Session 9420 (Poster)

PHYSICAL ACTIVITY AND EXERCISE

ACTIGRAPHY MEASURED PHYSICAL ACTIVITY ON COGNITIVE FUNCTIONING IN OLDER ADULTS
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Physical activity may preserve cognitive functioning in older adults. This study examined associations between objectively measured physical activity and cognitive functioning. We recruited participants (Mage = 75.38 years, SD = 5.99) with (N=26) and without (N=181) cognitive impairment from the University of Kansas Alzheimer’s Disease Center (KU-ADC). We collected cognitive data representing verbal memory, attention, and executive function. Accelerometers (Actigraph GT9X) were used to measure physical activity 24 hours a day for 7 days in a free-living environment. Physical activity was categorized as moderate to vigorous physical activity (MVPA) based on the Freedson (2011) Adult Vector Magnitude cut points. The association between cognitive functioning and total MVPA was evaluated by using multiple regression. We used factor analysis to create three composite scores (verbal memory, attention, executive function) from 11 individual cognitive tests. Compared to verbal memory and attention, results indicate that total MVPA was more strongly associated with executive function (β = 0.001, p = .024). These findings are consistent with the literature suggesting that executive function in older adults may benefit from physical activity. Future research should investigate the physiological mechanisms by which MVPA benefits executive function in contrast to types of activity that might benefit verbal memory and attention.

AGE AND GENDER DIFFERENCES IN LONG-TERM EXERCISE BEHAVIOR FOR OLDER ADULTS WITH HEART DISEASE
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Exercise decreases mortality and hospital admissions. Exercise adherence is challenging, and little is known about exercise adherence especially in older adults with heart disease. To gain an understanding of long-term exercise behaviors in older adults we conducted a cross-sectional study of individuals diagnosed between 2016-2020 with myocardial infarction (MI)/angina. Emails were sent in 2020 to recruit participants. Exercise adherence was measured using the Exercise Adherence Rating Scale (EARS), Godin’s Leisure-Time Activity Scale (GLTEQ) for exercise intensity, and self-report for impact of COVID-19. Descriptive statistics and t-tests were used to analyze data. Eight-hundred and seven females ≥65yo demonstrated higher exercise adherence scores compared with males ≥65yo (1.66 ± 1.1 vs. 1.30 ± 21.7; t = -2.59, p=.010). Conversely, males scored higher in exercise intensity (34.4 ± 24.7 vs. 22.6 ± 21.7; t = 3.84, p=.000). Gender related exercise adherence and exercise intensity did not differ significantly in <65yo (p=.278 & p=.282, respectively). Exercise frequency decreased in both age groups after COVID-19 Pandemic started, however the decrease was significant only in older adults (p=.014) indicating they were at greater risk for exercise problems when faced with environmental barriers. Additional research is recommended as to the impact of environmental factors on exercise adherence in older adults and potential interventions.

BIOMECHANISM AND EXERCISE EFFECT OF FITNESS WALKING USING TWIN WALKING STICKS
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In Japan, walking poles with pairs of sticks developed exclusively for fitness walking have been designed. A new concept of walking style (WS) has been conceived using these walking sticks to “effectively” walk around the city, comprehensive sports parks, or at rehabilitation hospitals. Stick manufacturers are promoting its health benefits; however, evidence supporting these claims is lacking. Hence, this study aimed to measure the influence of walking sticks and evaluate the exercise effect based on functional physical fitness related to WS characteristics. The participants were 12 WS instructors. They engaged in WS at a comfortable speed after walking normally at the same speed (WN) for ~5 m (seven times), followed by WS again. The walking speed, step length, stride width, walk ratio, one-leg support time, and trajectory of the center of gravity (CG) (in the horizontal and vertical directions of one walking cycle) calculated from the whole-body skeleton model were analyzed. The gait of WS increased the step length, step width, and walking ratio as compared with that of WN (p<0.05). WS likely reduce cadence and one-leg support time (p<0.05). The CG locus in the left-right direction showed no significant differences between WS and WN. The maximum value of the CG locus in the vertical direction was high in WS (p<0.05). WS can be used as a navigation training tool that improves a walker’s exercise efficiency and left-right leg coordination, thereby improving walking posture. This may help reduce the anxiety due to injuries and pain that may occur while walking.