REASONING ABOUT LIFE TRANSITIONS IN RELATION TO PERCEIVED HOUSING: IN-DEPTH DATA FROM GERMANY

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Partially different to the Swedish contribution, this paper analyses the relationships between perceived housing, life course transitions and wellbeing among community-dwelling older adults in Germany. Based on 15 qualitative interviews with persons aged 60-75 years, the contribution focuses on the experience of interrelationships between different life course transitions and perceived housing, and how they contribute to wellbeing in later life. First findings indicate a concourse of different transitions around the retirement age (e.g. illnesses, changes in partnerships) and a temporal as well as causal relationship between the two transitions relocation and retirement (for example, relocation becomes possible only after retiring or people relocate with the retirement phase in mind). The entanglement of life course transitions, in turn, shapes the person-place-relationships and perceived housing in different ways, which will be exemplified and interpreted in the presentation. However, further research is needed to consider the effects of social inequalities in these processes.

Session 4065 (Symposium)

EMERGING BIOTECHNOLOGY MARKERS OF COGNITIVE IMPAIRMENT

Chair: Megan Huisingh-Scheetz
Discussant: Jennifer Schrack

The early detection of cognitive impairment is among the National Institute on Aging's (NIA) current research priorities. Sensor-based technologies have exploded in recent years allowing remote, continuous measurement of older adults' free-living activity. This highly granular data has stimulated exciting new research exploring how change in health can be detected remotely using novel "biotechnology" markers. Yet, this area of research is in its infancy as it relates to predicting cognitive function. This symposium will provide an overview of the sensor-cognition research landscape and will feature 5 new studies exploring the relationship between biotechnology markers and cognitive function, each with unique sensors, cognitive measures and samples. The first three presentations will report associations between accelerometry-based activity measures (chest or wrist devices) and cognitive function (assessed by diagnosis, a neurocognitive assessment, or microstructural changes on DTI) in the Baltimore Longitudinal Study on Aging, a large, NIA-funded epidemiologic dataset. The fourth presentation will report the significance of free-living hip accelerometry activity measures beyond clinically-available information in a random forest prediction model of 1-year change in Montreal Cognitive Assessment scores among urban, predominantly African-American older adults without moderate-severe dementia residing in the community. The final presentation will report associations between room-to-room transitions as detected by in-home, infrared motion sensors and mild cognitive impairment using data from a community-dwelling sample of older adults residing alone. This symposium will provide a substantial expansion of current knowledge in this research space and will be relevant to clinicians or researchers with an interest in sensor technology or dementia.

RELATIVE VIGOROUS-INTENSITY PHYSICAL ACTIVITY PREDICTS BRAIN MICROSTRUCTURAL CHANGES IN OLDER ADULTS

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Physical activity especially at moderate-to-vigorous intensity may preserve brain structure in old age. However, current findings are cross-sectional and rely on absolute intensity. This study aimed to examine whether relative or absolute vigorous-intensity physical activity (VPA) predicts brain microstructural changes. We analyzed 260 initially cognitively normal and well-functioning participants(age=70.5yrs) who had VPA data via ActiHeart and longitudinal brain microstructure by DTI(follow-up=3.7yrs). Associations of VPA with microstructural changes were examined using linear mixed-effects models, adjusted for demographics. Each SD higher relative VPA defined by heart rate reserve (i.e. 21 min/day) was significantly associated with less decline in memory-related microstructural integrity, including mean diffusivity of entorhinal cortex and parahippocampal gyrus and fractional anisotropy of uncinate fasciculus and cingulum-hippocampal part, and not executive/motor-related microstructure. Absolute VPA was not associated with microstructural markers. Among well-functioning older adults, participating in VPA defined by heart rate reserve may predict less brain microstructural decline in memory-related areas.

DAILY PHYSICAL ACTIVITY PATTERNS: A WINDOW ON COGNITIVE DECLINE IN THE BALTIMORE LONGITUDINAL STUDY OF AGING (BLSA)

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Gradual disengagement from essential daily physical activity (PA) necessary for independent living could signal present or emerging mild cognitive impairment (MCI) or Alzheimer's disease (AD). We used BLSA data to examine whether PA patterns including: 1) total activity counts/day, 2) minutes/day spent active, and 3) activity fragmentation (reciprocal of the mean active bout length) differs between participants with adjudicated normal cognition (n=498) and MCI/AD diagnoses (n=32). Linear models were used and adjusted for demographics, APOE-e4 status, morbidity, and gait speed. Compared to those with normal cognition, those with MCI/AD had 3.0% higher activity fragmentation (SE=1.1%, p=0.006) but similar mean total activity counts/