

CONCLUSIONS: SUN demonstrates the efficacy to improve SB and physical function and may be a promising strategy to maintain function for activities of daily living to prevent loss of independence in older adults.

2700 Board #161 May 29 10:30 AM - 12:00 PM

Association Between Air Pollution And Daytime Sleep Duration: A Follow-up Study Of Chinese Older Adults In Beijing

Miao Yu¹, Hongjun Yu², Weimo Zhu, FACSM³. ¹Renmin University of China Libraries, Beijing, China. ²Tsinghua University, Beijing, China. ³University of Illinois at Urbana-Champaign, Urbana, IL. (Sponsor: weimo zhu, FACSM)

Email: yumiao@ruc.edu.cn

(No relationships reported)

PURPOSE: This study was to estimate the association between air pollution and daytime sleep duration for older adults from the 5-year follow-up Chinese older adult surveys during 2011-2016 in Beijing, China.

METHODS: We conducted follow-up health surveys on 5503 (2080 males & 3423 females; Age 67.6 ± 8.2 yr., Height = 162.2 ± 7.5 cm, Weight = 63.3 ± 9.8 kg, BMI = 24.1 ± 43.2 in 2011) older adults enrolled at Beijing from 2011 to 2016, once per year. Sleep duration was measured using the Pittsburgh Sleep Quality Index (CPSQI), which has been validated in China to measure sleep duration. Corresponding levels of average hourly PM2.5 (µg/m³) on the survey days were gathered from data provided by the mission China air quality monitoring program run by the US Department of State in Beijing. The data were analyzed using the linear individual fixed-effect regressions.

RESULTS: The average time spent in daytime sleep for older adults was 0.6 ± 0.5 hours/day. The mean PM2.5 was 123.9 ± 52.5 (µg/m³). Daytime sleep was positively associated with air pollution for older adults. Overall, an one standard deviation (SD) increase in air pollution concentration in PM2.5 (56.6µg/m³) was associated with an increase in daytime sleep hours by 1.49 (95% confidence interval [CI] = 1.17, 1.81), with the corresponding increases in females and males were 0.91 (95% [CI] = 0.33, 1.49) and 1.82 (95% [CI] = 1.34, 2.30) hours, respectively.

CONCLUSIONS: Increased air pollution seems led more daytime sleep among older Chinese adults and the impact on males was more significant than females.

2701 Board #162 May 29 10:30 AM - 12:00 PM

Concurrent Training Reduces Depressive Symptoms In Mexican Female Older Adults

Ermilo Canton Martínez¹, Iván Rentería¹, José Moncada Jimenez², Patricia Concepción García Suárez¹, Luis Mario Gómez Miranda³, José Antonio De Paz Fernandez⁴, Alberto Jiménez Maldonado¹. ¹Universidad Autónoma de Baja California, Ensenada, Baja California, Mexico. ²Universidad de Costa Rica, San José, Costa Rica. ³Universidad Autónoma de Baja California, Tijuana, Baja California, Mexico. ⁴Universidad de León, León, Spain.

Email: ecanton@uabc.edu.mx

(No relationships reported)

Nearly 35% of Mexican older adults (OA) are diagnosed with mild depression. Exercise has shown positive effects on reducing depression symptoms in OA. The correlation between physical function, body composition and mild depression risk in healthy OA has been neglected in Mexico.

PURPOSE: To determine the effect of a concurrent-training exercise program (CTEP) on mild depression in Mexican female OA. A secondary aim was to determine the correlation between physical function, body composition and depressive symptoms in OA following a CTEP.

METHODS: Twenty-one females (age= 64.0 ± 5.38 yr., weight= 72.0 ± 12.6 kg, BMI= 29.0 ± 4.7 kg/m²) participated in the study. Before (Pre) and after (Post) the CTEP, participants were measured on depression by the *Hamilton Depression Rating Scale* (HAM-D), body fat, muscle mass [MM]), physical function by the *Senior Fitness Test*, and aerobic capacity by the 6-min walking test (6MWT). The CTEP consisted in two days of aerobic exercise and one day of resistance training performed for 50-min at moderate intensity (12 to 14 on Borg's RPE scale) for 12-weeks. Paired t-tests were computed to compare pre- to post-CTEP effects, and Spearman correlations studied the association between body composition, physical function and depression scores using the GraphPad PRISM 5.0 software.

