

most potent factors influencing health in old age. In some ways this is paradoxical, because exercise stresses the body, potentially causing more rather than less damage. However the potency of exercise as a beneficial factor arises from the multiple ways in which it stimulates the cellular maintenance systems to function at a higher level. Exercise works, but there is much yet to learn about its full potential.

Tuesday 14th August 2012

Day Theme: Well-Being, Quality of Life, and Cognitive Function

Plenary Keynotes

PHYSICAL ACTIVITY, WELLBEING, AND QUALITY OF LIFE THROUGH THE LIFESPAN

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From birth to death physical activity (PA) pervades every aspect of our lives, from influencing the way we think, learn, love, express ourselves, choose our mates and friends, interact with our children, carry out our jobs, and recover from life-changing accidents and disease, to the way we accept the challenges of aging and ultimately, death. In early life PA comes easily, changes result in increased abilities, and enhanced well-being. Adult age-related physical changes require adaptation, both physically and mentally. Historically the focus and hypotheses of researchers that PA increases life span and decreases the effects of diseases that impair function and locomotion have been confirmed. For most individuals, however, quantity without quality of life would be tortuous. Within the last decade investigators have confirmed that PA can lead to increases in self-esteem, self-efficacy, and quality of life in general. Whether PA enriches our lives and feelings of well-being about our family, friends, work, play, and spiritual status, or whether a poverty of PA becomes a constraint that adds additional challenges to advanced aging is partially under our control. Frequent PA is beneficial for everyone at every age, the healthy, those with disabilities and disease, and even the frail elderly. No excuses! Opportunities to participate in PA are abundant if people just look for them.

PHYSICAL ACTIVITY IN THE PREVENTION OF DEMENTIA

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Alzheimer's disease (AD) is the most common form of dementia and its prevalence is increasing worldwide. Although researchers are working to identify treatments for AD, current treatments do not offer a cure. Thus, researchers are also focused on preventive strategies that may reduce the risk of or delay the onset of AD. Physical activity (PA) is one behavior that may hold promise in this regard. Evidence from prospective studies with cognitively

normal adults shows that PA is predictive of less cognitive decline over time and that PA decreases the relative risk of dementia. Meta-analytic reviews of this literature indicate that as compared to the least active group, participants who are the most physically active have 28-45% less risk of AD (Hammer & Chida, 2009; Daviglus et al., 2011). Evidence from randomized controlled trials (RCTs) also indicates that older sedentary adults who begin a PA program show greater improvements in cognitive performance than are observed in a control group (Colcombe & Kramer, 2003). Recent research has focused on understanding moderators and mechanisms of the relationship between PA and cognitive performance. One moderator that is of interest is a person's genetic risk for AD as determined by apolipoprotein E (APOE). APOE is a strong susceptibility gene for AD, and cerebral structure and function differ as a function of APOE genotype in non-demented adults (Kok et al., 2009; Morris et al., 2010; Reiman et al., 1996, 2003). Cross-sectional (Deeny et al., 2008; Etnier et al., 2007; Obisesan et al., 2011; Smith et al., 2010) and prospective studies (Niti et al., 2008; Podewils et al., 2005; Rovio et al., 2005; Schuit et al., 2001) report on the moderating effect of APOE on the relationship between PA and cognition; however the results of these studies are inconsistent and future research is necessary to clarify this relationship. With regards to mechanisms, one promising line of research supports the potential of neurobiological mechanisms. Animal studies indicate that PA influences the availability of growth factors (e.g., brain derived neurotrophic factor) that affect brain structure and function (Cotman et al., 2007; Voss et al., 2011). Future experimental research with humans is needed to enhance our understanding of moderators and mechanisms of the relationship between PA and cognition.

Symposia

THE WATERMEMORIES SWIM CLUB FOR PEOPLE WITH DEMENTIA

Neville, Christine¹, Henwood, Tim²; Clifton, Karen¹; Beattie, Elizabeth¹

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Alzheimer's Disease International reports that 36 million people worldwide have dementia and that this number could more than double by 2030. In addition to symptoms related to persistent memory loss, individuals become physically compromised, a precursor to reduced functional performance and quality of life. Recent research has shown that among community-dwelling adults with Alzheimer's disease regular and purposeful exercise can improve function and behaviour. However, little work is available among those residing in residential aged care facilities (RACFs). Anecdotal reports suggest swimming may be a positive stimulus for those with dementia, evidenced by improved mood, increased verbal response and general happiness and awareness. However, while there is positive evidence for those with Parkinson's disease, no structured investigations of aquatic exercise exists among those with dementia. The Watermemories Swimming Club is an innovative concept that aims to evaluate the impact of an evidenced-based aquatic exercise program on functional, physical, psychosocial, and behavioural wellbeing in older adults with dementia. RACF residents participated in the program twice weekly over a 12-week period. Measures of functional capacity, balance, muscle strength, anthropometry, quality of life, sleep, pain, falls, behavioural and psychological symptoms have been collected. This symposium will describe and discuss all aspects of the swimming club including conception, design, deliv-

ery, and outcomes. In addition, a detailed overview of all methodologies employed will be provided. Specific discussions will address 1) Psychosocial and behavioural considerations, 2) Exercise and functional capacity considerations, and 3) Knowledge translation considerations. **Keywords:** Dementia; Swimming; Balance; Falls; Quality of Life.

Psychosocial and behavioural considerations

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Background: People with dementia who live in a residential aged care facility (RACF) often have multiple unmet needs such as inadequate daytime activities, social isolation, anxiety, depression, and psychological distress. Predictors of higher unmet needs include behavioural and psychological symptoms (BPSD), low community involvement and limited social networks. The Watermemories Swimming Club was designed to increase physical activity in persons with dementia, improve health as well as enhance social, BPSD and affective outcomes. This pilot study evaluated the impact of a dementia-specific, aquatic exercise program on several psychosocial and behavioural outcomes. **Methods:** People with dementia living in two RACFs were invited to a 45-min dementia-specific, evidence-based aquatic exercise session, two times a week over a 12-week period. Data was collected at four time points: pre-intervention (T1), six weeks into the intervention (T2), nine weeks into the intervention (T3), and post-intervention (T4). Measures included The Generalized Anxiety Inventory, Cornell Scale for Depression in Dementia, Psychological Well-Being in Cognitively Impaired Persons and the Revised Memory and Behavior Problems Checklist. **Results:** Eleven people (median age = 88.4, IQR = 12.3; 1 male) completed the program. The Friedman Test indicated there was a statistically significant increase across the first three time points for psychological well-being ($\chi^2 = 8.66, p < .05$). Preliminary investigations also identified a significant decrease in the number of BPSD identified ($\chi^2 = 16.91, p = .001$) and the degree to which these behaviors distressed RACF staff ($\chi^2 = 16.86, p = .001$). **Conclusion:** The pilot study indicated that an evidence-based aquatic exercise program can produce positive psychosocial and behavioural outcomes for people with dementia. Further, long-term research is required to fully investigate the impact of the Watermemories Swimming Club on depression and anxiety.

The Watermemories Swimming Club for people with dementia: Exercise and functional capacity considerations

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Background: Regular exercise offers significant benefits for those with cognitive disease (Vreugdenhil et al., 2011). While positive anecdotal reports from pool-based activity do exist for those with dementia (McKenzie, 2011), no research is available among those residing in residential aged care facilities (RACFs). The aim of this project was to evaluate the impact of a structured aquatic exercise program on functional and physical wellbeing in older adults with an advanced diagnosis of dementia residing in a RACF. **Methods:** Twenty-three participants (83.7 ± 8.9 years, 2 men) were recruited from two RACFs. Participants undertook two 45-min dementia-specific, evidence-based aquatic exercise sessions per week over 12 weeks. Classes were delivered by a qualified swimming instructor and RACF staff and

volunteers supplied supervision and motivation within the pool. The program was informed by past aquatic exercise evidence for the elderly, and adapted to the cognitive capacity of people with dementia. Functional performance (Seniors Physical Performance Battery and the BOOMER), grip strength, and bioelectric impedance analysis (BIA) data were collected at baseline and post-intervention. All measures underwent a test-retest reliability assessment. **Results:** Preliminary analyses of baseline data indicate excellent reliability for BIA and grip strength measures (Interclass Correlations Coefficients (ICC) > .925), while some balance measures were less than optimal. At baseline, participants had walking speeds of 0.5 ± 0.2 m/s, timed up-and-go measures of 114.0 ± 30.9 s, BMIs of 27.6 ± 5.7 kg/m², and $56.7 \pm 37.9\%$ body fat. Positive anecdotal data have emerged, and quantitative post-intervention outcomes are presently being analysed. **Conclusion:** Participants in the present study had low functioning capacity and high body fat, which is typical of very old adults residing in RACFs. Variables that required little or no balance had excellent reliability in this population.

The Watermemories Swimming Club for people with dementia: Knowledge translation considerations

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Background: The purpose of this project was to try something different – rekindle positive memories of swimming in people with dementia who enjoyed swimming throughout their lives, and get them involved in active swimming again. Dementia often conjures up bleak pictures of agitation and disengagement with pleasures of daily living. However, there is nothing about dementia that should stop this wonderfully healthy and enjoyable activity. This project evaluated a primarily pleasure-based swimming club for people with dementia. **Methods:** People with dementia residing in two residential aged care facilities (RACFs) were enrolled in a dementia-specific, evidence-based aquatic exercise program. Residents attended two classes a week over 12 weeks. As a pilot study, a large component of the analysis focused on process data and the pragmatics of running such an innovative program. Focus groups and interviews were conducted with RACF staff, some residents, and the swimming instructor, into feasibility and best-practice issues related to implementing and sustaining such a program. Barriers and facilitators were noted and recommendations are currently being developed into a readily accessible website, manual and accompanying DVD that demonstrates the exercise program. **Results:** Preliminary analysis indicates several key issues to address when developing such a swimming club: choice of pool (temperature, depth, access, occupancy); swimming equipment (costumes, floatation devices, continence devices); RACF resources (volunteer availability, resident preparation); family education (concerns for resident safety and enjoyment); instructor/volunteer training; program presentation and adaption for participants with dementia; frequency of classes. **Conclusion:** This pilot project has identified key barriers and facilitators in implementing and maintaining a swimming club for people with dementia. This knowledge will be disseminated via an informative website, manual and training DVD.

GERI OLYMPICS: A 25 YEAR HISTORY—FROM CHARLESTON TO PRAGUE

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For 25 years the Geri Olympics Programs have been planned to promote wellness, active living, and quality of life for nursing home residents through competitive sports, team work, and intergenerational programming. The competitive events help improve the quality of life reducing the negative side effects of a sedentary life and focusing on several non medical issues as well. Relevant and related research will be presented, as will actual events and the guidelines for completing each event. Geri Olympics has been recognized at various levels of government as a program that advocates for improved quality of life within a segment of the population that is often over looked. The history of Geri Olympics will be presented as well as goals and planning objectives for residents. Experiences with planning, management, marketing and networking will be presented. Geri Olympics is a unique model that brings University students, faculty, and community volunteers as well as professionals together in planning an event for a nearly forgotten segment of the population. The research related to successful aging includes volumes of information which references the benefits of social engagement, need for exercise, being involved in meaningful events and groups, and having a sense of independence or control of one's schedule. All of these are benefits of Geri Olympics Programs through both outreach efforts in rural hospitals with more frail patients, or with nursing home residents who attend and compete in adapted sports. This symposium will cover: 1. History of Geri Olympics; 2. Goals and Objectives of Geri Olympics; 3. The evolution of the events and the actual events; 4. Related Research to Geri Olympics, aging and senior issues; 5. Advocacy and building bridges to the communities; 6. Planning concerns and guidelines; 7. Volunteers recruitment, selection and training. **Keywords:** Geri Olympic; Active Ageing; Events; Volunteers

ISSUES IN ACTIVE AGEING RESEARCH: AN ARGUMENT FOR CONSENSUS ON OUTCOME MEASURES

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The absence of a core standardized set of functional outcome measures makes it difficult for researchers to choose which measures to use. Measures may be single task, dual task, combinations of functional activities or composite measures. Often authors disagree on whether measures should be considered primary or secondary functional outcome measures. This makes it difficult to compare results between studies and compounds the problems of pooling data for systematic reviews. These issues have been highlighted in recent meta-analyses in which authors have selected measures for pooling based on their individual judgment of the relative importance of the outcomes. The enormity of the inconsistency of outcome measures as well as the extreme variability of exercise interventions (type, duration, intensity, supervision) complicates the interpretation of results across studies. Developing a consensus set of core outcome measures of functional ability would enhance the interpretation of data and enable pooling of data. The recently established COMET (Core Outcome Measures in Trials) Initiative aims to require consensus, guidelines, and adherence to achieve consistency. A core outcome set represents the minimum that should be measured and reported in all trials in which physical function of older adults is an outcome. This does not restrict outcome measurements in a trial but rather creates an expectation that the core outcomes will be collected and reported. This will make it easier for the results of trials to be compared, contrasted, and combined. The results of a scoping study of Cochrane reviews to determine the types and frequency of functional outcome measures reported in the literature, which will be presented at the symposium for feedback, is expected to initiate a formal consensus process.

Towards a consensus definition of healthy ageing: A systematic literature review

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Physical activity interventions are being used to facilitate healthy ageing. The absence of a consensus definition of healthy ageing and measurement tools based on that definition is an impediment to the testing of physical activity and other lifestyle based interventions. Depp & Jeste (2009) reviewed definitions of healthy ageing and found significant overlap between definitions but also differences in the domains of healthy ageing covered by each definition. Although Depp & Jeste(2009) provided a good summary of the definitions of healthy ageing, there were limitations in their methodology notably the restriction of literature searches to PubMed and Google Scholar. Our review will build on the work by Depp & Jeste and will expand it by including further relevant search terms and by searching a broader range of online databases. The following search terms will be run in Medline, Embase, Scopus, PubMed and Google Scholar: Search strategy: 'Successful ageing' or 'successful aging', 'health* ageing' or 'health* aging', 'productive ageing' or 'productive aging', 'optim* ageing' or 'optim* aging', 'ageing well' or 'aging well', 'positive ageing' or 'positive aging', 'unimpaired ageing' or 'unimpaired aging' and 'dynamic ageing' or 'dynamic aging'. Selection criteria include published in English, published in peer reviewed journals, studies reporting quantitative data from adults over 55, studies that operationalize the definition of healthy ageing as a dependent variable, and cross sectional or longitudinal studies. The full protocol will be registered with PROSPERO. A summary of the domains of healthy ageing covered by each definition will be presented, e.g. physical activity, social interactions etc. As part of the work of the LiveWell Programme, this definition will contribute to the development of a panel of measures aimed to capture the Healthy Ageing Phenotype for use as outcome measures with physical activity and other lifestyle based interventions. **Keywords:** Definition; Healthy Ageing; Physical Activity; Wellbeing; Quality of Life.

WHAT FACTORS CONTRIBUTE TO SUCCESSFUL COGNITIVE AGEING?

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There are more older people in society today, and people are living longer. A prominent concern amongst older people is what factors contribute to our retaining our cognitive functions. Therefore, the determinants of successful cognitive ageing are being sought as a research priority. It is particularly important to understand what contributes to successful ageing before people decline into dementia or mild cognitive impairment, because it is most likely that interventions at the early stages will be most effective, and that this is where prevention may take place. Searching for the determinants of cognitive ageing should take as wide a series of perspectives as possible. These should include genetic, medical, health, psychological, social, lifestyle, and other factors. This symposium will describe the efforts to do this in the context of the Lothian Birth Cohorts of 1921 and 1936. There will be presentations on a number of different possible contributors to successful cognitive ageing including genetic and medical causes, activity and lifestyle causes and contributions from brain health and integrity. Practical implications will be emphasised.

