

healthy, older adults. **Methods:** 60 participants (mean age: 75.5 years / 33 female) were included in the study. Participants were randomly allocated to a 12-week individualised aerobic exercise program intervention (n = 30) or a 12 week waiting control group. Assessment included psychometric testing (memory, attention, executive function), assessment of movement-related parameters and a cardiopulmonary exercise test (CPET). ^1H MRSI was applied to measure metabolic profiles. Furthermore, structural MRI was used to quantify grey matter volume. Participants successfully passing all assessments were randomised to either receive intervention during the subsequent 12 weeks (intervention group) or after a waiting period of 12 weeks (control group). Twelve weeks after allocation, all participants were reassessed, using identical methods. **Results:** Multivariate repeated measures ANOVAs did not reveal significant effects of the aerobic exercise intervention on cognitive outcomes ($p > 0.5$), nor on grey matter volumes ($p > 0.5$). With regard to the metabolic profiles, there was a trend towards changes induced by active training. The most prominent effect was an increase in NAA/tCho for the intervention group (interaction of group x time: $p = 0.037$), whereas no changes were observed for the control group (interaction of group x time $p = 0.637$). **Conclusions:** Aerobic exercise seems to induce metabolic changes in the brain of older adults. The increase in NAA/tCho following regular aerobic exercise was not associated with improved cognitive function. A possible explanation could be the relatively small sample size (n = 30 in each group), resulting in a lack of statistical power to detect subtle effects of aerobic exercise on cognition.

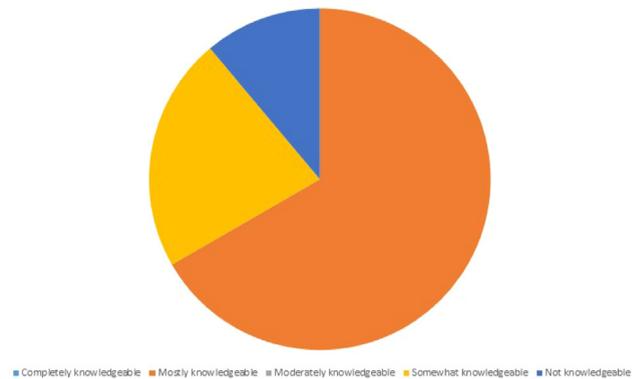
P3-396

IMPROVING TIMELY DIAGNOSIS AND MANAGEMENT OF DEMENTIA IN THE HEALTH CARE SETTING

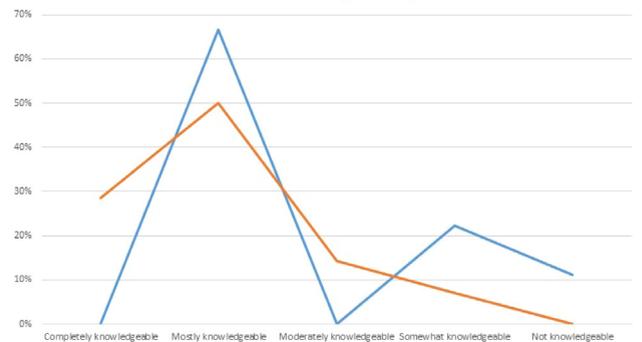
Cornelya D. Dorbin, **Monica W. Parker**, Emory University, Atlanta, GA, USA. Contact e-mail: monica.willis.willis-parker@emory.edu

Background: Timely evaluation and management of older adult's cognitive function in the health care setting has important practice implications. Reports indicate that the population of adults 65 and older will increase dramatically in the next 15 years. Currently, Georgia has nearly 130,000 adults age 65 and older that are diagnosed with Alzheimer's disease (Alzheimer's Facts and Figures 2015). More than 14 percent –one in seven –of those aged 60 and over report that they are experiencing confusion or memory loss that is happening more often or is getting worse (BRFSS Cognitive Impairment Module 2015). **Methods:** We conducted one continuing medical education (CME) training that included lectures and panel discussions with 34 participants recruited from the community, local hospitals, academic institutions and the Georgia Academy of Family Physicians to increase adherence to the guidelines established in the Medicare Annual Wellness Visit. We used the Moore Model of Outcomes Measurements^[1] in pre- and post surveys to evaluate the CMEs and to assess changes in knowledge and intent to implement a strategy. Correct responses increased significantly from pre- to post-CME. **Results:** Results from the live CME training indicate a 31% increase in knowledge with screening guidelines and practices (Figure 1). This increase in knowledge may lead to clinician's adherence to the Medicare Annual Wellness Visit required elements and their patient's completing cognitive assessments. **Conclusions:** Studies show that more than 40% of physicians were unaware of cognitive dysfunction in their patients^[2]. It is imperative that we bolster physician training to increase their knowledge and adherence to screening guidelines to improve the diagnosis and treatment of cognitive impairment. CME participants