RESULTS: The CTEP reduced HAM-D scores (Pre= 15.7 ± 4.5 vs. Post= 10.3 ± 5.3 pts., p=0.0001), improved upper-body strength (Pre= 15.1 ± 2.6 vs. Post= 18.9 ± 3.0 reps, p=0.0001), lower-body strength (Pre= 12.0 ± 2.4 vs. Post= 14.5 ± 2.9 reps, p=0.0001), agility (Pre= 6.5 ± 0.9 vs. Post= 6.0 ± 0.9 s, p=0.0001), and MM (Pre= 21.8 ± 2.9 vs. Post= 22.26 ± 3.1 kg, p=0.002). No significant changes were found in aerobic capacity (Pre= 587.9 ± 164.4 vs. Post= 619.6 ± 144.9 m, p=0.06) and body fat (Pre= 31.0 ± 8.8 vs. Post= 30.8 ± 9.1%, p > 0.05). The HAM-D scores were inversely correlated with upper-body strength (r= -0.53, p=0.002) and lower-body strength (r= -0.64, p= 0.002), and directly correlated to agility (r= 0.50, p= 0.0004).

CONCLUSIONS: A CTEP reduced depressive symptoms in Mexican female OA in spite of lack of changes in body composition. The increased physical function relates to a reduction in depressive symptoms; thus, highlighting the importance of improving functionality in OA.

2702 Board #163 May 29 10:30 AM - 12:00 PM

Associations Of Physical Activity And Sedentary Behavior With The Onset Of Long-term Care Need In Community-dwelling Independent Japanese Older Adults: The Tsuru Study

Shinichiro Sato¹, Takuya Yamada², Mutsumi Nakamura³, Yuta Nemoto⁴, Noriko Takeda⁵, Kazushi Maruo⁶, Yoshiharu Fukuda², Susumu S. Sawada, FACSM⁴, Yoshinori Kitabatake⁷, Takashi Arao⁸. ¹University of Human Arts and Sciences, Saitama, Japan. ²Teikyo University, Tokyo, Japan. ³Tohto University, Chiba, Japan. ⁴Waseda University, Saitama, Japan. ⁵Kogakuin University, Tokyo, Japan. ⁶University of Tsukuba, Ibaraki, Japan. ⁷Saitama Prefectural University, Saitama, Japan. ⁸Meiji Yasuda Life Foundation of Health and Welfare, Tokyo, Japan.

(No relationships reported)

Limited data are available for the examination of the associations of physical activity (PA) and sedentary behavior (SB) with the onset of long-term care need (OLCN) in older adults.

PURPOSE: The purpose of this study is to investigate the independent and joint associations of moderate PA (MPA) and SB on the OLCN among Japanese elderly in the local municipality.

METHODS: A cohort of 3937 Japanese elderly men [median (IQR) age 74 (65–99) years] and 2048 women [median (IQR) age 74 (65–99) years] without certification of long-term care need have reported on PA and SB in 2016. The participants were divided into three categories (0 min/week: MPA-none, 1-299 min/week; MPA-M₁, ≥ 300 min/week; MPA-M₂) based on MPA and two groups based on median (200min/week) of SB (SB-M₁, SB-M₂). The OLCN was defined as the time of the certification of long-term care need by the Certification Committee of Needed Long-Term Care in the municipality. The information of the OLCN during follow-up from 2016 to 2018 was obtained from the person in charge of Tsuru city. Hazard ratios (HR) and 95% confidence intervals (95% CI) for the OLCN were obtained using proportional hazard models while adjusting for sex, age, educational level, marital status, activities of daily living, and history of current illness.

RESULTS: During the 2-year follow-up period, 517 participants obtained certification of needed long-term care. With the independent effects of MPA and SB, using the MPA-none as reference, HRs and 95% CIs for MPA-M₁ and MPA-M₂ were 0.67 (0.51–0.86) and 0.48 (0.35–0.66), respectively (P for trend < 0.001) and using lower SB (SB-M₁) as reference, HR and 95% CI for higher SB (SB-M₂) was 0.74 (0.58–0.94). With the joint effects of MPA and SB, using MPA-none & SB-M₁ as reference, HRs and 95% CIs for MPA-none & SB-M₂, MPA-M₁ & SB-M₁, MPA-M₁ & SB-M₂, MPA-M₂ & SB-M₁, and MPA-M₂ & SB-M₂ were 0.62 (0.44–0.87), 0.58 (0.42–0.82), 0.50 (0.34–0.74), 0.39 (0.26–0.60), and 0.39 (0.25–0.62), respectively.

CONCLUSIONS: These results suggest that MPA and SB might be independent factors for the onset of long-term care need and that these factors might have a strong joint effect on the onset.