Studying lifetime cognitive ageing in the Lothian Birth Cohorts of 1921 and 1936

Deary, Ian J ^{1,2}, Davies, Gail ¹, Harris, Sarah ^{1,3}, Luciano, Michelle ^{1,2}, Lopez, Lorna ^{1,2}, Starr, John. ^{1,4}

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The Lothian Birth Cohort of 1921 comprises 550 individuals who took part in the Scottish Mental Survey of 1932. The Lothian Birth Cohort of 1936 comprises 1,091 individuals who took part in the Scottish Mental Survey of 1947. The LBC1921 were first recruited at age 79, and have been followed up regularly to age 90. The LBC1936 were recruited at age 70 and have been followed up until age 76. These individuals, remarkably, also had cognitive ability tested in the Scottish Mental Surveys of 1932 and 1947, respectively. The assessments in childhood and old age will be described. In old age, the participants undertake a wide range of cognitive, health/medical, lifestyle, social, and other assessments. They have also given blood for DNA extraction and detailed genetic testing. The LBC1936 have also undergone a detailed structural brain scan. This means that a very wide range of potentially causal factors can be examined for the clues to successful ageing of cognitive capabilities. This presentation will introduce the cohorts and some of the genetic and environmental findings to date. This includes candidate gene studies. For example, possession of the $\epsilon 4$ allele of the *APOE* gene is associated with poorer cognitive ageing from childhood to old age, and within old age itself. Also, genome-wide genetic testing in the Lothian Birth Cohorts has revealed how the environment and genes contribute to how much cognitive ability changes from childhood to old age. This presentation provides an introduction for the talks that follow, on health behaviours, activity, and brain structure.

Health behaviours and cognitive function in old age

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Certain lifestyle factors have been identified as potentially important predictors of cognitive ageing. Evidence suggests that cognitive performance in old age can be maintained by health-promoting behaviours such as a healthy diet, moderate alcohol consumption, and smoking avoidance. Determining the extent to which such health behaviours are associated with cognitive outcomes in later life is vital, as these behaviours are modifiable. To date, we have investigated the contribution of caffeine and alcohol intake, smoking behaviour, and Body Mass Index (BMI), to individual differences in non-pathological cognitive ageing in the Lothian Birth Cohort 1936 Study ($n = 1091$). We undertook a general linear model approach for each set of analyses, which allowed us to control for potentially confounding variables, including, age, sex, childhood cognitive ability (IQ) and adult socioeconomic status (SES). People with a higher caffeine and alcohol consumption and BMI had significantly better cognitive abilities at age 70. However, these relationships were found to be confounded by childhood IQ and SES. Continuing to smoke into old age showed detrimental effects on

general cognitive ability and processing speed tasks after controlling for covariates. Results from each of the analyses will be presented. Based on this evidence, we suggest that many of the previously reported associations between health behaviours (e.g. moderate caffeine and alcohol consumption) and cognitive abilities in old-age are artifacts of confounding by a higher premorbid intellect and SES and the possible influence on these factors on the adoption of health behaviours in adulthood. In conclusion, the effects of lifestyle on cognition in old age are difficult to disentangle from the effects of cognition on lifestyle and from other confounding variables; the relationship is bidirectional. However, the results from the LBC1936 suggest that smoking in old age is a risk factor for cognitive ageing.

Activity and cognitive ageing: A healthy mind in a healthy body?

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A number of lifestyle factors that have been proposed as protective against age-related cognitive decline have been assessed in the LBC1936. These have included participation in social and intellectual activities, level of physical activity, and social networks and support, for example. Recent analyses will be presented in which the associations between activity and cognitive ability were examined at age 70. While participation in socio-intellectual activities (reading, visiting museums, attending social groups, etc.) was associated with higher cognitive ability in old age, these associations were attenuated when childhood cognitive ability was considered (Gow et al., 2012). That is, the associations reported resulted from those of initially higher ability being more likely to have taken up these pursuits across the lifespan, rather than their having a beneficial effect. Physical activity, however, remained associated with cognitive ability, after controlling for childhood ability; participants who reported being more physically active performed better on tests of general cognitive ability and processing speed. These findings have been followed-up by investigating whether activity participation is associated with aspects of brain structure, assessed by a number of brain imaging parameters. Increased physical activity was associated with fewer white matter lesions (age-related damage to the white matter connections), less brain atrophy and higher white matter integrity 3 years later (Gow et al., under review). More recently, the effect of physical fitness (measured by lung function, grip strength, walk speed) on brain atrophy have been examined in detail. These new analyses look at both fitness level at ages 70 and 73, and fitness change across time as predictors of atrophy.

Brain structure and cognitive ageing: Imaging the Lothian Birth Cohort 1936

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The Disconnected Mind (<http://www.disconnectedmind.ed.ac.uk>) seeks to understand how alterations to the structure of white matter, the brain's wiring, produce age-related decline in cognitive function using the Lothian Birth Cohort 1936 (LBC1936). This unique group of 1091 participants were born in 1936 and underwent cognitive testing in 1947 at age 11. Currently in their 70s, the subjects have undertaken repeat cognitive testing and have just completed the first of two waves of brain Magnetic Resonance Imaging (MRI). The examination includes structural MRI to describe general brain appearance, a detailed volume scan to measure brain size, and sequences to map white matter connections and characterize age-related damage. These latter sequences include diffusion tensor MRI, which measures the random motion of water molecules in vivo and can be used to quantify white matter tract integrity and map its three dimensional structure in a technique termed tractography, and magnetization transfer MRI (MT-MRI) which provides a quantitative measure of the integrity of myelin, effectively the white matter's insulation. This examination represents one of the most advanced imaging protocols ever undertaken to investigate brain structure in normal ageing. Now that the first wave of imaging is complete, and the second has commenced, analysis is ongoing to use this wealth of brain MRI data to investigate relationships between brain structure and life-long changes in cognitive ability. For example, we have found links between brain volume, white matter lesion load and iron deposits with cognition, and how white matter tract integrity affects general intelligence and neuroticism. In this talk I will provide an overview of the brain MRI of the LBC1936, describe some of our recent important findings, and discuss how our methods are being used to provide further insights into links between white matter and cognitive ageing.

COMPARING STRENGTH AND POWER TRAINING IN OLDER PERSONS

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Demographic shift towards an older population in industrialized countries pose challenges for the individual, public health system, researchers and politicians. Of high priorities is the maintenance independent status among older adults, with aspects of functional, cognitive, and psychological wellbeing. Decline and/or limitation in physical function and capacity in activities of daily living are precursors for institutionalization, mortality, and co-morbidities. Muscle strength and muscle power contributes to physical function, and both are characterized during normal ageing by a progressive decline. Muscle strength is directly related to the force capacity of the muscle. In contrast, muscle power is defined as the work per unit of time and is the product of force (strength) and movement velocity (speed). Research shows that up to 40% of muscle strength and 75% of muscle power can be lost across the life span. While multifactorial, the loss of muscle strength is due primarily to the atrophy of muscle mass and muscle fibres, and the loss of muscle power is related to the loss of type II fast-twitch muscles fibres. Recent research has demonstrated different effects on physical function by planned and structured muscle strength and muscle power intervention in older persons¹⁻⁶. The symposium will focus on the different effects of muscle strength and muscle power exercise (Jonathan Bean), as well as the impact of training duration, follow-up

time, and detraining (Tim Henwood). The issue of muscle strength and immunity at higher age will be addressed (Ivan Bautmans) as well as the effects of muscle strength training in the rehabilitation process of in-hospital patient (Katharina Pils). **References:** ¹Henwood T, Riek, St., , Taaffe, DR. Strength Versus Muscle Power-Specific Resistance Training in Community-Dwelling Older Adults. *J Gerontol A Biol Sci Med Sci*. 2008 January 1, 2008;63(1):83-91. ; ²Henwood T, Taaffe, DR. Detraining and Retraining in Older Adults Following Long-Term Muscle Power or Muscle Strength Specific Training. *J Gerontol A Biol Sci Med Sci*. 2008 July 1, 2008;63(7):751-8. ; ³Liu C, Latham, NK. Progressive resistance strength training for improving physical function in older adults. *Cochrane Database Syst Rev*. 2009(3):CD002759. ; ⁴Bean JF, Kiely, DK., LaRose, S., O'Neill, E., Goldstein, R., Frontera, WR. Increased velocity exercise specific to task training versus the National Institute on Aging's strength training program: changes in limb power and mobility. *J Gerontol A Biol Sci Med Sci*. 2009 Sep;64(9):983-91. ; ⁵Steib SSchoene D, Pfeifer K. Dose-Response Relationship of Resistance Training in Older Adults: A Meta-Analysis. *Med & Sci in Sports & Exerc*. 2010;42(5):902-14. ; ⁶Tschopp M, Sattelmayer MK, Hilfiker R. Is power training or conventional resistance training better for function in elderly persons? A meta-analysis. *Age and Ageing*. 2011 September 1, 2011;40(5):549-56.

Comparing the effects of strength training and power training among older adults with mobility problems

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Exercise has many health benefits for older adults improving disease status and physical functioning. Mobility is one aspect of physical functioning that has been a primary focus of exercise research. This is for two main reasons. Firstly, mobility problems are very prevalent affecting more than 25% of individuals 75 years and older and secondly, because mobility is a risk factor for other adverse outcomes such as disability, institutionalization and mortality. Currently, the treatment that is recognized to be most efficacious in improving mobility is exercise. Early observational studies exploring mobility pointed to strength impairments as the attribute most worthy of targeting with exercise. Subsequent studies suggested that muscle power impairments may have a greater influence on mobility. A premise of much of the clinical literature and studies to date is that one mode of exercise has been advocated to treat all patients with mobility problems. This presentation will review the results of recent studies among older adults with mobility problems comparing the effectiveness of modes of strength training versus modes of power training. Additionally the relevance of limb speed, the factor that distinguishes limb strength from limb power, will be highlighted. **References:** Guralnik JM, Ferrucci L, Pieper CF, et al. Lower Extremity Function and Subsequent Disability: Consistency Across Studies, Predictive Models, and Value of Gait Speed Alone Compared with the Short Physical Performance Battery. *J Gerontol Med Sci*. 2000;55A(4):M221-M231.; Bean JF, Vora A, Frontera WR. Benefits of exercise for community-dwelling older adults. *Arch Phys Med Rehabil*. Jul 2004;85(7 Suppl 3):S31-42; quiz S43-34; Bean JF, Kiely DK, LaRose S, Goldstein R, Frontera WR, Leveille SG. Are changes in leg power responsible for clinically meaningful improvements in mobility in older adults? *J Am Geriatr Soc*. Dec 2010;58(12):2363-2368; Pahor M, Blair SN, Espeland M, et al. Effects of a physical activity intervention on measures of physical performance: Results of the lifestyle interventions and independence for Elders Pilot (LIFE-P) study. *J Gerontol A Biol Sci Med Sci*. Nov 2006;61(11):1157-1165; Bean JF, Kiely DK, LaRose S, O'Neill E, Goldstein R, Frontera WR. Increased velocity exercise specific to task training

versus the National Institute on Aging's strength training program: changes in limb power and mobility. *J Gerontol A Biol Sci Med Sci*. Sep 2009;64(9):983-991.

High-velocity versus conventional resistance training for older adults: Effect and considerations of training, detraining and retraining

Henwood, Tim.

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Associated to a loss in muscle mass and atrophy of muscle fibres, the loss in muscle strength is said to be a predictable and preventable feature of normal ageing. While the loss in muscle strength is debilitating, evidence suggest that the associated loss in muscle power has greater impact on functional performance and falls risk for the older adult. Nevertheless, for all older adults the decline in muscle mass and performance (strength or function), termed sarcopenia, is associated with substantial negative health consequence. However, research show irrefutably that exercise, most specifically resistance training, is an effective countermeasure to the loss in muscle mass and performance, with addition benefits found for bone mineral density, body composition, cognitive wellbeing and chronic disease. However, among older populations resistance training participation numbers are low, and, for those training, consideration is needed given the older adults susceptibility to extended training interruptions. This presentation will confer the benefits of resistance training for older adults by drawing from a number of research studies, with specific consideration given to the outcomes of a 60-week high-intensity resistance training intervention (training-24 weeks ($n = 53$), detraining-24 weeks and retraining-12 weeks ($n = 27$) among healthy community-dwelling adults aged 65 - 84 years that compared conventional moderate-velocity constant-resistance muscle strength training (3 sets (75%1RM), 8 repetitions) to high-velocity varied-resistance muscle power training (1 set (45, 60, 75%1RM), 8 repetitions). The benefits of training and consequences of detraining to muscle performance (strength, power, movement velocity and function) and anthropometry (bone mineral density, muscle and fat mass) will be discussed. In addition, the barriers and motivators to resistance training will be introduced and the impact of training on maintained independence, quality of life, falls and morbidity considered. Results indicate that both muscle strength and muscle power training have significant benefits for the old and very old adult, that high-intensity training has a residual impact on muscle function, and that the decreases in muscle strength associated with detraining can be regained through short-term retraining. These results have important implications for the exercise prescription for older adults.

Physical exercise to obtain stronger muscles and better immunity at higher age

Bautmans, Ivan.

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There is growing evidence for the involvement of inflammatory processes in the development and progression of several age-related conditions, among which sarcopenia (age-related loss of muscle mass) and frailty (one of the major geriatric syndromes) (Bautmans et al., 2009). In fact, ageing, even in healthy persons, is commonly accompanied by slightly elevated concentrations of circulating pro-inflammatory mediators (such as Interleukin[IL]-6 and Tumor Necrosis Factor- α), a phenomenon corresponding to a chronic low-grade inflammatory profile (CLIP) (Beyer et al., 2012). Older persons presenting more pronounced CLIP show indeed lower muscle mass and muscle strength; and are more likely to become frail. Elderly people possess an important residual, but latent, physical potential, which can be

mobilized by training, even at very high ages (>90years). Physical exercise has also strong regulating and favourable effects on CLIP. Besides providing anabolic stimuli, it is well known that intensive physical training provokes an inflammatory reaction, accompanied by the liberation of pro-inflammatory cytokines (especially IL-6) and complex changes in the cellular components of the immune system. In this context, IL-6 is thought to be mainly released from the contracting muscles and would act as a “myokine,” exerting a different function from that seen during e.g. acute infections. The acute phase response to exercise is positively related to the intensity of the muscle work delivered. Recently, it has been shown that older persons, similar to young adults, are able to respond to physical stress by a significant exercise-induced increase of circulating IL-6 (Bautmans et al., 2005). In fact, the exposure to (repetitive) mild stress has been shown to improve survival and longevity both at the cellular and organism level. In this context, an improved wound healing by physical training, has recently been described in old mice and in older humans; the underlying mechanisms, possible immune-related, have not been elucidated yet. Exercise can probably lower infection-induced cytokine release by peripheral mononuclear blood cells. Physical exercise would thus reduce sarcopenia as well as CLIP and the acute inflammatory response upon infection in the aged; thus enlarging considerably the scope of geriatric rehabilitation professionals in designing health-enhancing physical exercise programs. To date, however, optimal dosage of exercise to obtain most beneficial effects remains elusive, and more research is warranted to unravel the exact dose-response relationship. **References:** Bautmans, I., Njemini, R., Vasseur, S., Chabert, H., Moens, L., Demanet, C., Mets, T., 2005. Biochemical changes in response to intensive resistance exercise training in the elderly. *Gerontology* 51, 253-65; Bautmans, I., Van Puyvelde, K., Mets, T., 2009. Sarcopenia and functional decline: pathophysiology, prevention, and therapy. *Acta Clin Belg* 64, 303-16; Beyer, I., Mets, T., Bautmans, I., 2012. Chronic low-grade inflammation and age-related sarcopenia. *Curr Opin Clin Nutr Metab Care* 15, 12-22.

