ranged 0-18), our team determined that meta-analyzing the results would be inappropriate. Despite heterogeneity in study characteristics, the majority (85.2%) reported that systolic BPV (sBPV) was negatively associated with cognition; specifically, higher sBPV was associated with cognitive impairment (N=9), cognitive decline (N=6), and/or risk of dementia (N=5). Four studies also revealed higher sBPV in individuals with dementia compared to controls. Three studies reported no association, while one reported a positive significant association between BPV and cognition. Results were similar for diastolic BPV. Despite considerable heterogeneity in study characteristics, greater variability in visit-to-visit BP appears to be consistently associated with adverse cognitive outcomes.

MANIFESTATIONS OF AGING IN VIRTUAL REALITY IMPLEMENTATION OF ROD AND FRAME TEST

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Senior adults' reliance on the visual frame of reference for spatial orientation is a manifestation of an age-related shift in cognitive style from field independence to field dependence. We implemented a virtual reality rod and frame test (VR-RFT) to assess visual field dependence (VFD) in n=39 young adults (20-30 years old) and n=43 seniors (60 years old and above). The subjects were asked to determine subjective visual vertical (SVV) for 19 angles of frame tilt (running from -45 degrees to 45 degrees in steps of 5 degrees). The strong VFD of seniors was manifested not only by the increased error in the determination of SVV (SVVE) but also in its distribution. For small and large frame tilt angles, seniors' SVVE skewness and kurtosis were greater than those of young adults. The SVVE median dependence on frame tilt may be accounted for with a phenomenological model whose two parameters describe the strengths of primary (P) and secondary (S) visual attractors which subjects use to infer SVV: the edges of the frame and its imaginary diagonals. For young adults, these parameters were: PY=14.91 and SY=12.51. For seniors, we observed an over 50% increase in the strength of the primary attractor PS=26.31 while the strength of the secondary one was only weakly affected by aging: SS=13.74. We demonstrate that the asymmetry between the strength of attractors significantly contributes to SVVE made by seniors at large frame tilts. We hypothesize that a variant VR-RFT may be used in rehabilitation to reduce excessive VFD.

PREDICTING QUALITY OF LIFE WITH PHYSICAL AND COGNITIVE FUNCTIONING AMONG OLDER ADULTS WITH COGNITIVE IMPAIRMENT

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Purpose: Older adults experience abnormal declines in physical and cognitive functioning that increase their risk of dependence, subsequently quality of life. This study aims to explore the relationship between physical and cognitive functioning, and to predict quality of life among older adults with mild cognitive impairment. Methods: Survey was conducted with older adults registered at dementia support centers. Seventy-four older adults signed the consent form and participated in the study. physical functioning consisted of grip strength, balance (OLS), Timed up and go, and activities of daily living. Cognitive functioning was measured by K-MOCA. SF-12 was used to assess quality of life. Results: The participants was 76 years old on average, more women (75.4%), and mostly elementary or less education level (60.9%). Physical functioning explained 22.1% of variance in cognitive functioning after controlling for age and gender (F change=4.789, p=.002). Balance (OLS: t=2.304, p=.024) and grip strength (t=2.207, p=.031) was significant predictors. Physical and cognitive functioning explained 36.7% of variance in quality of life after controlling for age and gender (F =5.466, p<.001). Indicators of physical functioning, TUG (t=-3.252) and grip strength (t=-2.633), were the most significant predictors of quality of life, while cognitive function explained additional 3.1% of variance in quality of life (F=3.216, p=.078). Conclusion: Physical functioning were significant predictors of cognitive functioning, subsequently to quality of life among older adults with cognitive impairment. Health promoting strategies should focus on improving physical functioning of this population to maintain or prevent cognitive declining, and to promote quality of life.

RELATIONSHIP BETWEEN TYPE 2 DIABETES CONTROL AND COGNITION IN OLDER ADULTS: FINDINGS FROM NHANES

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Cognitive health has emerged as an important public health concern for America's aging population. Type 2 Diabetes (T2D) may be associated with an exacerbated decline in cognitive performance. This study aimed to examine the relationship between T2D control and cognitive performance in older adults (≥60 years) using the 2013-2014 National Health and Nutrition Examination Surveys. Participants who completed the following cognitive assessments were included: 1) Consortium to Establish a Registry for Alzheimer's Disease Word List (CERAD-WL), 2) Animal Fluency (AF), 3) Digit Symbol Substitution Test (DSST) (higher scores associated with better cognition). Participants were stratified by four groups: no T2D (N=557), treated/controlled T2D (controlled; N=41), treated/uncontrolled T2D (uncontrolled; N=120), untreated T2D (N=86), based on self-reported T2D treatment, fasting plasma glucose, and hemoglobin A1c. Logistic regression was used to examine the relationship between T2D control and cognition. We observed that those with uncontrolled and untreated T2D each had ~15% lower DSST than those with no T2D (P<0.01). CERAD-WL and AF were similar across all groups. Unadjusted analyses showed that individuals with 1) lower CERAD-WL were more likely to have controlled and untreated T2D, 2) lower AF were more likely to have controlled

and uncontrolled T2D, and 3) lower DSST were more likely to have uncontrolled and untreated T2D (P's<0.05). After adjusting for significant demographics and cardiovascular risk factors, only having uncontrolled T2D was associated with lower DSST (β=-3.164, P=0.04). These data indicate the need for longitudinal studies to further explore dynamic relationship and causal pathway between T2D control and cognitive impairment.

