRF, and has significant cellular protective effects that may be useful in cancer and/or aging.

### CHOREOGRAPHING INTERACTION WITHIN THE U-M HOMELAB: CONSIDERATIONS FOR AN OLDER ADULT POPULATION

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