EXPLORE THE ROLE OF ABETA IN AXONAL TRAFFICKING DEFICITS INDUCED BY ALPHA SYNucleIN IN PARKINSON DISEASE MOUSE MODEL
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Alpha synuclein (ASYN) is a neuronal protein that is observed in significant amounts in the brain and is encoded for by the SNCA gene, it functions as a regulator for the trafficking of synaptic vesicles. It has been noted that the buildup of alpha synuclein has been found in the form of Lewy bodies in studies involving patients with Parkinson’s diseases (PD). Gathering an understanding for the manner in which alpha synuclein affects the synaptic structure and the movement of axonal trafficking will help further our understanding towards the formation of Lewy bodies. Experimenting with the way in which ASYN affected the intervention of Abeta was important, to see the toxicity of Abeta in axonal trafficking. The PD and SynKO mouse models treated with Abeta both showed an effect on the anterograde moving speed of both the PD and SynKO neurons. Synaptic formation was examined, and it was found that ASYN had a large negative influence on the synapse formation in PD neurons. This was due to the significantly reduced colocalization that was found in the treated neurons. It was confirmed that ASYN caused neuronal atrophy through the over expression of GFP-ASYNWt wild type or the GFP-ASYNAs33T. Comprehending ASYN effect on the axonal trafficking and the synaptic structure of PD neurons can help understand the mechanism that may be present which possibly stimulates Alzheimer’s Disease in PD patients.

EXPLORING THE ECOnOLOGY OF THIRD AGE INFORMAL LANGUAGE LEARNER GROUPS
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This research explores the factors involved in the emergence of an independently organized Third Age informal language learner group in a community centre in Japan. The methodology applies PPCT (Process-Person-Context-Time) from Bronfenbrenner’s bioecological approach to provide a detailed perspective of the people, the environment and settings over time to show how these factors interact to construct an emergent learner group. The analysis looks at how and why this specific learner ecology emerges and ultimately, how it can benefit the Third Age and inform healthy ageing policy. The findings show that by engaging in second language learning, the participants find meaningful and active involvement in the group by creating a setting that welcomes self-expression, while balancing limiting and facilitating factors of resilience and reciprocal support, self-management, sage-ing, interest, agency, and responsibility. The result is the creation of a multilingual, multicultural, and multigenerational place of inclusion within the community. The study highlights the heterogeneity of the 3rd Age and illustrates the interplay of contexts outside of the learner group from micro to macro, individual and group resources, and the influence of the specific social time period. It also shows the social importance of creating opportunities for autonomous informal language learning settings in the community while highlighting the impact of Third Age agency.

FALLS AMONG OLDER ADULTS IN THE PHILIPPINES AND VIETNAM: RESULTS FROM NATIONALLY REPRESENTATIVE SAMPLES
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Falls are a major public health issues globally. However, no study with nationally representative samples, previously, had been done to understand falls among older adults in the Philippines and Vietnam. Using a biopsychosocial perspective, this study investigated the prevalence of falls and their associated factors among community-dwelling older adults in these countries. Cross-sectional data were drawn from the Longitudinal Study of Ageing and Health in the Philippines (N = 4,606) and the Longitudinal Study of Ageing and Health in Vietnam (N = 4,378). The outcome variables were any falls in the past year. Independent variables included biophysical factors (vision/chronic conditions/functional impairments/pain locations/insomnia symptoms/sleep medications/grip strength/walking speed/postural control), psychological factors (depressive symptoms), and sociodemographic factors (age/sex/education/living in urban area/living alone/social network size). Descriptive analysis and logistic regression analysis were used to analyze data. The results showed that 17.7% of the Filipino older adults fell in the past year and it was 7.3% among Vietnamese older adults. Significant factors that increased the odds of any falls among Filipino older adults were having a higher level of education, living in urban area, living with others, experiencing more functional impairments, reporting one or more pain locations, and having poor grip strength. In Vietnam, having more chronic conditions, experiencing more functional impairments, and reporting two or more pain locations were found to increase the odds of any falls. Population in the Philippines and Vietnam are aging rapidly. Findings from this study are timely in identifying at-risk individuals and preparing for effective falls prevention strategies.

FEAR OF FALLING, FALL RISK, DEPRESSION, AND ANXIETY IN COMMUNITY-DWELLING OLDER ADULTS
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Fear of falling is common in the older adult population with an estimated 43% being affected. We aimed to examine the associations among fear of falling, fall risk, depression, and anxiety in community-dwelling older adults. For this study 124 participants ranging from 60 to 96 years of age were recruited from the community settings in Central Florida. Fear of falling, fall risk, depression and anxiety were assessed using the Falls Efficacy Scale International (FES-I), the CDCSTEADI fall risk assessment, the Patient Health Questionnaire (PHQ) for depression, and the Geriatric Anxiety Inventory Short Form (GAI-SF) for anxiety respectively. Data was collected via the Qualtrics survey.
Comparisons were made for those below age 75 and those aged 75 and older, with 51.6% being under 75. Four ethnicity categories were also used: African American (8.1%), Asian (2.4%), Hispanic (14.5%), and non-Hispanic white (75%). All participants scored above 4 on the STEADI scale indicating fall risk. 42 scored positive for fear of falling on the FES-I scale and of that 42, 35.7% had a history of one or more falls in the last year (p < .01). 46.8% of the participants screened positive for depression and 100% of participants were positive for anxiety. Using one-way ANOVA analysis, we found significant relationships between (1) depression (p<.01); (2) STEADI (p<.01) and FES-I.