The influence of physical therapy on power and strength

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Physical activity as well as adequate nutrition is basis for maintaining muscle strength and power in old age. Both are the basis for executive function and safe performance of the activities of daily living. Therefore physical exercise is an important component of geriatric prevention and rehabilitation. There is recommended a combination of resistance training and endurance training. There are no detailed recommendations for intensity and impact yet. Training cessation and/or immobilisation is one of the main reasons for progression of sarcopenia and functional decline. Loss of muscle power has a higher impact on muscle function than loss of muscle strength in old age. Therefore physical therapy including exercise and training becomes more important during hospital stay. If there is no active muscle activity possible, electric stimulation can be used to continue training, eg at intensive care wards. If patients are able to follow the physical activity, electric stimulation may support the training effect and the activity in the motor neuron. The quality and power of muscle fibres as well as the muscle mass will be the result. Even if there is no neurological dysfunction exercise itself can fail to regain muscle force or to keep muscle fibres and –mass. Electric stimulation of the muscle may be supportive. Although there is an increasing numbers of data available, there are long term studies missing. The combination of resistance and power training, and for frail people electric stimulation, will improve quality of muscle and physical function. **References:** Henwood TR, Taaffe DR. Detraining and retraining in older adults

following long-term muscle power or muscle strength specific training. *J Gerontol A Biol Sci Med Sci*. 2008 Jul; 63(7):751-8; Filipovic A et al. Electromyostimulation--a systematic review of the influence of training regimens and stimulation parameters on effectiveness in electromyostimulation training of selected strength parameters. *J Strength Cond Res*. 2011 Nov; 25(11):3218-38; Liu CJ, Latham NK. Progressive resistance strength training for improving physical function in older adults. *Cochrane Database Syst Rev*. 2009 Jul 8;(3); Minna Mänty et al: Mobility-Related Fatigue, Walking Speed, and Muscle Strength in Older People *J Gerontol A Biol Sci Med Sci* (2012) 67A(5): 523-529; Paillard T. Combined application of neuromuscular electrical stimulation and voluntary muscular contractions. *Sports Med*. 2008; 38(2): 161-77; Pereira A,: Muscle performance and functional capacity retention in older women after high-speed power training cessation. *Exp Gerontol*. 2012 May 29.

RAISING THE STANDARDS FOR TRAINING FITNESS LEADERS TO WORK WITH OLDER PEOPLE

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The "International Curricular Standards for Physical Activity Instructors of Older Adults," adopted by the World Health Organization in 2005, represents a significant international effort to identify the foundational knowledge that fitness professionals need to work competently with older clients. Yet these guidelines have not been fully utilized by the fitness industry. In the United States personal training is still completely unregulated. Trainers are not required to have a specific degree, attain licensure, or even hold a certification. A handful of certifying bodies have attained third-party accreditation for their certifications yet educational standards vary widely. In Canada exercise leadership for older adults is still largely unregulated. However, steps to accredit Kinesiology professionals and exercise physiologists have been taken. The Canadian Society for Exercise Physiology and the Canadian Centre for Activity and Aging are leaders in education. The Active Aging Specialist™ Instructor certification from Canadian Fitness Education Services will raise leadership standards and allow all levels of fitness leaders to advance their skills and abilities. In Europe and the UK standards for exercise leaders are more highly developed. The European Register of Exercise Professionals [regulated by the European Health and Fitness Association (EHFA)] uses an accepted official European Qualification Framework (EQF) for determining the minimum standards of exercise professionals. There are numerous approved educational providers but wide variations still exist and better consistency is needed. In an effort to create globally accepted standards the EHFA has hosted 2 International Fitness Standards meetings with organizations and leaders from around the world. Concern for older adults should be a priority issue in this discussion.

BUILDING A NATIONAL STRATEGY TO PROMOTE PHYSICAL ACTIVITY: THE ACSM SYMPOSIUM

Buchner, David¹; Rogers, Michael²; Chodzko-Zajko, Wojtek¹; Morgan, Amy³

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Levels of physical activity are low in U.S. adults, and promotion of physical activity remains a public health priority. In the U.S., the American College of Sports Medicine (ACSM) has been involved in several important initiatives to promote physical activity in older adults.

This session will discuss four of these initiatives. 1) The U.S. National Physical Activity Plan (David Buchner, MD MPH FACSM, University of Illinois). The National Physical Activity Plan is the first comprehensive plan for increasing physical activity in all U.S. populations groups. Launched in 2010, the plan identifies high priority strategies for increasing levels of physical activity. This presentation will describe the development and implementation of the plan. 2) The ACSM Strategic Health Initiative on Aging (Michael Rogers, PhD FACSM, Wichita State University). To enhance its activities related to physical activity and exercise in older adults, ACSM established the Strategic Health Initiative on Aging. This presentation will describe the activities and accomplishments of the initiative. These include scientific statements on the benefits of physical activity in older adults, as well as practitioner tools for assessing older adult's ability to participate in exercise programs. 3) Exercise is Medicine (Wojtek Chodzko-Zajko, PhD FACSM, University of Illinois). In 2007, the "Exercise is Medicine" campaign was launched as a joint initiative of ACSM and the American Medical Association. It involves promoting physical activity for both its preventive and therapeutic effects, and seeks to increase the role of the US health care system in promoting physical activity. This presentation will describe the objectives, activities, and achievements of the initiative. 4) ACSM Strategy for Practitioner Education (Amy Morgan, PhD FACSM, Bowling Green State University). ACSM plays a major role in the continuing education of practitioners regarding the role of physical activity in prevention and treatment of diseases. This presentation will discuss issues in helping practitioners stay current on issues in physical activity in older adults, as well as provide an overview of a recent resource from ACSM: The ACSM Guide to Exercise for Older Adults.

The U.S. National Physical Activity Plan

Buchner, David M

University of Illinois at Urbana Champaign, United States.

This presentation will describe the development and implementation of the U.S. National Physical Activity Plan (<http://www.physicalactivityplan.org/>). Launched, in 2012, the National Physical Activity Plan identifies high priority policies, programs, and initiatives for increasing physical activity in all population groups, including older adults. The recommendations are organized into eight societal sectors: public health; health care; education; transportation, land use and community design; parks, recreation, fitness, and sports; business and industry; volunteer and non-profit organizations; and mass media. For each strategy to increase levels of physical activity, the Plan identifies specific tactics for implementation. Numerous organizational partners, including ACSM, are involved in implementing the plan. The National Coalition for Promoting Physical Activity in the United States is playing a leading role in coordinating and implementing the Plan. For each sector of the plan, the coalition identified partners that would advance the strategies of that sector. Most strategies involve creating policies, environments, and systems that support regular physical activity. A funded evaluation of the implementation and of the impact of the Plan is ongoing. The presentation will also discuss the relative merits of an age-specific plan as compared to an inclusive national plan for all age groups.

The ACSM Strategic Health Initiative on Aging

Rogers, Michael E.

Wichita State University, United States.

To enhance its activities related to physical activity and exercise in older adults, the American College of Sports Medicine (ACSM) established the Strategic Health Initiative on Aging (SHI-A). This presentation will describe the major activities and accomplishments of the initiative. SHI-A is led by ACSM members with expertise in physical activity and aging. SHI-A provides leadership in professional education, programming, partnership engagement, and identifying research-related opportunities for ACSM. For example, the committee is actively engaged in building synergies with Exercise is Medicine. SHI-A led the revision of ACSM's Position Stand on Exercise and Physical Activity for Older Adults. It is responsible for writing the ACSM Best Practices Statement on Physical Activity Programs and Behaviour Counselling in Older Adult Populations. SHI-A has also supported the development of a new screening tool for older adults called EASY (Exercise And Screening for You) as well as the Active Aging Toolkit. The initiative has directed active aging training modules at regional ACSM meetings. SHI-A was a key partner in the development and implementation of *The National Blueprint: Increasing Physical Activity Among Adults Age 50 and Over*, and the *ACSM/AHA Physical Activity Guidelines for the Older Adult*. The initiative collaborated with the U.S. National Institute on Aging Exercise Workbook, the 2008 Guidelines for Physical Activity for Americans, the Active Aging Community Center, and the U.S. National Physical Activity Plan. Participants in SHI-A have also developed ACSM Policy Roundtables, participate in subsequent policy workgroups, and encourage ACSM members to submit sessions to the Health and Fitness Summit and propose symposia for Annual Meeting that focus on aging and activity.

Exercise is medicine

Chodzko-Zajko, Wojtek.

University of Illinois at Urbana Champaign, United States.

This presentation will describe the objectives and achievements of the "Exercise is Medicine" campaign that is a joint initiative of the American College of Sports Medicine and the American Medical Association. On November 5, 2007 Exercise is Medicine was launched with the goal of encouraging primary care physicians and other health care providers to include exercise when designing treatment plans for patients. Exercise is Medicine strives to make physical activity a "vital sign" that is routinely assessed at every patient interaction with a health care provider. This presentation will provide an overview of the structure and major initiatives of Exercise is Medicine. Exercise is Medicine is a multi-organizational initiative coordinated by the American College of Sports Medicine whose guiding principles are as follows: (1) Exercise and physical activity are important to health and the prevention and treatment of many chronic diseases, (2) More should be done to address physical activity and exercise in health care settings, and (3) Multi-organizational efforts to bring a greater focus on physical activity and exercise in health care settings are to be encouraged. Exercise is Medicine calls on each person and all partners dedicated to the idea that exercise truly is medicine to continue to build, support and advocate for physical activity as essential for global health and wellbeing by committing to action. Policy makers are called to change policy to support physical activity as a vital sign for health. Health care providers and fitness professionals are called to integrate exercise into every patient and client interaction. Communities, workplaces, and schools are called to promote physical activity as an essential part of health and wellbeing. More information about Exercise is Medicine is available online at www.exerciseismedicine.org.

ACSM strategy for practitioner education

Morgan, Amy L.

Bowling Green State University, United States.

This presentation will provide an overview of the role of ACSM in providing resources for education of practitioners on the topic of physical activity in older adults. As the % of the world's population over age 65 continues to increase, practitioners in areas related to exercise science need competency in promoting physical activity in older adults. Practitioners need to stay current with knowledge regarding the impact of physical activity on the treatment and prevention of diseases associated with advancing age. Practitioners need an understanding of the breadth of health benefits of physical activity in older adults, such as physiologic effects on bone health, mental health benefits on cognition, and social benefits related to regular participation in physical activity. A new resource from the American College of Sports Medicine, ACSM Guide to Exercise for Older Adults, is designed to meet these needs. The book, for 'entry level professionals', is intended to be a manual to help health and fitness professionals guide older clients in their selection of appropriate exercises and physical activities. Basic topics related to physical activity and healthy aging are discussed in an applied context. This presentation will comment on some of the challenges in providing continuing education of practitioners as well as provide an overview of this new resource from ACSM.

PICKING UP OLDER MEN: REFLECTIONS FROM THE FIELD

Jones, Roger.

AgeUK, UK.

Background: Fit as a Fiddle (FaaF) is a new programme designed to help older people to live more healthy, active and fulfilling lives. The research is based upon the specific strand aimed at engaging with older men the reasons for targeting this group are the health inequalities between men and women. Key Statistics for Older Men: 1) The average UK male life expectancy at birth is currently 77.7 years. This varies for occupation and part of the country. For women average UK life expectancy is 81.9 years. 2) Diagnoses of both prostate and testicular cancer are up since the early 1990s. 3) Men are now more likely than women to be mentally ill. 4) Men are increasingly unlikely to consult a doctor. 5) Compared to the wider population, Indian, Bangladeshi, Black Caribbean and Irish men are at greater risk of heart disease and stroke. This is probably due to a combination of things. 6) Men in the north of the UK are generally less healthy than men in the south. Men from Manchester and Blackpool have the shortest life expectancy. The purpose of this research is to outline the most effective way to engage or 'pick up', motivate and retain older men. **Methods:** The 1st author has managed the FaaF project working directly with organisations across a range of contexts (i.e., rural, urban, gay, sport based) amongst others for approximately 5 years. The 1st author will allude to his experiences and reflections as an applied practitioner and manager in this field, outlining critical operational necessities for effective work with older men. **Results:** The results allude to the impact the project has had using National partners and trained peer mentors in engaging men in activities and groups which attract them retain them and also have lifestyle changing impacts. **Conclusion:** The conclusion will include results from the National evaluation by Ecorys and Keele University and the case studies collated during the programme. **Keywords:** Older Men; Life Expectancy; Rural; Urban; Programmes; Community.

PHYSICAL ACTIVITY, FITNESS, AND FATNESS: INTERACTIVE IMPLICATIONS FOR PHYSICAL FUNCTION AND QUALITY OF LIFE IN OLDER ADULTS

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³Teachers College, Columbia University, United States; ⁴University of Strathclyde, UK.

Aging and concurrent declines in physical activity are associated with increased risks for obesity and physical disability. In the United States, individuals aged 60 and over are more likely to be obese than younger adults with ~42% of older women being obese. Management of obesity in older adults is challenging as weight loss also causes bone and muscle mass loss, thereby increasing risks for osteoporosis and sarcopenia. Beyond physical health, obesity can also compromise psycho-social health status reducing vigor and quality of life. Physical activity is an established key to weight management, enhances physical function, and positively impacts psycho-social health in older adults. However, the interactive effects of physical activity, body composition (fat and muscle mass), fitness (musculoskeletal and neuromotor), and physical and psycho-social function are not clearly delineated. Moreover, health status may alter the relations among the aforementioned variables in that physical function may be most impacted by musculoskeletal and neuromotor fitness in frail individuals whereas adiposity may be the primary predictor in higher functioning older adults. The objective of this symposium is to highlight the contemporary literature regarding: a) weight management guidelines for older adults, b) the interactions among physical activity, fitness (muscle strength, endurance and power; neuromotor control), body composition (fat and skeletal muscle mass), and physical function within the context of health status; c) the negative implications of obesity on psycho-social health and the utility of physical activity to enhance quality of life even in the presence of excess adiposity; and, d) statistical considerations when conducting research in this area to isolate the physical activity, fitness and body composition effects on physical function. Our symposium, similar to the disease of obesity, is multi-faceted and will use an integrated and interdisciplinary approach.

Physical function: Is it physical activity, fitness, fatness, or an interaction thereof?

Garber, CE.

Columbia University, United States.

Physical function typically declines with age and is associated with decreased physical activity, increased sedentary time, poorer fitness and health, reduced quality of life, and falling. Overweight and obesity can contribute to physical function limitations and disability through imposed physical limitations on mobility as well as through mechanisms such as sarcopenia and co-morbid chronic diseases such as restrictive lung disease, type 2 diabetes mellitus, coronary heart disease, osteoarthritis, kidney disease and others. On the other hand, chronic diseases and conditions can contribute to overweight and obesity, reduced physical activity and fitness, and physical function limitations. Thus, physical function limitations can both be cause and effect of physical inactivity, overweight/obesity and chronic diseases and conditions. This presentation will discuss the inter-relationships between physical activity, physical function and physical fitness and health, with a particular focus on the management of body fatness and weight in older persons. Recent research about the role of physical activity and exercise in affecting the various components of physical fitness and physical function will be discussed.

Obesity and psychological well being: Physical activity, obesity and quality of life

Riebe, Deborah; Blissmer, Bryan.

University of Rhode Island, Kingston, Rhode Island, United States.

Health-related quality of life (HRQOL) is a multidimensional concept that includes domains related to physical, mental, emotional, and social functioning. Obesity impairs HRQOL in older adults and higher degrees of obesity are associated with greater impairment. Obesity associated decrements in HRQOL are most pronounced on the physical domains of functioning since obesity exacerbates the age-related decline in physical function. Conversely, participation in regular physical activity is associated with better HRQOL especially in the physical domains. Recent studies have begun to jointly examine the interaction of age, obesity, and physical activity on HRQOL in older adults and suggest that physical activity can ameliorate the negative impacts of obesity on HRQOL. This presentation will examine the independent and interactive effects of obesity and physical activity on HRQOL. Results from the SENIOR Project and other major studies will be highlighted.

Statistics and research design: Teasing out the effects of physical activity, fitness, and adiposity

Rowe, David A.

University of Strathclyde, UK.