Dementia Knowledge and Screening



Evaluation of Patient's Cognitive Dysfunction



indicated a 38% increase in knowledge of risk factors and diagnostic tests associated with cognitive dysfunction (Figure 2). While the U.S. Preventive Services Task Force (USPSTF) concludes that the current evidence is insufficient to assess the balance of benefits and harms of screening for cognitive impairment in older adults, there are important reasons to identify early cognitive impairment. Patient and family members advise they can better plan for future problems when cognitive impairment is diagnosed early^[3].

P3-397

MILD COGNITIVE IMPAIRMENT: THE EFFECT OF KIRTAN KRIYA MEDITATION ON PSYCHOLOGICAL AND COGNITIVE STATUS

MaGloria Borrás-Boneu^{1,2,3}, Toni Can^{1,2}, Judit Castella², Silvia Ramos⁴, Nuria Pimpinela⁴, **Dharma Singh Khalsa**^{3,5}, ¹GRDMedic Health Inst, Barcelona, Spain; ²AEKY, Barcelona, Spain; ³Alzheimer's Research and Prevention Foundation, Tucson, AZ, USA; ⁴AVAN, Terrassa, Spain; ⁵University of New Mexico School of Medicine, Albuquerque, NM, USA. Contact e-mail: drdharmask@aol.com

Background: Mild cognitive impairment (MCI) involves a high risk of developing Alzheimer's dementia. For this reason, the early therapeutic approach to cognitive impairment is crucial to prevent the progression of the disease. Meditation, a non-pharma Mind-Body approach, in conjunction with other modalities such as diet, exercise and socialization, presents us with an opportunity to impact dementia risk factors. **Objective:** To evaluate the cognitive function and psychological status after the Kirtan Kriya Meditation program (KKM) and Kundalini Yoga (KY), on our population diagnosed with MCI while following their standard memory training program. **Methods:** Fifteen adults (10 women and 5 men with a mean age of

72.8±7.8 years) with memory problems were included. Everybody followed the cognitive stimulation program of memory training from AVAN center, during this study of eight weeks. None of them had previous experience with meditation or yoga. All participants underwent neurological and psychological evaluation before and after the 8 week intervention. Seven patients practiced KKM for 12 minutes daily, plus a weekly KY. The remaining eight subjects served as the control group. **Results:** The study group had an improvement in their depression scores and less anxiety compared to the memory training group alone (control), as shown by the Goldberg test. KKM group also expressed a significant improvement in their overall mood state, measured by the PEA test, for tension, hostility and confusion. The KKM group showed higher memory scores for their total free memory value as measured by the FCRST test, while the short form of Health Survey (SF-36) reflected a recovery in their social function. **Conclusions:** In subjects with MCI, our findings of enhanced cognition and psychological well-being suggest important improvements in quality of life, cognition, and well-being. Further studies are needed with a larger sample size to reinforce the efficacy of KKM in this population.

P3-398

PHYSICAL ACTIVITY, POTENTIAL CONFOUNDERS AND COGNITIVE DECLINE IN THE ELDERLY

Min-Kuang Tsai¹, Jen-Hau Chen², Chien-Cheng Jung¹, Jeng-Min Chiou³, Ta-Fu Chen⁴, Ya-Fang Chen⁵, Sung-Chun Tang⁴, Shin-Joe Yeh⁴, Ming-Jang Chiu⁴, Yen-Ching Chen¹, ¹*Institute of Epidemiology and Preventive Medicine, College of Public Health, National Taiwan University, Taipei, Taiwan;* ²*Department of Geriatrics and Gerontology, National Taiwan University Hospital, Taipei, Taiwan;* ³*Institute of Statistical Science, Academia Sinica, Taipei, Taiwan;* ⁴*Department of Neurology, National Taiwan University Hospital, Taipei, Taiwan;* ⁵*Department of Medical Imaging, National Taiwan University Hospital, Taipei, Taiwan.*
Contact e-mail: d04849014@ntu.edu.tw