RISK FACTORS FOR DEMENTIA ONSET IN OLDER ADULTS WITH METASTATIC RENAL CELL CARCINOMA

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Renal dysfunction is a driver of dementia. It is also associated with renal cell carcinoma, possibly the result of the tumor itself or from cancer treatment. This study evaluates metastatic renal cell carcinoma (mRCC) as a risk factor for developing mild cognitive impairment or dementia (MCI/D) as well as the impact of RCC-directed therapies on the development of MCI/D. We identified all patients diagnosed with mRCC in SEER-Medicare from 2007-2015. The main outcome was incident MCI/D within one year of mRCC diagnosis or cohort entry. Exclusion criteria included age <65 at mRCC diagnosis and diagnosis of MCI/D within preceding year of mRCC diagnosis. Patients with mRCC (n=2,533) were matched to non-cancer controls (n=7,027) on age, sex, race, comorbidities and year. Cox proportional hazards regression showed that having mRCC (HR 8.52, 95% MCI/D 6.49-11.18, p<0.001) and being older (HR 1.05 for 1-year age increase, 95% MCI/D 1.03-1.07, p<0.001) were predictive of developing MCI/D. A second Cox proportional hazards regression of only patients with mRCC revealed that neither those initiating treatment with oral anticancer agents (OAAs) nor those who underwent nephrectomy were more likely to develop MCI/D. Black patients had a higher risk of dementia compared to white patients (HR 1.92, 95% MCI/D 1.02-3.59, p=0.047). In conclusion, patients with mRCC were more likely to develop MCI/D than those without mRCC. The medical and surgical therapies evaluated were not associated with increased incidence of MCI/D. The increased incidence of MCI/D in older adults with mRCC may be the result of the pathology itself.

SOCIAL DISENGAGEMENT AND COGNITIVE FUNCTION: DOES THE ASSOCIATION VARY BY GENDER?

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Although social disengagement is considered to be a predictor of cognitive decline, and increase risk of Alzheimer's and related dementias, little is known regarding the gender-specific association between social disengagement and cognition among Korean middle-aged and older adults. Korea's Confucianism-based gender roles provide unique contexts to examine gender differences in the influence of social disengagement on cognition. This study investigated the association between social disengagement and cognitive function in a nationally representative sample of Koreans aged 45 years or older (N = 5,196 women and 2,707 men), using data from the Korean Longitudinal Study of Aging (2008-2018). Results from the generalized estimating equation model showed that compared to consistent social engagement, consistent non-engagement was significantly associated with lower cognitive function among both genders. Transitioning from social engagement to non-engagement was significant for males only. Of various types of social activities (religious, senior center, sport, reunion, voluntary, political), consistent non-engagement in a senior center was most associated with lower cognitive function among both genders, while consistent non-engagement in religious activities was significant for females only. While household arrangements were not associated with cognition in men, widowed women had increased risk of cognitive decline than married women, as did women living in households of three or more people. Depression was a predictor of cognitive decline among males only. In this gender-specific study, we found that consistent participation in social activities, especially via membership in a senior community center, is beneficial in preventing cognitive decline among both genders.

SUBCLINICAL CARDIAC DYSFUNCTION AND COGNITIVE FUNCTION: A SYSTEMATIC REVIEW

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Background: Cardiovascular disease, and more recently, subclinical cardiac dysfunction have both been implicated as important risk factors for cognitive decline. Several measures have been used to detect subclinical cardiac dysfunction, with global longitudinal strain (GLS) emerging as an important and more sensitive indicator than traditional measures. Yet, the association of GLS with cognitive function remains relatively unexplored. Objective: The aim of this review is to systematically summarize the literature exploring the association between GLS and cognitive function. Methods: We conducted a systematic review of the literature following PRISMA guidelines using the following databases: PubMed, OVID Medline, Embase, Web of Science, and CINAHL. Inclusion criteria were observational studies published in English, measuring GLS and assessing cognitive function through neuropsychiatric tests or brain imaging. Quality assessment was done using the Newcastle Ottawa Scale. Results: The initial search revealed 394 studies, of which three met inclusion criteria and were included for final review. The three studies included were cross-sectional and of high quality. They all reported that lower GLS scores were associated? with worse cognitive function and more