Physical (in) activity (and more recently sedentarism), fitness and body composition have all been implicated as determinants of public health. Public health outcomes in older adults include cardiometabolic health, orthopaedic health, cancer prevention, psychosocial wellbeing, ability to conduct the activities of daily living, and ultimately, prevention of premature mortality. The unique and interactive effects of these factors on health are not well understood, despite extensive research (the empirical debate of "fit vs. fat" effects on mortality, for example has continued for over a decade). In this presentation, a variety of research examples will be used to illustrate ways in which researchers have designed studies and analysed data in order to tease out the relative importance of physical activity, fitness, and body composition to health. Commonly used methods such as linear regression, logistic regression, analysis of covariance, canonical correlation, and structural equation modelling will be introduced and explained. Limitations of these methods will be identified and take-home messages will be presented to guide researchers towards stronger designs and analysis methods in the areas of physical activity, fitness, body composition, functional ability, and quality of life.

CHALLENGES AND OPPORTUNITIES FOR INCREASING DAILY ACTIVITY IN OLDER AGE

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Older adults are the least active segment of the population in western societies. This symposium will present recent research on the challenges and opportunities for effective promotion of active ageing. This will include: 1) Qualitative data from urban and rural living older people which identifies unique challenges accruing from the interplay of personal, interpersonal, and environmental barriers to active living. 2) Accelerometry data from observational cohort studies on older people showing that although levels of physical inactivity and obesity are

high in older adult populations, daily trips out of the house, for any reason, are associated with more activity in all groups of older people. This raises the possibility that social and/or environmental interventions that encourage older people to get out and about in their communities may be an acceptable and effective alternative to medical or structured exercise interventions. 3) Longitudinal data from a nationally representative sample of older adults in England, showing that volunteering is associated with lower all-cause mortality - partially mediated by increased physical activity - and may therefore provide an attractive opportunity for the promotion of active ageing. 4) Findings from a recent MRC-funded scoping project to identify a range of activity promotion strategies that could be used in community programmes using literature reviews, secondary data analysis and stakeholder focus groups. Finally, video recordings of older adults performing singing-and-movement activities will highlight the potential for providing meaningful and enjoyable activities through local initiatives. An audience-and-panel discussion will focus on implications for the development of attractive and feasible activity opportunities for older people. **Keywords:** Activity; Promotion; Urban; Rural; Longitudinal Data; Accelerometry; Qualitative.

EXERCISE FOR IMPROVING PERFORMANCE IN ALL FUNCTIONING LEVELS: FROM MASTERS ATHLETES TO GERIATRIC CARE RESIDENTS. EGREPA SPECIAL SYMPOSIA

Brach, Michael¹; Netz, Yael²; Hinrichs, Timo³; Suominen, Harri⁴

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Background: Generally, physical exercise is known to be effective in maintaining and improving fitness and health over the life course. Target groups above 60 years of age show broad differences in goals, abilities, and life styles. Therefore, special issues in research arise. These refer to effects of exercise, but also to implementation of exercise programmes. In this symposium, we will exemplarily discuss exercise interventions aiming at athletic performance, at health prevention and at regaining mobility. Beneath physical effects, cognitive effects of physical activity and exercise in different subgroups of older adults and in different settings will be considered. **Acknowledgement:** This symposium is organized by EGREPA, the European Group For Research Into Elderly And Physical Activity. EGREPA is a European partner of ICAPA, the International Coalition Of Aging And Physical Activity. With this arrangement, EGREPA would like to contribute to the success of the ICAPA World Congress On Active Aging.

Improving athletic performance in older adults

Suominen, Harri.

University of Jyväskylä, Finland.

Preserving adequate physical performance is an essential requirement for health and functioning among the ageing population. The greater the reserve capacity in physiological components such as muscle strength, speed, and endurance, the greater is the potential for elderly people to prolong an active and independent life. Master athletes with outstanding physical capacity and optimized living habits provide us with a human model of successful ageing, where age-related physiological changes are less influenced by factors such as sedentary lifestyle and associated chronic diseases. Although elite athletes continue to represent a small proportion of their age cohort, they offer a barometer of what is possible

in physical health and ageing. The plasticity of performance is preserved in later life thus making it possible to modify the age-associated decline in the different aspects of fitness and functioning. Our recent study in master sprinters showed that participating in a periodized strength training programme, in which heavy-resistance exercises were combined with explosive type of weight training and plyometric exercises, induced further improvement in maximal, explosive and sport-specific force production, hypertrophy of type II muscles fibres, as well as improvement in cortical bone thickness and mass distribution of the tibia shaft. Although health complications may occur during sports and the occurrence of severe injuries may end the athletic career, there seems to be no such health-related reasons as to why those who have good training background and feel healthy should not participate in master athletics. Modified power types of exercises could also be recommended as part of overall physical training for less active persons. If, before the onset of mobility impairment, older adults could switch their physical activity toward the type of training practiced by master athletes, they would have considerable potential to improving their musculoskeletal function and, thereby, reducing the risk of mobility impairments, falls and fractures with ageing.

Exercise programmes for community-dwelling seniors with impairments: Making use of the primary care setting

Hinrichs, Timo.

University of Bochum, Germany.

Community-dwelling older adults who are chronically ill or mobility-restricted are at high risk for physical deconditioning and consequently, for losing their independence. Even in this target group, exercise programmes can be applied safely and effectively to improve physical functioning. Present guidelines recommend multidimensional exercise (including training of endurance, strength, balance, and flexibility) integrating preventive and therapeutic aspects. Concerning the optimal setting of an exercise programme for the target group, there are some issues to be considered: group exercise fosters social contacts, whereas home-based exercise does not require special facilities, costly devices or transport. Under a public health perspective, the access to home-based exercise therefore seems to be easier. In general, mobility-restricted elderly are difficult to reach for exercise interventions as many of them rarely leave their homes. Additionally, their own perception of limited health is a major barrier to exercise. One of the few persons who have regular access to the target group is the general practitioner (GP). GPs often have established long-lasting and trustful relationships with their older patients. They know their medical history and are able to judge their ability to perform certain exercises. However, there are various reasons why GPs do not counsel patients on physical activity (e.g., time constraints, lack of formal training in physical activity counselling, lack of educational resources). In summary, the GP's practice seems to offer the ideal venue for recruiting and supporting patients to perform an exercise programme, but demands on GPs should be minimised, e.g., by including additional personnel into the counselling process (e.g., trained nurses, health educators or exercise therapists). These health care team members should be trained to apply strategies fostering behavioural change and to adapt exercise programmes to individual needs and constraints.

Offering strength training to elderly with dementia and their family member carers: A block randomized "placebo" controlled trial

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Background: After a new exercise programme had proved feasible in residential care settings, we offered it to patients with dementia together with their family member carers, who as a general rule belong to the elderly target group themselves. The present two arms 3 phase multicentre block randomised “placebo” controlled trial aims at feasibility on multiple levels and at effects. **Methods:** Local service providers and dementia service centres were approached for hosting exercise groups. Instructors with professional background either in work with the elderly or in sports were trained. Intervention groups performed the exercise programme for a 12 week learning and a 12 week training phase. Control groups performed a 12 week placebo programme (general social and cognitive activation) and afterwards the interventional design. The exercise programme includes ten resistance exercises, covering muscle groups necessary for everyday movements, carried out in a slow, controlled manner with one or two series, ten repetitions per set, intensity about 80% of the 1 repetition maximum (duration 2x60min/week) over at least 24 weeks in a joint group for both the patient and family carer. Outcome measurements were: Burden Scale for Family Caregivers (BSFC), Functional independence measure plus functional assessment measure (UK FIM+FAM), Mini Mental State Examination (MMSE), Barthel Index & Instrumental Activities of Daily Living (IADL), Timed “up and go”, Hand grip force, Chair stand test, Shoulder flexibility, Hand-eye coordination test, Daily movement (questionnaire and accelerometer). **Results:** Regarding feasibility and response, in total 39 agencies welfare, community, churches and sport clubs took part; implementing 43 groups with 320 participants were reached. Most of the participating pairs and instructors reported positive experiences and continued after the end of the study. 16 groups received credit as low threshold choice for informal dementia care, which ensures sustainable financing. Regarding effects, the changes were small, as expected. It was not possible to receive any significant difference between control and experimental group. **Discussion:** In this field study, results from the literature could not be confirmed using standardized tests. This does not accord individual reports. Aspects of test suitability and the “placebo” programme are discussed. This study was funded by the Ministry of Work, Health and Social Affairs of the state North-Rhine Westphalia (Germany), 24.17.01-62-V42A-3372.

Aerobic fitness and multidomain cognitive function in advanced age

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Background and Aim: The relationship between physical fitness and cognitive function is well-evidenced; however, studies generally assess this relationship by measuring only one or two specific cognitive tasks, and the age of participants in these studies does not extend beyond a mean age of 70 years. In addition, cognitive decline and cardiac failure frequently coexist in the elderly. Cerebral hypoperfusion and cardioembolism have been advocated as pathophysiological links. This presentation will describe the relationship between physical fitness and multidomain cognitive function in two populations – subjects older than those previously reported and cardiac patients. **Methods:** Study I included 38 individuals, aged 65.3 to 85.3 years living in a retirement center, and study II – 50 individuals, coronary heart disease patients, aged 60.5 to 94.3 years, who participated in a cardiac rehabilitation program for at least one year. Participants performed a graded, progressive, maximal exercise test and based on a median score of peak VO₂ (Study I) or on official age and gender norms of peak VO₂ (Study II), participants were divided into low-fitness and high-fitness groups. Cognitive function was assessed by means of a computerized neuropsychological battery. **Results:** In study I, the high-fitness group achieved significantly better scores on attention

($U = 102$, $p = 0.04$), and on the global cognitive score ($U = 97$, $p = 0.04$), and a significant correlation was demonstrated between peak VO_2 and attention, executive function, and global cognitive score (r 's = .37, .39, .38 respectively). Better scores on attention ($t = 2.45$, $p = 0.02$) and on the global score ($t = 2.14$, $p = 0.04$) were also observed in the high-fitness group than in the low-fitness group among the cardiac patients in the second study. In that study the differences on executive function scores were marginally significant ($t = 1.84$, $p = 0.07$) in favor of the high-fitness group. In both studies, the trend for superior cognitive scores in the high-fitness compared to the low-fitness groups was unequivocal in all sub-tests, both in terms of accuracy and reaction time. **Conclusion:** Maintenance of higher levels of cardiovascular fitness may help protect against cognitive deterioration, mainly in attention and in global cognitive functioning, at an advanced age and also specifically in cardiac patients. An adequately powered randomized controlled trial should be performed to further evaluate this hypothesis.

Oral Presentations

MEASUREMENT AND EFFECT OF ACTIVE LIFESTYLES

Physical Activity variation in the elderly: Influence of time of year and weather

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Background: Sedentary behaviour is related to several chronic diseases and is among the top three modifiable risk factors for premature mortality, cardiovascular disease and several other chronic diseases. Despite these risks, results from studies show that a high percentage of people are inactive, and that the weather variables may be a barrier to participation in physical activity (PA), especially in the elderly. **Purpose:** This study aims to describe daily life PA, throughout the year, using accelerometers, in a sample of elderly individuals. We also aim to examine changes in PA and in accomplishments of PA recommendations, as well as to explore the effects of weather on PA. **Methods:** Participants, 202 men and women (mean age 73.63 ± 9.48 years, BMI 26.77 ± 0.08 kg/m²), wore an accelerometer (ActiGraph GT1M, ActiGraph, Pensacola, Fla.) and were monitored for 4- to 7 days. Periods of data collection were defined as T1 (September to December), T2 (January to April), and T3 (May to July). Time spent in different intensities of PA, average daily steps, and weather variables were measured on the monitoring days and analysed to explore the influence of weather on PA and on compliance with the PA recommendations. **Results:** January to April was markedly the period of the year when PA significantly decreases. Women revealed to be more influenced by precipitation, and men by temperature. None of the compliers to the 10,000 steps per day recommendation was influenced by any weather variables. **Conclusions:** Our results show that the time of year when evaluations takes place has influence on data of PA, and confirm that, however weakly, environmental factors may influence elderly individual's will to engage in PA. Therefore, these data could be taken into consideration when defining more adequate interventions and health promotion efforts designed to increase PA in these age groups. **Keywords:** Physical Activity; Environmental Factors; Chronic Diseases; Accelerometers.

Patterns of physical activity in older adults during the baseline phase of the I'DGO TOO street intervention study

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Physical activity levels and self-report activity diary data recorded during the baseline phase of an environment intervention study (I'DGO TOO) were examined for patterns in activity over time and across activity type. The study involved adults aged 64-95 years living at 9 locations across the UK (8 in England, 1 in Scotland). Physical activity was monitored using Actigraph GT1M accelerometers ($n = 50$; 28 female, 22 male), and information on activity type was recorded by participants using activity diaries ($n = 57$). Monitoring periods varied from 1 to 7 days, with activity levels recorded for a total of 311 days. Daily total activity was calculated for each participant, and the average number of min active for each hour of day was calculated for 4 categories of activity intensity (counts per min): (i) sedentary (0-99); (ii) light (100-1040); (iii) moderate (1041-1941); and (iv) vigorous (1040-6999). Daily total activity ranged from 196 to 10366 counts, with a mean of 3384 counts, and standard deviation of 2078 counts. The average number of min active per hour ranged from none during sleeping hours (0100-0600h) to a maximum of 19 min/hr between 1200-1300h. Most activity was in the light category with a maximum of 15 min/hr activity between 1200-1300h. The peak in moderate activity was 2 min/hour, occurring between 1000-1300h. Walking was the type of activity with the highest recorded frequency, followed by going to the shops and sitting outdoors. In each case the activity occurred most frequently in the morning, and least frequently in the evening. Further analysis of the data is underway, including activity bout length and examining the data for variations by activity type, age, gender, and socioeconomic variables. This study provides useful information on levels and patterns of physical activity in older adults living in urban areas in the UK. **Keywords:** Physical Activity; Urban; Intervention; Walking; Accelerometers.

Measuring physical activity in residential care/assisted living residents with the FITBIT motion tracker®

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Few studies have examined physical activity (PA) participation and functional abilities for elders in residential care/assisted living (RC/AL). Moreover, slow gait patterns, common in RC/AL residents, compromise accurate measurement of walking behavior. We tested the Fitbit Motion Tracker® to measure steps/day in this population. Elders enrolled in an ongoing longitudinal study ($n = 82$), Physical Activity and Disability in Residential Care/Assisted Living Residents, completed the Short Physical Performance Battery (SPPB) and grip strength testing, and wore the Fitbit for three days at baseline data collection. Data from subjects with at least two days of Fitbit wear ≥ 8 hours/day ($n = 68$) were used to estimate the association between PA level and physical function. The total sample was 82% female with a mean age of 84.4 (SD = 8.7) years and body mass index (BMI) of 27.3 (SD = 5.6). Mean gait speed for subjects able to complete the 4-meter (m) walk ($n = 66$) was .56 m/sec. In subjects with at least two days of Fitbit wear, mean SPPB score was 6.3 (SD = 2.6) and steps/day were 1412 (SD = 1320; range 23-7613). Steps/day were correlated with handgrip strength ($r = .27$, $p < .05$), total SPPB scores ($r = .52$, $p < .001$) and all SPPB components

(4-m walk, $r = .44$, $p < .001$; repeated chair rise, $r = .46$, $p < .001$; balance, $r = .31$, $p = .011$). Neither age nor BMI was significantly correlated with SPPB score or steps/day. Men had stronger handgrip ($M = 25.1$, $SD = 9.7$) than women ($M = 17.3$, $SD = 3.5$) [$t(10.5) = 2.79$, $p = .018$]. We found no other gender differences. Significant associations in the expected direction were found between Fitbit-recorded steps/day and tests of physical function. The range of 20-7600 steps/day reflects the variability in walking behaviour of physically limited RC/AL residents. The Fitbit detects steps in slower walkers; however RC/AL residents often forgot to wear the device as required. The problem of missing data could be remedied by RC/AL staff overseeing the Fitbit wear schedule. **Keywords:** Physical Activity; Residential Care; Walking; Steps; Fitbit Motion Tracker®.