FEASIBILITY OF COMBINING NONINVASIVE BRAIN STIMULATION AND PERSONALIZED COUNSELING TO INCREASE PHYSICAL ACTIVITY
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Few older adults meet recommended physical activity guidelines. Behavioral interventions may be more effective when combined with other modalities to promote activity. Transcranial direct current stimulation (tDCS) designed to increase the excitability of the left dorsolateral prefrontal cortex (dLPFC) — a brain region subserving motivation and executive function — has the potential to augment behavioral interventions. We designed a randomized, double-blinded trial to examine the feasibility of combining personalized behavioral counseling and tDCS targeting the left dLPFC to improve physical activity and related outcomes in sedentary older adults living within the supportive housing. Participants wore a Fit-Bit throughout the study period. Baseline step counts were determined for two weeks, then participants completed four bi-weekly personalized counseling sessions over eight weeks. They were also randomized to receive 10 sessions of tDCS or sham stimulation over the two weeks after the baseline. Physical, cognitive, and patient-reported outcomes were assessed at baseline, after ten brain stimulation sessions, and after four behavioral sessions. 33 individuals were screened and 16 enrolled (age=80±7, 13 females). 13 participants completed the study, including 100% of study assessments, 99±5% of brain stimulation sessions, and 98±7% of behavioral sessions. Fit-Bit adherence rate was 93±13%. Daily step counts were 3197±1480 at baseline and 98±7% of behavioral sessions. Fit-Bit adherence rate of study assessments, 99±5% of brain stimulation sessions, and after four behavioral sessions. 33 reported outcomes were assessed at baseline, after ten brain stimulation sessions, and after four behavioral sessions. 33 reported outcomes were assessed at baseline, after ten brain stimulation sessions, and after four behavioral sessions.

FEASIBILITY OF USING A COMMERCIAL BOARD GAME TO ASSESS UPPER EXTREMITY FUNCTION IN OLDER ADULTS
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Upper extremity function, particularly the hand, declines with aging and is predictive of executive ability and independence. Standard assessments typically focus on strength partly due to a lack of easily administered functional tasks requiring multi-joint coordination and precision grasp. This study aimed to determine the feasibility of using an inexpensive board game to assess upper extremity function in older adults. Six healthy older adults (77 ±/+ 5.1 years) completed reaching tasks using the Connect4® game that requires grasping and placing small discs into a vertical board. Tasks included different hand configurations (unilateral, bilateral), and two dual-task conditions (serial subtraction by 7s and placing colored discs to match specific color patterns). The time to complete each task was recorded. For comparison purposes, participants completed a standardized pegboard test (Purdue Pegboard) using one or both hands. Connect4 results were similar to age-normative findings reported for the Purdue Pegboard. Dominant versus non-dominant hand performance did not differ while bilateral coordination tasks were slower than unilateral tasks for both the Purdue Pegboard (p<0.05) and Connect4 (p<0.01). Pegboard and Connect4 times were moderately to strongly correlated for all hand configurations. Dual-task conditions using Connect4 led to longer completion times (p<0.05). Preliminary results support the use of Connect4 as a functional upper extremity assessment tool for older adults. It is inexpensive, engaging, easy to use, and allows for cognitive-motor assessment using dual-task protocols, a critical factor in maintaining functional independence in older individuals. Further research will include a formal validation study across a wider age range.

FOOT MECHANICS DEFINE DIRECTIONAL CHANGES IN CURVED-PATH WALKING: NEW METHODS TO ASSESS THE MOTOR SKILL OF WALKING
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Although it is essential to navigating the world, curved path walking is a challenge to mediolateral balance control. The focus of previous curved-path walking research was in spatiotemporal characteristics. We quantified the foot-ground interaction, center of pressure (COP) characteristics during non-linear (eg curved-path) walking important to understand the functional mechanics of directional changes for curved paths. We hypothesized the foot mechanics differ between older adults with better versus poorer curved-path walking (Figure of 8 Walk Test, F8W). Twenty-five older adults (mean age 71.8 ± 8.9 years) completed the F8W on an instrumented walkway (Protokinetics, LLC). The derived metrics of the foot mechanics included medial/lateral movement of the COP for inside and outside steps, maximum medial and lateral COP excursions, and total medial/lateral COP range. Pearson correlations were used to examine...