

indicated whether they had walked there. Various sources were used to obtain objective data which were used to calculate road network distance (in kilometres) from the village to the same destinations. On average, residents were aged 76.8 years (SD = 7.4) and 68% were female. Correlation coefficients for perceived and objective distances ranged from 0.147 to 0.532. For most destinations, perceived and objective distances were significantly shorter for residents who walked compared with others. For example, perceived (M = 2.24, SD = 1.22) and objective (M = 0.63, SD = 0.56) distance was shorter for residents who walked to local shops compared with perceived (M = 3.55, SD = 1.26) and objective (M = 1.17, SD = 0.77) distance for others. Objective distance to local shops, supermarkets, general services, health services, and public transport were negatively associated with walking and perceived distance mediated 11-53% of these relationships. This has implications for creating supportive built environments with proximate destinations and the interventions required to encourage more walking among seniors. **Keywords:** Walking; Physical Activity; Perceived and Objective Distance; Transport.

Cadence of older women walking at self-selected and music guided pace

Rowe, David A; Peacock, Leslie; Sutherland, Rona; Hewitt, Allan

University of Strathclyde, UK.

Introduction: Despite guidelines for moderate intensity health-enhancing physical activity, older adults' walking intensity is rarely monitored or regulated in walking interventions. Consequently, we determined self-selected walking cadence (steps/min) and intensity (METs) in older women and investigated their ability to match walking cadence to music tempo (beats/min). **Methods:** Older women (N = 30; age = 71±7 yr; height = 1.58±0.08 m; weight = 63.64±11.54 kg; BMI = 25.52±4.31 kg/m²) completed three 4-min treadmill walking trials at self-selected slow, moderate and fast speeds during which cadence and energy expenditure were measured. Three overground trials of at least 5 min were then completed using music tempo matched to the three treadmill cadences, played through a portable music player. Data were analyzed using one-sample t-tests, Cohen's d, and Bland-Altman plots. **Results:** Mean energy expenditure and cadence during the three treadmill trials were 3.52±0.88 METs and 112±12 steps/min (slow), 3.99±1.05 METs and 118±11 steps/min (moderate), and 4.58±1.02 METs and 124±12 steps/min (fast), which were all significantly (p < .005) and meaningfully (d = 0.58-2.09) higher than moderate intensity energy expenditure (3 METs) and cadence (100 steps/min; Tudor-Locke & Rowe, in press). During overground walking trials, most participants maintained a cadence within 3 steps/min of the prescribed music tempo, and the trivial (d = 0.08-0.11) mean differences were due mainly to one outlier walking considerably faster than her prescribed music tempo. **Conclusions:** During self-selected slow, moderate, and fast walking, older women walk at above-moderate intensity. At a variety of music tempi between 86 and 158 beats/min, older women are able to match walking cadence to music tempo. Music therefore has promise for regulating walking pace in older women, and they are able to maintain above-moderate intensity walking for a series of short continuous bouts accumulating to approximately 30 min. **Keywords:** Walking Cadence; Music Tempo; Self-Selected Pace.

Walking in the cement forest: A health enhancement and pedometer-determined ambulatory (HEPA) program in Hong Kong

Leung, Angela Y M¹; Tse, Michael¹; Cheung, Mike K T¹; Shum, Wai C²; Lancaster, Jeanette³; Lam, Cindy LK¹

¹The University of Hong Kong, China; ²Hong Kong Sheng Kung Hui Welfare Council, China; ³University of Virginia, United States.

Background: Due to lack of infrastructures in the public estates, many older adults were sedentary. A capacity building project named 'Health enhancement and pedometer-determined ambulatory (HEPA) program' was developed to assist home-dwelling older adults develop walking exercise habits in their own neighborhood and built up social support for regular physical activity. Objectives: This study aims to describe the intervention used to motivate the sedentary older adults and report the change of their walking capacity and body strength after the 10-week walking. **Method:** A pre-and-post intervention design was used. Number of steps taken per day, upper and lower body strength, lower body flexibility, and quality of life were measured. **Results:** A total of 1,408 older adults participated in various activities in the HEPA program. Among these, 205 completed the 10-week walking and all health assessments. After the 10-week walking, participants' average number of steps per day increased from 6591 (Week 1) to 8934 (Week 10) (increased by 36%). Their lower body strength (mean difference, m.d. = 1.71, $p < 0.001$), upper body strength (m.d. = 1.29, $p < 0.001$), aerobic fitness (m.d. = 20.74, $p < 0.001$) significantly increased after 10 weeks. Their quality of life in physical health (m.d. = 2.86, $p < 0.001$) and mental health (m.d. = 2.11, $p < 0.01$) was significantly improved. **Conclusion and Discussion:** The HEPA program successfully increased participants' walking level and improved their body strength and quality of life. Social network support was built and local environment was utilized to make walking possible and enjoyable. **Keywords:** Walking; Body Strength; Quality of Life; Social Network, Environment.

INSIGHTS IN FRAILTY ASSESSMENT

Invited lecture: From muscle activity to physical performance—Insights in frailty assessment

Jones, Gareth¹; Theou, Olga²; Roland, Kaitlyn¹; Jakobi, Jennifer¹

¹University of British Columbia, Canada; ²Delhousie University, Canada.

Frailty is a geriatric syndrome that is often easily recognized but difficult to diagnose. Characteristics of frailty include a mix of physiological, psychological, social, and environmental factors that initiate a state of vulnerability leading to eventual adverse health outcomes. These characteristics are uniquely expressed within each individual depending upon their available assets (i.e. health, muscle strength, family support) and deficits (i.e. neurological disease, disability) making it a challenging syndrome to diagnose. Clinicians and researchers consider frailty as a spectrum of phenotypes (non-frail, pre-frail, and frail) or indexed by an accumulation of age-associated symptoms. Frailty identification is often missed in its early stages (prefrailty) when interventions could be most productive. However, to-date there is no agreement on how to screen for frailty. Recent evidence from our laboratory has demonstrated that daily muscle activity (electromyography) recorded over 8-hours of a typical day differs between males and females, young and old, and might be used as a tool to identify changes in frailty earlier than current assessment means. In addition, the evaluation of physical activity using a combination of measurements (accelerometers, global positioning systems, and questionnaire) provides important information about when older adults transition across frailty thresholds. Older adults living with neurological disorders such as Parkinson's disease (PD) provide a unique model to explore frailty, especially females who are at greatest risk of becoming frail following PD diagnosis. This symposium provides