Healthy lifestyle programme on elderly people health in Arak, Iran

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Background: Increasing life expectancy and decreasing fertility rates, increasing numbers of older people across the world, therefore the aging population as an important public health challenges in the current century, that will be doubly consider in vulnerable group. This study aimed to determine the impact of healthy lifestyle program on health elderly in Arak.

Methods: This is a quasi-experimental study that carried out on 60 elderly in Arak. Samples participated in classes were in nutrition, exercise, sleep hygiene and life skills and personal hygiene for a month and includes four training sessions and followed for three months then information collected includes standard quality of life questionnaire (SF-36) and standard tools to measure daily activities (Katz) in the elderly has been in before and three months after the intervention has been completed and analyzed. **Results:** The average age of elder is 67.61 ± 5.02 years. The distribution of gender the majority were is men (60%). In terms of quality of life indicators in the before educational intervention (13.3%) in poor (30%), medium (41.7%) and good (15%) were also high. After intervention the majority of samples in the well (38.3%) and higher were (45%). The significant difference in the before and after the educational intervention there was a ($p < 0/001$). Moreover the activities of daily living in elderly Katz before and after training, there was a significant difference ($p < 0/001$).

Conclusion: Comparison of quality of life and activities of daily living in older adults before and after the intervention showed continuing education is fruitful various classes and training necessary for this groups that seem neglected to be essential. Results of this study to develop appropriate educational strategies on healthy lifestyle in support of the elderly. **Keywords:** Life Expectancy; Quality of Life; Daily Activities; Intervention, Training.

The effect of regular walks on cognition and health aspects in older people with dementia

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Physical activity has proven to be beneficial to reduce the risk of dementia, and to improve physical function, rest-activity rhythm, and mood in cognitive healthy older people. However, what physical activity can do in people who already have a dementia is less known. The aim of the present study is to investigate the effect of regular walks on cognition, rest-activity rhythm, mood, and physical function in older people with dementia. Ambulatory older people with a dementia are random allocated to the experimental or control condition. Participants of the experimental condition walk 30 min a day, 5 days a week, as part of daily

nursing care; in other words, this program is a continuous program. All dependent variables are assessed at baseline, after 6 weeks intervention and subsequently every 3 months. Neuropsychological tests measure cognition, ActiGraphy assess rest-activity circadian rhythm, questionnaires assess mood and physical tests measure physical functioning, i.e. condition, strength, (functional) mobility and balance. The first results of this study will be presented. **Keywords:** Walking; Cognition; Mood; Physical Function; Dementia, ActiGraphy.

Indicators of psychological well-being and their association with objectively measured physical activity in older adults

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Maintaining physical activity (PA) into older age is beneficial, especially for mental health. However, objective measurement is still rare in research. **Methods:** Older adults (n = 240, mean age 78.1yrs) were recruited for Project OPAL through 12 Bristol-based GP practices. Researchers conducted two home visits to collect psychological well-being indicators: the Satisfaction with Life Scale, SF12 (Short-Form general health) and Ageing Well Profile. The latter assesses developmental, physical, mental, and social dimensions of subjective well-being. Physical function and key socio-demographic and health-related data were also recorded. Seven-day accelerometry measured steps per day, min of moderate-to-vigorous PA (MVPA) and sedentary time. Additionally, a log recorded daily trips from home (purpose, destination, and mode of transport). Correlation and regression analyses were used to summarise associations between PA and well-being. **Results:** No significant relationships emerged between time spent sedentary and psychological well-being. Significant univariate relationships (all $p < .05$) were observed between: steps per day and the SF12 ($r = .44$) and life satisfaction ($r = .15$), MVPA and the SF12 ($r = .47$), and trips out and the SF12 ($r = .30$) and life satisfaction ($r = .15$). Consistent logical and significant associations were seen between subjective well-being dimensions and steps per day, MVPA, and trip frequency (r range .14-.46). These relationships were largely unaffected when adjusted for age, gender, and educational attainment. However, they were substantially reduced when physical function was added. PA and function explained 28% of the variance in SF12 scores, and 18% of subjective wellbeing. Older adults who are active and make frequent trips from home are more likely to experience higher levels of well-being. However, this relationship is influenced by level of physical function. Amount of sedentary time appears to be unrelated to psychological well-being. **Keywords:** Mental Health; Wellbeing; Physical Activity; Sedentary Time; Accelerometers.

The adverse health outcomes and predictors in community-dwelling older adults of different frailty levels

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Background and Purpose: Frailty syndrome with declined physiologic reserve capacities will make older adults (OAs) highly vulnerable to adverse health outcomes (AHOs), such as hospitalization and mortality. Finding predictors may help to prevent or defer those AHOs. The purposes of the study (1) To examine and compare the occurrence of the AHOs in different levels of frailty for 2 years periods; (2) To determine and compare the independent

factors associated with AHOs 2-year later in different levels of frailty. **Method:** A convenient sample of 350 OAs, aged 65 years and older, living in the community participated in this study. The baseline evaluation included demographic and health status, functional tests, mental and depressive status, and 5 phenotypes of frailty. The subjects will be followed with annual examinations and finally, medical records check for AHOs. Cox proportional hazard model and logistic regression were applied in the analyses. **Results:** Of the 350 enrolled, 104 of whom were "non-frail," 192 were "pre-frail," and 53 were "frail." At baseline, the three groups were significantly different in age, height, weight, comorbidity, GDS, MMSE, and all functional tests. After adjustment, the frail OAs had significantly higher hazard ratios in emergency visit, higher GDS scores, and worse 6 min. walk test 2-year later compared with the other groups. Different factors may predict different AHOs in the 3 levels frailty OAs respectively. **Conclusion:** Frail OAs had higher rates of AHOs. No regular exercise, higher GDS score, worse Timed up and Go test and 30 sec sit-to-stand test at baseline predict many AHOs. **Keywords:** Demographics; Health Status; Frailty Syndrome; Exercise.

PHYSICAL ACTIVITY SURVEYS

Invited lecture: Interactions between individual, social, behavioural and environmental influences on physical activity

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Background: Progress with effective physical activity promotion has suffered from a focus on individual-level characteristics and behaviours. However the physical activity behaviours of older people are likely to vary according to a wide range of factors. **Objective:** To assess physical activity levels objectively using accelerometers in community dwelling over 65s and to examine associations with health, social, environmental, and psychological factors. **Participants:** A cross sectional survey was undertaken in primary care with random sampling of over 65s in four strata: young-old (65-80 years); old-old (over 80 years), more affluent; less affluent. Main outcome measures: Accelerometry counts of activity per day. Associations between activity and psychological factors (attitudes and beliefs), the physical environment, health, wellbeing and demographic variables were examined with multiple regression analysis and multilevel modelling. **Results:** 547 older people (mean (SD) age 79(8) years, 54% female) were analysed representing 94% of those surveyed. Accelerometry counts were highest in the affluent younger group, followed by the deprived younger group, with lowest levels in the deprived over 80s group. Multiple regression analysis showed that lower age, higher perceived behavioural control, and the physical function subscale of SF-36, and having someone nearby to turn to were all independently associated with higher physical activity levels ($R^2 = 0.32$). In addition, hours of sunshine were independently significantly associated with greater physical activity in a multilevel model. **Conclusions:** Other than age and hours of sunlight, the variables identified are modifiable, and provide a strong basis for the future development of novel multidimensional interventions aimed at increasing activity participation in later life. **Keywords:** Physical Activity Levels; Accelerometry; Wellbeing; Demographics; Survey.

Impact of body composition and physical activity in older men and women

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Aging is associated with increases in body fat, decreases in muscle mass and physical activity (PA) which can lead to declines in lower extremity physical function (LEPF). The aim was to determine the relations among PA, adiposity (%Fat), central adiposity (%C-Fat), leg lean mass (LM) and LEPF. Adults ($n = 325,140$ male; 71.7 ± 7.1 yr) were assessed for body composition by DXA, LEPF via 6 min walk (WLK), Timed Up Go (UPGO) and 30s chair rise (CHR) and PA by questionnaire. Males had lower %Fat (32.1 ± 7.6 v 37.2 ± 9.2), lower %C-Fat (32.0 ± 8.2 v 39.1 ± 13.4), greater LM (19.4 ± 2.2 kg v 13.4 ± 1.9 kg) and more PA compared to females (all $p < .01$). Males had 16% greater WLK, 13% faster UPGO and 16% more CHR relative to females (all $p < .001$). Correlation coefficients, controlled for sex, assessed relationships between body composition and LEPF. LEPF was correlated with %Fat (CHR $r = -.18$; UPGO $r = .20$; WLK $r = -.22$), %C-Fat (CHR $r = -.22$; UPGO $r = .17$; WLK $r = -.26$) and LM (CHR $r = -.10$; UPGO $r = -.12$; WLK $r = -.20$) (all $p < .01$). PA was correlated with LEPF (CHR $r = .13$; UPGO $r = -.20$; WLK $r = .25$; all $p < .05$) but not with adiposity or LM (both $p > .05$). Stepwise linear regression determined LM, %C-Fat and PA independently contributed 17.3%, 6.4%, 3.8% to variance in WLK (all $p < .001$). %C-Fat, sex and PA accounted for 8.4%, 3.0%, 1.6% of the variance in CHR, while PA, %Fat and LM contributed 7.1%, 5.2%, 1.8% to UPGO (all $p < .05$). To explore interactions between body composition and PA for LEPF, tertiles were created for LM, %Fat and PA. 2-way ANOVAs were used to explore additive effects on LEPF. In the absence of interactions (all $p > .05$), a main effect for PA existed for LEPF measures (all $p < .05$), a main effect of %Fat existed for WLK ($p = .02$) and UPGO ($p = .06$); whereas, no main effects existed for LM (all $p > .05$). Results indicate that although LM, adiposity and PA influence LEPF performance, the strong consistent relation between PA and LEPF of varying demands highlights the importance of PA to prevent disability. **Keywords:** Physical Activity; Adiposity; Gender; Disability Prevention.

Mental wellbeing and its associations with physical activity, health and aspects of deprived neighbourhoods in Glasgow, UK

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Links between levels of physical activity (PA), area deprivation, health, and subjective wellbeing are well established, but have seldom been examined simultaneously in populations of older people. A range of these aspects are examined in a population of 1631 residents, aged 55 years or more, across 30 deprived neighbourhoods in Glasgow, UK, who were interviewed in 2008 as part of the GoWell Community Health and Wellbeing Survey. Mental wellbeing was measured on the Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS) and total PA was classified into low, medium, or high categories on the basis of responses from the International Physical Activity Questionnaire (IPAQ). A multivariate, two-level model (with residents nested within neighbourhoods) was developed to examine the relative strengths of the associations of mental wellbeing with respondents' (a) level of PA habitually undertaken, (b) level of personal and neighbourhood deprivation, (c) physical and mental ill-health (assessed by the SF-12 physical and mental health component scores) and the experience of long-term illness and recent health conditions, and (d) perceptions of the quality of the home and neighbourhood. Better wellbeing was associated with being physically active, being personally less income-deprived, and having more positive perceptions of the home and neighbourhood. However, physical and mental ill-health were strongly associated with lower wellbeing scores, particularly in comparison with younger people living in the same neighbourhoods. There were also otherwise-unexplained large neighbourhood-wide

differences in wellbeing scores. The implications and limitations for developing physical activity-based interventions as part of the policy to raise levels of wellbeing in Scotland for older people in these environments are considered. **Keywords:** Physical Activity; Mental Wellbeing; Interventions.

Is there a role for physical activity in preventing cognitive decline?

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Background/aims: Exercise plays an important role in maintaining cardiovascular health and optimal cognitive performance. We aimed to examine the association between physical activity and cognitive decline in midlife. **Methods:** Participants were 1414 men and women from British 1946 birth cohort. Physical activity was self-reported at 36 and 43 years, assessing prospectively the participation in sports and recreational activities. Cognitive function (verbal memory and visual search speed) was measured at both 43 and 63 years. Multiple linear regressions were used to examine the associations between physical activity and cognitive performance at baseline and with 20 years cognitive decline, while adjusting for sex, father's social class, childhood cognition, education, adult social class, and depression. **Results:** The most active levels of physical activity at both 36 and 43 years showed a protection in verbal memory performance at age 43 compared to inactive levels (fully adjusted association). For visual search speed performance at age 43, the most active on that year showed a significant protection after adjusting for all covariates 11.05 (95% -1.09 to 21.00); while the association with most active levels at age 36 was explained by the childhood social class. Interestingly the most active levels of physical activity at age 43 showed a significant negative association with the 20 year decline in verbal memory. **Conclusion:** These results suggest that there are long term benefits of high levels of exercise on brain and cognitive performance in midlife, therefore vigorous levels of activity should be promoted until later in life. **Keywords:** Physical Activity; Cognitive Decline; Cardiovascular Health.

Ageing successfully in the Basque country: Impact of leisure patterns on subjective well-being and health's perception

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Strong evidence supports a positive impact of physically active forms of leisure on longevity, autonomy, and cognitive functioning in older people. The issues in current research on this field concern matters of intensity and extensity ("dose"). Nevertheless, policy makers and researchers are increasingly aware that a sense of competence and fulfillment, a satisfactory social life and even moments of savoring and enjoyment are also key elements of a healthy and satisfying later life. A more complex and interdisciplinary approach to leisure is needed to understand its role in the promotion of well-being in older people. This was the overall aim of the research whose results we are presenting. In particular, our study sought to establish whether some kinds of leisure patterns correlate with measures of psychological well-being and self-perceived health. The questionnaire was constructed taking into consideration previously validated instruments both in the fields of Leisure Studies (e.g. the Serious Leisure Inventory and Measure – SLIM) and Psychology (Ryff Scales of Psychological Wellbeing). It was administered to a sample of 800 people between 65 and

74 living in the Basque Country and selected to match the population in terms of gender and place of residence. **Funding:** The research was funded by Ikerbasque (the Basque Science Foundation), the Basque Government and the Regional Government of Bizkaia. **Keywords:** Physical Activity; Wellbeing; Self-Perceived Health; Leisure Patterns.

COGNITION, BALANCE AND GAIT IN AGEING

Walking to the beat: Does music help or hinder older adults' gait and cognition?

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Background: Recent research into older adults' gait and cognition has focused primarily on gait measures for fall-prediction and fall-prevention; few studies have investigated cognitive outcomes. This cross-sectional study explores the impact of regulating gait, so that it becomes more rhythmic, by training participants to walk to a regulated musical beat while counting backwards – a dual task (DT) design. **Methods:** Forty-five healthy older (average 71.7 years) were randomly assigned to three groups ($n = 15$). Each participant completed a single walking (ST) task (15m) and a single counting task (counting backwards 7s). Step-time variability, velocity, correct cognitive responses, and responses per step were recorded. The Music Training (MT) Group was trained to walk to a rhythmical beat, adjusted to each individual's pace. The Music Playing (MP) group heard the music (also adjusted to their pace) but received no explicit training. The No Music (NM) group served as controls and heard no music and received no training. The ST gait and cognitive measures were compared with DT measures before and after intervention training. At baseline all participants completed a battery of cognitive tests to examine relationships between their current cognitive function and their ST and DT performance. **Results:** There was a group effect of task (ST and DT) and time (pre and post-intervention) but only for the MT group. The gait of the MT group steadied significantly after the musical intervention training. In addition EF at baseline, particularly working memory and attention, was strongly associated with gait variability, correct cognitive responses and rhythmicity. **Conclusions:** These findings suggest that underlying cognitive function is an indicator of rhythmic gait. We conclude that rhythmicity training, to maximise gait performance, has the potential to positively benefit older adults' physical and mental well-being. **Keywords:** Cognition; Music Training; Intervention Training; Dual Task.