Background: Physical activity has been related to lower risk of dementia, but the relationship of physical activity and the decline of global and domain-specific cognitive function remains unclear. **Methods:** This is a follow-up study. A total of 605 elders aged 65 years or older were recruited from health checkup program at National Taiwan University Hospital at baseline (2011-2013), and 483 of them had follow-up data (2013-2015). Physical activity was assessed by self-report International Physical Activity Questionnaire, which includes walking, moderate and vigorous activities. Global cognition was assessed by Montreal Cognitive Assessment. Domain-specific cognition was evaluated by Wechsler Memory Scale-Third Edition (logic memory and attention), Trail Making Test and verbal fluency test (executive function). The outcome of this study was change of global or domain-specific cognition from baseline to follow-up. Physical function was assessed by 8-foot gait speed test. Multivariable logistic regression models were used to explore the association between physical activity and cognitive decline over 2-year follow up. Stratification analysis was performed by physical function, sex, age groups, apolipoprotein E (APOE) e4 status for the association above. **Results:** Elders walked 150 mins/week or above (i.e., >495 MET-min, guideline of World Health Organization) showed protective effect on decline of global cognition (AOR=0.66, $P_{trend\ Q1-Q5}$ =0.045) and logic memory (thematic I: AOR=0.65, thematic II: AOR=0.55, recall II: AOR=0.62) than those not met the guideline. Associations for global cognition remained in elders with better physical function (gait speed at least 0.6 m/s : AOR=0.63), women (AOR=0.53), the young old (age 65-74: AOR=0.60), APOE e4 carriers (AOR=0.22), and elders with

lower education level (less than 6 years: AOR=0.10). For the decline of logic memory-thematic II, significant associations remained in elders with better physical function (AOR=0.63), women (AOR=0.51), and the young old (AOR=0.54). No association was observed for attention and executive domains. Physical function significantly modifies the association between regular walk on the change of logic memory-thematic I ($P_{interaction}$ =0.008). **Conclusions:** Regular walk protected against the decline of global cognition and memory domain. Significant associations between regular walk and cognitive decline were observed in some subgroups, which provide useful information for dementia prevention and reducing public health burden.

P3-399

SPIRITUAL WELL-BEING AS A PROTECTIVE FACTOR FOR THE EFFECT OF MEDIAL TEMPORAL LOBE ATROPHY ON MEMORY: DATA FROM CZECH BRAIN AGING STUDY

Rafal Marciniak^{1,2}, Katerina Sheardova^{1,2}, Daniel Hudecek^{1,2}, Martin Vyhnalek^{1,3}, Zuzana Nedelska^{1,3}, Jakob Hort^{1,3}, ¹*International Clinical Research Center, St. Anne's University Hospital Brno, Brno, Czech Republic;* ²*Department of Neurology, St. Anne's University Hospital Brno, Brno, Czech Republic;* ³*Memory Clinic, Department of Neurology 2nd Faculty of Medicine, Charles University in Prague and Motol University Hospital, Prague, Czech Republic.* Contact e-mail: rafal.marciniak@gmail.com

Background: Lifestyle factors such as physical exercise or spirituality/meditation have been identified as neuroprotective mediators in cognitive ageing. The relationship between spirituality (distinct concept from religiosity) and health has received increasing attention in recent decades and consensual concept of spiritual well-being (SWB) was identified in order to link the concepts of spirituality and health. Current reviews on spirituality scales for health-research recommend choosing a multiple domain measure, including behavioral elements of spirituality (Connectedness with oneself, others and with nature) as well as transcendent elements. We use data from the Czech Brain Aging study (CBAS) to test hypothesis that SWB could be one of the potentially protective factors on cognition irrespectively of hippocampal volumes. **Methods:** Data from Brno CBAS center are presented. 125 non-demented subjects 55+ (66 with subjective cognitive complaints and 59 with mild cognitive impairment) underwent UDS neuropsychological examination, 1.5 T brain MRI, APOE genotyping and filled in questionnaires about cognitive complaints, and other lifestyle factors. SWB scale (SHALOM) developed by Gomez and Fischer (2003) was used for SWB assessment. Medial Temporal Lobe atrophy (MTA) was measured by Sheltens MTA-score. Multiple linear regression with interaction between spirituality and brain atrophy predicting memory performance was made. We controlled for risk factors and intervening variables: age, education, depression, anxiety, high blood pressure, diabetes. **Results:** The adverse effect of MTA on memory was less pronounced when combined with greater transcendental spirituality (the interaction between atrophy and spirituality approached statistical significance and explained additional 2% of variance, $p = 0.07$). We have not detected effect of behavioral elements of spirituality. **Conclusions:** The results suggest a protective effect of transcendental spirituality on memory performance in context of MTA. The transcendental spirituality usually includes practices such as meditation/prayer which are considered to have neuroprotective effect via multiple mechanisms. Spirituality in the context of our results could be understood as a source of