Cognition and postural sway in active adults

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Introduction Aging is associated with declines in executive cognitive abilities, motor coordination, and balance though mild cardiovascular exercise may improve these in older adults (Kramer et al., 1999). The purpose of this study was to recruit highly active aging adults and normally active controls in order to compare the age-related declines in cognitive function and postural sway. **Methods** Fifty-six subjects were tested for cognitive function and postural sway. Subjects were 35 healthy highly active adults (HA; 55.1 ± 10.8 yr, 21 W) and 21 healthy controls (SC; 56.9 ± 4 yr, 12 W). Subjects were matched in age, years of education and stratified by age: group 1 (age n 54 yr) and group 2 (age c 55 yr). Subjects were either highly active (HA; c 180 min/wk of vigorous exercise) or normally active (SC; n 30 min/wk). The following tests were performed: balance, postural sway; cognitive tests assessing information processing speed (Colorado perceptual speed test, CPST, and Symbol

Search) and motor speed (Digit Symbol-Coding); and aerobic fitness (VO_2max). **Results** HA have superior balance performance, shorter sway distance, lower sway velocity, and lower sway frequencies than the SC. Additionally, analyses showed a significant main effect for age group, indicating balance declines with increased age. No group by age-cohort effects existed, indicating that both groups had the same degree of age-related declines in balance. Analyses of the cognitive data revealed little in terms of significant differences. However, analyses showed that younger HA had higher information processing scores on the CPST than SC; a difference not observed in the older groups. **Conclusion** Engaging in a lifetime of high levels of vigorous physical exercise is associated with superior postural balance. A major challenge to independent living and quality of life in the elderly is the prospect of physical injury from loss of balance; habitual activity being protective in this regard. **Keywords:** Cognition; Postural Sway; Exercise; Quality of Life; Physical Injury.

Effects of physical activity level on behavioural inhibition in aging: Study of performance and N2/P3 complex in a go/no-go task

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Introduction: Physical activity (PA) level and cardiorespiratory fitness (CF) are moderators of age-related cognitive decline, particularly in tasks involving inhibition. A task to tap this function is the Go/NoGo task, which requires a button-press response to Go stimuli, and no response to NoGo stimuli. The ERPs after NoGo stimuli reveal a negativity N2 and a positivity P3 over frontal and frontocentral regions, respectively, which could reflect different subprocesses serving behavioral inhibition. **Aim:** To test if age-related effects on inhibition subprocesses are modulated by PA level. **Methods:** 24 young (Y) and 24 older (O) adults were classified as physically active (A) or sedentary (S), based on measures of past (Historical Leisure Activity Questionnaire) and present (accelerometer - Actigraph GT1M) PA. CF was estimated by $\text{VO}_2\text{ max}$ (Vameval Test for Y, Rockport Walk test for O). EEG from 64 channels was recorded during a visual Go/NoGo task. Reaction Time (RT) and false alarms rate were behavioral measures. **Results:** Preliminary results reveal a significant Age $\times$ PA level interaction ($p < .05$) on RT, with Y participants being faster than O (415 ms vs. 619 ms), and the OA group being faster (574 ms) than the OS group (664 ms). Grand average waveforms from NoGo condition (at Fz and FCz) suggest (i) greater P3 amplitude in Y than O participants, (ii) greater ERPs amplitudes in A than S participants (N2: -3.2, -.7, -.2.5, -.9 μV ; P3: 8.7, 6.1, 6, 3.3 μV ; for YA, YS, OA and OS respectively), (iii) shorter ERPs latencies in Y than O participants, and (iv) shorter P3 latency in OA than OS group (N2: 268, 272, 326, 328 ms; P3: 364, 364, 430, 448 ms; for the YA, YS, OA and OS respectively). **Conclusion:** The time for the decision to execute or to inhibit a response is less delayed in the OA than OS, compared with young adults. Future analyses of the different inhibition-related ERP components will shed light on the underlying neural substrates. **Keywords:** Physical Activity; Cardiorespiratory Fitness; Go/NoGo Task; Inhibition.

Physical exercise, motor performance and cognitive functioning

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Motor learning is important for lifetime motor development, sports, and physical exercise. Optimal motor skill learning plays a critical role in promoting active ageing, physical and

mental well-being, and quality of life. In the past, the interdependence of cognitive functioning, motor behaviour, and exercise has been reported in a wide range of studies. Research on the cognitive aging and motor functioning in late adulthood has proliferated. Researchers have examined motor learning in aging populations and how skill acquisition is related to cognitive functioning, mental and physical well-being. Although research findings suggest aging-related decrease in motor functioning and skill learning, some cognitive and motor abilities remain healthy and intact for active lifestyles. A better understanding of the developmental trajectory of cognitive functioning, the benefits of exercise and motor training, and the relationship of all these variables, yields valuable insights into overall health, fall prevention, physical and mental exercise from youth to old age. Thus, the purpose of this paper is to synthesize a large body of literature about the behavioural and neural characteristics of cognitive aging and how motor training contributes to the brain functions and everyday motor skills of older adults. From a lifespan developmental view, this paper proposes an integrative concept of functional development focusing on the dynamics of cognitive functioning, motor performance, and skill acquisition. In this framework, cognitive representations and motor learning potential are closely related and supported by distributed neural systems. Mostly supported by the high level areas of the brain, cognitive control, motor learning, motor performance, exercise are closely related. A broader, more specific and integrative approach is required for geriatric motor behaviour research. Practical implications and future research directions are discussed. **Keywords:** Physical Exercise; Cognition; Mental Exercise; Motor Development.

Effects of cardiovascular and coordination training on cognition and brain functioning

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The importance of physical activity for improvement and preservation of cognitive abilities in old age has repeatedly been examined. It is unclear, however, whether different dimensions of fitness, i.e. physical and motor fitness are differentially associated with cognitive performance and brain activation patterns. Furthermore, studies that investigate effects of different types of interventions and longer-term effects are missing. Besides this, it is well known that genetic predispositions might influence cognitive performance. Thus, we (1) analyzed the relationship between older adults' motor and physical fitness and their cognitive functioning. (2) We performed a 12-month intervention study to investigate effects of cardiovascular and coordination training (control group: relaxation and stretching) on cognition and brain functioning in older adults. (3) We analyzed the effect of COMT polymorphism on the relationship between fitness and cognition. Results revealed (1) that not only physical fitness, but also motor fitness showed a strong association with cognitive functioning. Functional brain imaging data revealed that physical and motor fitness were differentially related to cognitive processes. (2) 12 months of cardiovascular or coordination training improved executive functioning but with differential effects on speed and accuracy. In parallel, neurophysiological results also revealed different changes in brain activity for both interventions in frontal, parietal, and sensorimotor cortical areas. And (3) regression analyses revealed a positive influence of fitness and of the interaction between fitness and COMT genotype on executive functioning, particularly for val/val carriers. Our data suggest that besides cardiovascular training also other types of physical activity improve cognition of older adults. The mechanisms, however, that underlie the performance changes seem to differ depending on the intervention and might be related to genetic polymorphisms. **Keywords:** Cardiovascular Training; Cognition; Physical Activity; Intervention.

Does acute exercise benefit reaction time performance and cognitive control in adults aged 60–70 years?

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Introduction: The effect of an acute bout of exercise has not been widely investigated in the elderly. Moreover, the sustained improvements in reaction time (RT) observed by Joyce et al. (2009) in young adults warrants investigation in this group. This experiment compared the influence of 30 min of acute moderate (mod) exercise on RT performance and cognitive control in young and old adults using a Simon task (ST). **Methods:** Twelve young (23 ± 2 yrs) and 12 old (63 ± 2 yrs) volunteers, performed the ST while cycling (During) at a carefully controlled workload intensity (65% of age-predicted heart-rate max), 5 min (Post1), 35 min (Post2) and 65 min post exercise cessation (Post3). The identical procedure was followed during a control rest session with the exception that during the first time point the volunteer was seated on the cycle ergometer without cycling. Sessions were randomised across volunteers. **Results:** Results revealed that the young group had shorter RT compared to old adults (346 ms vs 436 ms) ($F(1,22) = 18.23, p < .001$). The interaction between condition, time and age was not significant ($F(3,66) = 1.22, p = .30$). However the interaction between condition and time was significant ($F(3,66) = 4.50, p = .019$). Post hoc analysis revealed that for the first block of trials RT was faster during exercise than during rest (379 ms vs 394 ms, $p = .01$). Five min post exercise, volunteers are still as fast as during exercise ($p = .27$), but 35 min after cessation RT performance is back to normal ($p = .005$). **Conclusion:** Present results confirm the cognitive improvement previously observed during mod exercise on young adults, and suggest that this effect is similar in older adults. Results showed a maintained improvement for up to 30 min post exercise (duration of Post1) and not thereafter. Joyce, J., et al. (2009). The time course effect of moderate intensity exercise on response execution and response inhibition. *Brain and Cognition*, 71(1), 14-19. **Keywords:** Reaction Time; Cognition; Cycling; Cognitive Control, Exercise.

Age differences in working memory contributions to motor representation in older adults

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Background. In older adults the body is subject to physical, physiological, and cognitive changes. Representations of the body and its kinematics might therefore be expected to change. It has been posited that by studying motor imagery, it is possible to access the unconscious process of action representation. The purpose of this study was to examine (1) if action representation undergoes different phases, and (2) the influence of mediating factors like working memory performance on motor representations. **Methods.** 40 young adults ($M = 23.8$ years, $SD = 2.59$), and 88 older adults ($M = 73.9$ years, $SD = 8.41$) participated in this experiment. As an index of the action representation system, we measured the imagery ability using the Controllability of Motor Imagery test (CMI) and a mental chronometry test (Timed-Up-and-Go, TUG). As mediating factor visual-spatial working memory was assessed (Corsi-Block-Tapping-Test). **Results.** Age was associated with an increase in time of TUG, and with a decrease in time of the imagined TUG. For all participants, but the 80+-group movement execution time of the TUG-test significantly correlated with movement imagery time ($r = .666 - .891$). We found a high temporal congruence for young adults, but

a decrease in temporal congruence between adulthood and older adults. A similar pattern was found for the recognition (controllability of body schema) and regeneration (ability to transform visual imagery) condition of the CIM-test. The analysis of the meditational effect of working memory on age differences in the motor imagery measures showed that the inclusion of working memory increased the amount of explained variance in the CMI as well as in the TUG. **Discussion.** Action representation changed as indexed by a progressing decrease in performance from adulthood to the senior years on both tasks. The correlation of the visual-spatial working memory performance with the imagery ability is linked to the deterioration of the prefrontal cortex. **Keywords:** Working Memory; Motor Control; Visuospatial Working Memory; Prefrontal Cortex.

CO-LIVING AND SHARING SPACE

Co-living innovative social community around the elderly

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Andago, Spain.

Social life is as important for young people as for elderly but older people often encounter physical and physiological barriers to participate in the society and maintain their relationships while ageing. Their physical status or the lack of means to facilitate this task can lead to a feeling of isolation and loneliness. Technology can be of great help for the independence of the elderly in the near future, being supportive and encouraging older people to socially interact and maintain an active life. Co-LIVING (full title: Co-LIVING: Virtual Collaborative Social Living Community for Elderly) is an AAL2 project aiming to enhance and prolong the independence and active living of the elderly stimulating a close interpersonal and meaningful social interaction. This will therefore contribute positively to their wellbeing, reducing the risk of psychosocial deterioration and societal exclusion. Co-LIVING is based on an innovative Social Community network (SoCo-net), integrating different mobile wireless ICT based services addressing the elderly social interaction context categories of Care & Wellness, Guidance, and Mobility Monitoring. The main core of innovation in Co-LIVING emerges not only from the use of new technologies for the creation of those services but from the development of an innovative elderly social practice-oriented community model called SoCo-net and in which those services will be based on. SoCo-net builds around the aged person a Virtual Social Care Team consisting of people of different ages and roles (relatives, friends, neighbours, care professionals, etc.) that can assist, collaborate and actively communicate with the elderly to improve its daily life in an ad-hoc and informal way through the use of supportive mobile wireless technologies. Co-LIVING project encourages and facilitates the social life of the older people, becoming and maintaining them as active members of the society while ageing. **Keywords:** Social Life; Wellbeing; Independence; Active Living.

Perceptions of older people with dementia, their carers and professionals on exercise and activity when living with dementia: Benefits and barriers

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Research into whether and how exercise and increasing physical activity might benefit people with dementia is slowly growing, exploring diverse outcomes including activity levels, wandering, walking, daily function, cognitive function, depression, well-being, and overall

quality of life. Evidence to date is still limited and predominantly from studies in long-term care. However, 2/3 of people with new-onset dementia live at home and life expectancy after diagnosis averages 4-11 years depending on age. So developing and testing community programmes needs to be a priority. Involvement of family carers is crucial in many aspects of life for people with dementia, but their potential role in targeted specific exercise and activity programmes needs evaluating. The Otago Exercise Programme (OEP) of strength and balance training can reduce falls by over a third but, despite the markedly higher falls risk in dementia, evidence comes from studies that excluded the cognitively impaired. We are developing a study to assess the feasibility and acceptability of introducing OEP to people with mild to moderate dementia and their family carers, alongside providing carers with training to progress exercising and activity at home, and teaching how to get up after a fall. In preparation we are conducting a series of focus groups with people with dementia and their relatives, former carers, exercise instructors and care professionals to explore potential barriers and perceived benefits. This workshop will share participants' perspectives on physical activity, care context, and individual priorities. Understanding these is key to finding successful approaches, but group discussions raised many questions that we hope to explore further with delegates e.g. Why don't GPs refer people with dementia to falls prevention? What extra training do exercise instructors feel they need? Who believes getting active can help if someone has dementia? Do carers see any advantages to themselves? **Keywords:** Dementia; Physical Activity; Otago Exercise Programme; Life Expectancy.

Shared space interventions: Impact on older people's physical activity and quality of life

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Maintaining independent mobility in later life is an important facet of quality of life. The role of the built environment in facilitating physical activity is well recognised. However, longitudinal studies into the effects of changes to the built environment on levels of activity and quality of life outcomes are lacking, especially for older people. Existing studies into the outcomes of Home Zone type interventions have focussed on measurable such as road casualties or traffic speeds, rather than broader behavioural or quality of life outcomes. This paper presents results from a longitudinal study across seven locations in the UK undertaken as part of the I'DGO TOO (Inclusive Design for Getting Outdoors 2) project (see www.idgo.ac.uk). The interventions studied were 'Home Zone' style changes to residential streets, designed to make streets more 'liveable' by removing the dominance of vehicular traffic and creating shared space. The interventions are focused in deprived areas, where the changes followed an inclusive, community led approach. Residents aged 60+ living in intervention streets and in nearby control streets were surveyed in 2008 and, following the implementation of interventions, in 2010 and 2011. Data collected related to perceptions of the environment, activities undertaken, quality of life and self-rated health, and frequency of getting outdoors. Results suggest that while there are positive changes in perceptions of the environment, the number of outdoor activities undertaken and time spent outdoors in 'Home Zone' streets compared to control streets, positive effects on quality of life and health outcomes are less apparent. One potential reason is that a greater time period post implementation is needed for such outcomes to manifest. Understanding the outcomes of changes to the built environment can play an important part in informing the design of streets that will lead to positive outcomes for older people. **Keywords:** Independent Mobility; Quality of Life; Self-Rated Health; Physical Activity.

PHYSICAL ACTIVITY, WELLBEING AND QUALITY OF LIFE

Fit as a fiddle: The impact of AgeUK's wellbeing programme on the health and wellbeing of participant's—Preliminary findings

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As part of a £165 million Big Lottery Fund grant programme encouraging healthy lifestyles and wellbeing (the Wellbeing programme), Age UK has been awarded £15.1 million to deliver the fit as a fiddle portfolio across the nine English regions from 2007 until 2012. fit as a fiddle champions healthy eating, physical activity, and mental wellbeing for older people and comprises of two national projects and 24 regional projects, delivered by over 200 organisations. This paper presents the preliminary findings from the evaluation of the programme – running until the summer of 2012 – examining the impacts of fit as a fiddle on the health and wellbeing of the older people taking part. It focuses specifically on outcomes around physical activity, healthy eating and mental wellbeing and draws on data from a self-completion survey covering a variety of domains, including sociodemographic details, general health, and wellbeing, limiting long-standing illness, daily activities and participation in the programme. The survey is completed three times by each older person, at the start and end of their involvement with the portfolio and then again, three months later. Data are analyzed for changes between the start and end of involvement and are presented with illustrative case studies. Possible implications for policy and practice are outlined. **Keywords:** Wellbeing; Socio-demographics; Physical Activity; Health.

The importance of a supportive environment for older people's outdoor projects in predicting life satisfaction

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A supportive environment can help facilitate participation in outdoor activities, and lead to greater life satisfaction among elderly populations. Using Personal Projects as a framework to understand the activities that are salient to individuals, this paper focuses on the role that a supportive environment can play in the types of outdoor projects undertaken by older people and the subsequent relationship with their life-satisfaction. Personal Projects are the self generated and purpose-oriented activities an individual is doing or planning to do (Little, 1983). The efficacy achieved in the pursuit of these activities has been found to be related to an individual's well-being. Within this the environment can play a greater or lesser supportive role depending on the nature of the project undertaken. It is therefore possible, by examining projects and their environmental dependency to understand the environmental contribution to well-being. Using data from two phases of the I'DGO TOO (Inclusive Design for Getting Outdoors 2) study this paper reports the relationship between measures of Supportiveness of the Natural Environment (SNE) and Life Satisfaction (CASP-19). Supportiveness of the Natural Environment (SNE) scores are calculated based on a personal project questionnaire designed to capture everyday activities that involve being outdoors, related to any aspect of daily life (e.g. home, leisure and community) and undertaken alone or in the company of others. Participants listed out of home projects and rated these according to importance, supportiveness of the environment, and enjoyability. Projects are categorised into four types: Nature-based, Utilitarian, Recreational and People-related for analysis. Overall the results show that an environment supportive of undertaking outdoor personal projects important to

individuals is associated with greater life satisfaction, particularly for nature-related projects.

Keywords: Outdoor Activities; Life-Satisfaction; Wellbeing; Quality of Life.

Exercise and subjective well-being in old adults

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Introduction: The aging process leads to the decline of functional and psychological capacities and consequently of Subjective Well-being. Increasing evidence suggests that physical activity can prevent some psychological aspects in older people. Self-esteem has emerged as a strong indicator of Subjective Well-being and physical self has demonstrated important correlations with self-esteem. Assess of physical self-perceptions in older adults has been little investigated. This study aims to determine the influence of exercise on Subjective Well-being in elderly. **Method:** Participants were physically independent and cognitively healthy elderly. Subjective Well-being, Self-esteem, and Physical Self-perception were evaluated to an exercise and a control group. **Results:** Participants (N = 1475) were mean aged 73.77 years (+ 7,10). After 14 weeks of exercise program, intervention group increased their mean scores for RSES ($p < 0.00$) and for most PSPP-VCR sub-domains (Function, Physical Health, Physical Strength, Sport Competence). Inversely they had lower mean scores for Body ($p < 0.05$). **Conclusion:** Physical exercise has positive benefits on self-esteem and physical self-perceptions associated with functional capacity of elderly. Conversely exercise has low influence on their positive feelings about their own image. **References:** Fox, K. (2000). The effects of exercise on self-perceptions and self-esteem. In *Physical Activity and Psychological Well-Being* (pp. 89-117). London: Routledge. Fox, K. R., Stathi, A., McKenna, J., Davis, M. G. (2007). Physical activity and mental well-being in older people participating in the Better Ageing Project. *European Journal of Applied Physiology*, 100(5), 591-602. **Keywords:** Wellbeing; Exercise; Cognition; Self-Esteem.

Actively participating in leisure activity can contribute to better health-related quality of life (HRQOL) of community dwelling elders in Hong Kong

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Background: Activity theory stresses the positive linkage on activity and quality of life of individuals. This study aims to examine whether the changes in leisure participation over 2 years are associated with changes in HrQOL of community dwelling elders. **Method:** 350 elderly were randomly selected and interviewed through telephone in Elderly Health Centre in 2006 and 2008. HrQOL was measured using SF12. Leisure participation was assessed by participating in eighteen types of activities which were categorized as recreational (RA), cognitive (CA), social (SA) and productive activity (PA). Frequency of leisure participation was measured on a 5-point scale. Regression analysis was used to examine the association baseline and follow-up scores after adjustment for socio-demographic variables. **Results:** Over the 2 years, increase in SA was significantly associated with higher scores of all domain of SF12 i.e. physical functioning ($p < 0.001$, 95%CI 0.89-3.03), role physical ($p < 0.01$, 95%CI 0.36-2.38), body pain ($p < 0.05$, 95%CI 0.26-2.48), general health ($p < 0.01$, 95%CI 0.42-2.32), vitality ($p < 0.05$, 95%CI 0.12-1.86) social functioning ($p < 0.05$, 95%CI 0.08-2.02), role emotional ($p < 0.005$, 95%CI 0.54-2.08), and mental health ($p < 0.05$, 95%CI 0.06-1.29). Moreover, CA was positively associated with physical functioning ($p < 0.05$,

95%CI 0.02-1.20), role physical ($p < 0.05$, 95%CI 0.06-1.90) and general health ($p < 0.05$, 95%CI 0.12-1.85) while RA was positively associated with role physical ($p < 0.05$, 95%CI 0.10-2.58) and mental health ($p < 0.05$, 95%CI 0.003- 1.58). However, participation in PA was not found to have association with any domains. **Conclusion:** Continuing to participate in leisure activity could contribute to better HrQOL. It could promote both the physical and psychosocial benefits for the elders. These benefits not only cultivate the HrQOL at baseline, but also cumulate during the follow-up period. Therefore, leisure activities should be promoted so that more elders could enjoy better quality of life in their old age. **Keywords:** Leisure Activity; Quality of Life; Cognition.

Physical activity and quality of life in aged women

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The purpose of this study was to examine associations of the amount and type of physical activity (PA) with functional fitness (FF), depression, quality of life (QoL) and morbidity in aged women (≥ 65 years-old). The Senior Fitness Test, walking velocity, and static balance were assessed in 357 non institutionalized women (Gran Canaria's PA Study, Spain). Participants were interviewed using validated questionnaires to assess organized and unorganized recreational PA, depression (CES-10D), QoL (EQ-5 D-5 L), and morbidity (National Health Questionnaire). Tertiles of PA amount and 3 categories of PA type (sedentary, unorganized, and organized) were used as outcome measures. Differences among PA tertiles and type categories were examined with ANCOVA, with age and BMI as covariates. Significant differences ($p < 0.05$) between 1st and 3th PA tertiles were found in all FF dimensions ($n = 7$) and CESD-10D's index, EQ-5D's index, perceived health and most morbidity-related dimensions ($n = 7$). Size effect differences between 1st-3th PA tertiles ranged between 10-38% in FF, 9-32% in depression and QoL, and 23-35% in morbidity. When examined differences between 1st-2nd PA tertiles, a reduced number of significant differences (n) and lower size effects (%) were observed in FF ($n = 4$ dimensions, 4-10%) and morbidity ($n = 1$, 19%), whilst the associations remained significant in all measures of depression and QoL (5-25%). Between 2st-3th PA tertiles, only 2 dimensions of FF remained significant and none in depression, QoL and morbidity. Organized vs. unorganized PA type was relevant for better FF, showing no differences for depression, QoL, and morbidity. Most differences associated to organized PA were due to a higher PA level. Results indicate a higher potential from organized compared to unorganized PA for enhancing health, quality of life, and fitness in aged women. The amount of PA is positively associated with health, quality of life, and fitness in aged women. **Keywords:** Physical Activity; Quality of Life; Senior Fitness Test; Walking Velocity; Aged Women.

What does it mean to be getting older for sedentary and active older adults?

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Background: Being physically active throughout life has implications on how well we age. How individuals conceptualise the implications of their active or sedentary lifestyles on the

aging process is poorly understood. This work aims to address this issue and provide insights into how to help inactive older adults to be more active and maintain their quality of life. **Aim:** To consider how an active or sedentary lifestyle influences the lived experience and quality of life of getting older. **Methods:** Participants were older adults (age range 60-80 yrs); 10 master athletes and 10 sedentary adults. Semi-structured interviews were conducted in accordance with the tenets of Interpretative Phenomenological Analysis. **Results:** The concept of ageing and feeling old was markedly different between the two groups. Active older adults defined ageing by functional ability and the amount of energy they had for daily living and independence. They took pride in their capable bodies, but recognised the functional limitations of ageing. Getting slower was prominent in their narratives. Sedentary adults defined ageing by 'brain activity' and maintenance of mental abilities. For them old age started when illness set in and functional ability restricted their activities of daily living, which seem to occur earlier compared to the active adults. Sedentary adults concentrated on puzzles, studying, reading, and engaging in activities that increase mental power, as if to say, the body has given in, the best next option to focus on maintaining mental abilities to avoid getting old. **Conclusion:** The narratives of active and sedentary individuals from this study provides invaluable understanding of the definition of ageing and how older adults set their challenges in this later phase of life. The study outcomes should inform the development of future interventions in sedentary older adults. **Keywords:** Sedentary; Mental Abilities; Cognition; Daily living; Independence.

Brain training through physical exercises for older adults

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Scientific findings give ample evidence, that specific physical exercise can have positive effects on the function and the structure of the brain (1). But not every exercise program has positive effects on the brain; and not all physical exercises have the same effect on the functioning of the brain. In study from the Jacobs University Bremen older adults (65 - 75 years) had been trained in three different exercises programs (2). From this study we can assume: Physical exercises provoke only positive effects on the brain if the exercises are so exertive that they have metabolic effects. Endurance activities and coordination training have positive effects on the brain; but stretching and stress relaxation training have no effects. Coordination training seems to improve the abilities of the visual and steric perception. This kind of training will improve the quality of thinking, and thinking will be more exact. Positive effects on the brain can be assumed as well through muscle training. Taking these findings into consideration the German Gymnastic Federation (DTB) developed in cooperation with the Jacobs University Bremen a training program to be carried out in sport-clubs through specially educated instructors for the target group of aging people. This program includes endurance-, coordination, and dual-tasking training. The presentation will give a short overview on the theoretical background of the effects on the brain through physical exercises at first. Afterwards the practical training program will be outlined. Finally the experiences after one year of implementation will be discussed. **References:** 1. Kramer, A.F./ Erickson 2007. Capitalizing on cortical plasticity: influence of physical activity on cognition and brain function. In: Trends in Cognitive Science 11 (8), 342-348. 2. Voelker-Rehage, C., Godde, B., Staudinger, U.M., 2010 **Keywords:** Brain Training; Physical Exercise; Older Adults; Implementation; Cognition.

Practical Workshops

IMPROVING THE HEALTH AND WELL-BEING OF OLDER PEOPLE THROUGH THE ARTS

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¹The Baring Foundation, UK; ²Art in Hospital, UK; ³Glasgow Life, UK; ⁴Glasgow Arts, UK; ⁵Gardiner Institute, Western Infirmary, UK.

This presentation will highlight recent practice and evaluation in the arts and older people in the context of health and community care from 3 different UK perspectives. Active Ageing is not just about physical activity but also about improving mental health and well-being for older people through creative activities and engagement. The ageing population is increasing and the quality of life for older people is of increasing social and political concern. The presentation will demonstrate through the case studies that access and participation in arts and culture improves health and well-being and quality of life for older people, promoting the arts as a key dimension of active ageing. The 3 Case Studies are: 1: The Baring Foundation The Baring Foundation has committed itself to a five year programme throughout the UK to promote the importance of participatory arts for older people with an emphasis on vulnerable older people. The Foundation has published three reports, including a review of the research evidence of the impact of participatory arts on the lives of older people. 2: Art in Hospital "It is now recognised that the artist's role is crucial in the overall care of patients" Research and evaluation has shown that participation in the arts improves quality of life and affects patient outcomes in rehabilitation and assessment, stroke rehabilitation, dementia and long term care for older people 3: Glasgow Life The research on the health benefits of intensive engagement with creative and cultural activities led by artists is well recognised in the literature on cultural impact. Less recognised is an emerging field of epidemiological research on the health impact of 'general cultural attendance. **Keywords:** Health; Wellbeing; Active Ageing; Community Care; Creative Activities.

EMPOWERMENT OF AGEING PEOPLE COMBINING PROFESSIONAL CARE, SELF-SUPPORT AND SOLIDARITY BETWEEN GENERATIONS AND CULTURES

Witter, Yvonne¹; Kooyman, Michiel²; van der Bent, Edith²; Krull, Imre²

¹Aedes, Netherlands; ²ActiZ, Netherlands.

The Netherlands are confronted with an increasing number of older citizens, often suffering chronic diseases. 76% of the people older than 65 years have one or more chronic disease. These figures predict a growing need for care and special housing. But we have to meet these needs with a decreasing number of younger and fewer caregivers. We have to introduce the benefits of healthy ageing, by empowering people to take care of themselves and others. Solidarity between generations and cultures is our goal. Every citizen has to take responsibility. People, who age in a healthy manner and help others, will lead more valuable lives. This effort is one of the cornerstones of ActiZ' long-term strategy 'Towards autonomy, solidarity, and healthy living'. The OECD study 'Help wanted. Providing and Paying for Long Term Care' 2011. What we aim for is a shake-up of citizens and politicians. A great change is needed in the organisational and financial support of professional care, welfare, and housing of elderly people. Caregivers need to become aware of the fact that their focus needs to be on how to support people in ageing in a healthy manner and taking care of themselves (physically and mentally) also by organising their own network. Cooperation is

the keyword and creates a win-win situation (Tjadens, Colombo: Long term care; valuing care providers, Eurohealth 2011, 17). We want to share our knowledge and field experiences with others. We want to do this by showing a film 'more than forgetting' and discussing its topics. The film is about a family originally from Turkey and the other from Surinam. They live in the Netherlands and take care of their parent with dementia. They deal with taboos, feelings of guilt. It shows intergenerational and intercultural aspects and also the relation between informal and professional care. Furthermore, we would like to give a presentation of the results of an international comparative study of informal and formal care. We want to share and discuss the results. **Keywords:** Dementia; Chronic Disease; Ethnic Minority, Caregiver; Intergenerational and Intercultural Aspects.

TECHNIQUES AND SKILLS FOR EXERCISE DELIVERY TO PEOPLE LIVING WITH DEMENTIA

Hoffmann, Edey.

dementiaCOMPASS, United Kingdom

Confidence in exercise instruction and delivery can impact successful outcomes with people with dementia, their carer, and the exercise instructors themselves. Understanding perceptions and abilities of both the person with dementia and carer can improve an instructor's delivery leading to retention and sustainability, especially in the community. This workshop will encourage participants to discuss some of the perceptions around exercise and dementia before we consider real-life case studies to highlight effective teaching techniques including advice for communicating with people with dementia, and then we will consider environmental adaptations toward a successful exercise experience. Participants will receive handouts describing teaching techniques and worksheets for evaluating recruitment and marketing. **Keywords:** Dementia; Exercise; Communication; Environmental Adaptation; Training of Professionals.

SEMINARS FOR WORKFORCE EXPLORING IMPACT OF DEMENTIA ON INDIVIDUAL & FAMILY USING DRAMA & DVD METHODS

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¹NHS Lothian, UK; ²NHS Health Scotland, UK.

Local partnerships were developed between NHS Health Scotland, Alzheimer Scotland, Scottish Dementia Working Group (independent group of people living with dementia), NHS Boards, Local Authorities and local voluntary sector organisations to develop a participative seminar to explore concept of 'Living well with Dementia' at a local level and to launch a new DVD resource. Six regional seminars took place during 2011/12, reaching an audience of over 420 people including a specialist seminar for deaf community. Workshop will describe the process of developing the seminars and the use of the innovative drama 'Seeing Auntie'. It will explore use of drama and DVD to raise awareness with health and social care workforce about the impact of diagnosis and living with dementia on individual and family. The drama also highlights the importance of physical activity for the person with dementia and encourages promotion of physical activity in variety of care settings. During the workshop: 1) Presentation of the drama will take place and participants will have chance to experience this powerful medium and exploration of the subject matter; 2) Presentation on process and evaluation of six seminars in number of settings across Scotland including community and voluntary staff and NHS acute setting; 3) Workshop will conclude with

facilitated discussion on use of this drama production in training and awareness rising on dementia and promotion of physical activity. Evaluation of the seminars has been positive. Comments on seminars include: 'Greater understanding of advantage of early diagnosis and the need for better awareness of dementia issues' "Raised my awareness of the needs of people with dementia" Specific comments on drama 'Seeing Auntie' are: 'Seeing Auntie' was a fantastic way of sharing how dementia affects the whole family" "Thought that the 'Seeing Auntie' theatre production was extremely thought provoking and emotional. Brings it to life!" **Keywords:** Dementia; Alzheimer; Physical Activity; Awareness; DVD.

CHAIR BASED EXERCISE: STILL MEETING NEW PHYSICAL ACTIVITY GUIDELINES

Baker, Cherry

Later Life Training Ltd, UK

Chair-based exercise has been shown to have beneficial effect at maintaining or promoting independence and mobility in older people. However, if possible, seated exercise should be progressed to standing exercise to make it more functional and to improve balance and strength so that the older person can reduce their risk of falls and widen their social reach. In order to ensure that chair-based exercise can still achieve the aim of meeting physical activity guidelines for older people (ie. moderate physical activity, strength and balance work) Later Life Training have ensured that their Chair-based Exercise Leaders course delivers training on exercises that not only meet this evidence base but have been used in published research. The workshop will discuss briefly the evidence base behind the course and then will lead participants through the exercises and the motivational messages that can be given to support adherence.

CHANGING THE WAY WE AGE

Milner, Colin.

ICAA, United States.

Population aging is creating a tidal wave of change within many industries, governments, communities, businesses and families. What impact are these sweeping changes having on the fitness and wellness industry? And, how can you profit from them? By attending this forward-thinking session, you will learn about how the accumulation effect and the latest research in population aging is changing the way we age, driving the global active-aging movement to unprecedented heights. You will also learn what trends are occurring because of these changes, and how they are changing the way we age.

THE RONNIE GARDINER RHYTHM AND MUSIC METHOD: A WAY TO STIMULATE COGNITIVE AND MOTOR FUNCTION IN THE ELDERLY

Pohl, Petra.

Umeå University, Sweden.

Background: The Ronnie Gardiner Rhythm and Music (RGRM) Method has been implemented with health care and rehabilitation since 1993 in Sweden. The method may stimulate neural plasticity through our natural sense of rhythm, and can be used to help people with brain injuries, diseases of the central nervous system, as well as healthy brains in the elderly or children. The RGRM Method uses multisensory input; visual, audio, kinetic, and tactile,

in combination with energy from rhythm, music, and sound/movement codes. The aim is to stimulate cognitive functions like memory, concentration, executive function, endurance, and dual task, as well as motor function like coordination, mobility, balance, and motor skills. It may also improve self-esteem, body image, and social skills. The RGRM Method has successfully been used in groups with stroke, Parkinson's disease, depression, A.D.H.D., dementia, autism, dyslexia and in school with children and learning. This method is an important additive to health care for everyone who enjoys music. **Implementation:** To the sound of cheerful music the leader points at specific schedules that contain, for this method, unique notes shaped as hands and feet in the colours red and blue, symbolizing the right and left side of the body. To each and every note the participants perform a certain movement and use a sound enunciation, in order to activate a multitude of brain structures. The method can be varied in endless ways with different music, speed, schedules, movements, and notes. It can be performed either standing up or sitting down and is practiced with the advantage of a group activity as well as individually. **Conclusion:** Rhythm and music are powerful tools that influence our brain in many positive ways. The Ronnie Gardiner Rhythm and Music Method may enhance cognitive and motor function, as well as well-being and self-esteem, and is found to be fun and challenging. **Keywords:** Cognition; Motor Function; Self-esteem; Parkinson's Disease; Rhythm and Music

FITNESS EQUIPMENT DESIGNED FOR OLDER PEOPLE

Laxåback Gerd; Björkgren, Magnus; Lipsonnen, Anssi; Borg, Frank

Health Sciences Unit, Kokkola University Consortium Chydenius, Finland.

Muscular strength and balance are important factors in determining the fall risk. The Welmed approach to fall prevention strives to address these factors in a systematic way, both in assessing the fall risk, and in fall prevention. The Welmed concept has been developed by the Health Science Unit at the Kokkola University Consortium Chydenius (University of Jyväskylä), and its business partners. Within this concept new tools and models are developed in collaboration with technology companies, service providers, and the public sector. Fall prevention has been one of the targets, and it uses the key procedural idea of an initial assessment followed by a structured intervention followed by a re-assessment. This is in accord with the general philosophy of continuous quality improvement (CQI) where both assessment and intervention methods are continuously reviewed in the light previous experience and by using various sets of quality indicators. On the individual level the re-assessment provides data about the need for further treatment, physical activity prescriptions, or for changes in the rehabilitation goals and methods. Quantitative measures of are of essential importance for the assessment to provide concrete goals for the intervention (such as to increase strength by so and so many percentages), and to motivate the participant to exercise and improve his/her results. In this lecture these quantitative methods are illustrated by strength and balance measurements as part of falls prevention programs.

ACTIVE LIVING THROUGH GERI OLYMPICS: FOR RESIDENTS OF NURSING HOMES—25 YEARS

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Geri Olympics Programs have promoted active living, wellness, and quality of life through competitive sports for seniors residing in nursing homes for 25 years. Each year over 150

nursing home resident athletes gather from across our state to compete in various adapted sports. The program involves resident athlete training and practice as well as being a member of a nursing home team in preparation for competitions. Several of the events have been recommended by therapists as a means of improving motor coordination and pulmonary function. Geri Olympics instills a competitive drive in these athletes that gives them a healthy aspect of life for at any age and at any ability. It gives them a way to become involved with the surrounding communities. Geri Olympics also includes an intergenerational component with the inclusion of children in the program as cheerleaders and supporters for the athletes. Geri Olympics promotes overall wellness, but also provides a way of dealing with non-medical issues such as hopelessness, loneliness, and boredom through team practice, preparation, and competition. Many nursing homes involved in Geri Olympics have purchased trophy cabinets to display athletes' winning trophies and ribbons. Many nursing facilities celebrate their athletes and honour them with a send off committee that cheers as the residents leave for the competition and a welcoming committee that greets them with excitement when they arrive home. Geri Olympics is celebrating its 25 year anniversary this year. From its creation, it has grown to include similar programs in five states and three countries. This presentation is an opportunity to celebrate Geri Olympics Programs and highlight the unique program that is based on best practices of physical activity. Geri Olympics is a program that promotes well-being, quality of life, cognitive functioning, and motivation at any age to participate in active exercise. Participants will learn how to organize a similar program. **Keywords:** Geri Olympics; Wellbeing; Quality of Life; Nursing Homes; Cognitive Functioning.

DEVELOPING REGIONAL/NATIONAL NORMS FOR THE SENIOR FITNESS TEST: ISSUES, GUIDELINES AND SPECIAL CONSIDERATIONS

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Since the development of the Senior Fitness Test (SFT) and its accompanying national normative performance standards for the United States over 10 years ago, there has been considerable interest in how to develop such performance standards in other countries and/or other types of populations. Participants at this workshop will learn (1) unique qualities and uses of the SFT, (2) differences between normative and criterion-referenced standards, (3) procedures for properly administering the SFT, and (4) issues, precautions, and guidelines for developing their own regional/national normative standards in order to assure valid and interpretable outcomes. The SFT was designed to assess the major fitness components associated with independent functioning in older adults across a wide range of ability levels, from the borderline frail to the highly fit. However, the SFT has also been used effectively for younger age groups with various medical conditions. Because of its strong psychometric properties (reliability and validity) and ease of use in both clinical and community settings, the SFT has been widely used throughout the United States and in numerous other countries. Unique features of the SFT are its accompanying normative and criterion standards that can be used in evaluating test results. Normative standards make it possible for people to compare their scores to others their same age and sex. Criterion standards, recently developed for the SFT, indicate for each test item the recommended cut-point score associated with the fitness level needed for performing the kinds of activities required for independent functioning well into later life (aged 90+). These standards provide instructors/practitioners valuable information for evaluating and motivating individuals, for setting goals, and for program planning and outcomes assessment.

Meet-the-Expert Sessions

PLANNING TO LIVE

Barrett, Hazel.

Four Seasons Health Care, United Kingdom

The Dementia Care Team within FSHC have incorporated Person Centred Care Planning into the PEARL Specialised Dementia Care Criteria for the homes embarking on the project and in doing so are challenging staff to write care plans to which allow residents to Live their lives as well as meeting their care needs. Within a workshop, I propose to look at the ways in which we are supporting staff to be more Person Centred when care planning. This includes the assessment process: Gathering information at the pre admission stage, through the first 24hrs following admission and then ongoing assessment. Staff are taught to look at residents views, preferences, likes, dislikes, rituals and routines at all stages of assessment and these can then be incorporated into long term care plans. We also utilise the Pool Activity Level Instrument (Lackie Pool, 2007) in the assessment process, challenging staff to look at life story information and levels of resident's ability in being active in their own care. The language used in care plans can have a great impact on how staff see the resident, and within FSHC we encourage staff not to use labels or prescriptive phrasing. This includes losing words and phrases such as; aggressive, wandering, settled day etc. We are looking at other formats to allow staff to formulate care plans and one of these is looking at all needs/ interventions as activities and including the following areas in each care plan, therefore planning to LIVE: Led Activities- Individualised Activities- Vocational Activities- Every Day Activities. We actively promote PEARL, Positively Enriching And Enhancing Residents Lives, and strive to support staff in care planning effectively to allow our residents to actively LIVE well with Dementia in our homes. **Keywords:** Dementia; Care Plan; Training of Professionals; Residential Setting.

GROUP CREATIVE ACTIVITIES: POETRY AND IMPROVISED DRAMA FOR THOSE LIVING WITH DEMENTIA

Killick, John.

Consultant, United Kingdom

Introduction: People with dementia need stimulation and imaginative activity; without these boredom and depression may cut them off from society. Creating poems in groups is one of the ways to supply what is lacking; collaborating in improvised drama exercises and sketches is another. **Aims and Objectives:** to give participants the experience of both techniques so that they understand both the principles behind them and the steps to be taken to organize them successfully. **Methods:** The group will take part in sample sessions so that they appreciate what is involved, and they will also be provided with written instructions to act as an aide memoire for reproducing the techniques. **Results:** Participants will have the capacity to mount similar initiatives in their work-places and thus enhance a sense of agency in people with dementia coupled with group bonding and relationship-building. **Keywords:** Dementia; Creative Activities; Drama Exercises; Sketches.

MOTIVATE ME: ENCOURAGING UPTAKE AND ADHERENCE TO EXERCISE

Tenn, Trish; Hanna, Simon

Later Life Training Ltd, UK

The Motivate Me (MMe) course, run by Later Life Training Ltd, is designed to provide both theoretical perspectives and practical applications on motivating older people to start and maintain regular physical activity. Motivate Me is an evidence based one day programme that examines in particular the underpinning knowledge of behaviour change. There are a number of models that are used to describe how humans behave and change their behaviour. They help in that they simplify ideas and give us a framework for thinking about ways in which we can operate. In particular, this session will help answer any questions you have about the conversation you want to have with an older person on their barriers, motivators, and beliefs.

NUGGETS OF KNOWLEDGE FROM THOSE WHO REALLY UNDERSTAND: DEVELOPMENT OF “COPING WITH DEMENTIA” AND “LIVING WELL WITH DEMENTIA”—A PARTNERSHIP APPROACH

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¹NHS Health Scotland, UK; ²Alzheimer Scotland, UK; ³Scottish Dementia Working Group, UK.

Approximately 84,000 people have dementia in Scotland in 2012. This number is expected to rise to 164,000 by 2036. Key to the support of people with dementia is the availability of high quality information. NICE guidelines recommend that information is tailored to the needs of the individual, culturally appropriate and accessible. Scotland's National Dementia Strategy (2010) also highlights the importance of information in improving understanding of the benefits of early diagnosis. NHS Health Scotland, in partnership with Alzheimer Scotland and Scottish Dementia Working Group, has produced two DVDs: Coping with dementia and Living well with dementia. They use the voices of people with dementia and carers to: share experience around how to 'live well' after diagnosis, providing practical advice on coping with its effects; and suggest where to go for further support. This session will be able to share experiences on involving older people with Dementia in support packages and dissemination. **Keywords:** Dementia; Alzheimers; Quality of Life; Carers; DVD.

LIFE STORY WORK IN DEMENTIA: A SERVICE USER'S EXPERIENCE—“MY LIFE, LIVING WITH DISABILITY AND ALZHEIMER'S”

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¹Service User, UK; ²NHS Greater Glasgow and Clyde, UK.

Life story work is being increasingly used within dementia services to foster person centred reminiscence and active engagement in the disease process. Despite this, there is a lack of freely available, detailed examples of life story work for staff and patients to draw upon for ideas when developing individually tailored life stories. This poster provides extracts from a Life Story Book that a patient developed alongside his family, friends and professionals involved in his care. In addition it provides a detailed description of how the Life Story Book was developed. It also details the positive impact completing the book has had on the patient and his family in terms of the reminiscence it has encouraged and how it has prompted the

patient to consider the type of meaningful activities he wants to engage in and the services that he expects to access. Finally it includes reflections from the professionals involved about the piece of work and its wider implications for adjusting to ageing and degenerative illness. **Keywords:** Dementia, Ageing, Quality of Life, Life Story.

SINGING TO FACILITATE SOCIABILITY AND WELL BEING IN PEOPLE WITH DEMENTIA

Topaz, Rona

Consultant, United Kingdom.

Alzheimer Scotland recently introduced a series of classes called "Singing For The Brain" which involves a singing workshop facilitator leading a series of singing workshops for people suffering from dementia and their carer in a range of well known songs. Lyric sheets and backing tracks are used, although some songs are unaccompanied. My proposal as a freelance singing facilitator is to put together a scratch choir to rehearse perhaps two songs to be performed at the conclusion of the event. **Keywords:** Dementia, Alzheimer, Wellbeing, Quality of Life.

Posters

ASSOCIATIONS OF LEISURE, DOMESTIC, AND WORK-RELATED ACTIVITIES WITH INSOMNIA AMONG TAIWANESE OLDER ADULTS

Chen, Li-Jung¹; Ku, Po-Wen²; Sun, Wen-Jung³

¹National Taiwan University of Physical Education and Sport, Taiwan; ²National Changhua University of Education, Taiwan; ³Taipei City Hospital Zhongxing Branch, Taiwan

Introduction: This cross-sectional study was designed to examine the link between leisure, domestic, and work-related activity and insomnia among older adults in Taiwan. **Methods:** A total of 2295 older adults (65+) in Taiwan participated in this study through face-to-face household interviews in 2009. Physical activity was evaluated with the Physical Activity Scale for the Elderly, comprising 12 components pertaining to leisure, domestic and work-related activity over the past seven days. Scores of leisure and domestic activity were categorized into tertiles: low, moderate and high. Work-related activity was grouped into two levels (low and moderate) due to the small number of working participants. The definition of insomnia used criteria of DSM-IV: participants experienced poor sleep quality, moderate degree or above of daytime dysfunction and difficulty falling asleep at least 30 min after going to bed or difficulty maintaining sleep or early morning awakening at least three times a week over the past month. After adjusting for socio-demographic variables, lifestyle behaviours, health status, Mini-Mental Scale Examination and Geriatric Depression Scale, the multivariate logistic regression model for predicting insomnia was undertaken to compute adjusted odds ratios (AOR) for the three types of physical activities. **Results:** The results showed that 15.7% of older adults were at risk of insomnia. Low level and moderate level of leisure activity were predictive of increased risk of insomnia in older people (AOR: 1.52, 95%CI: 1.20-1.92; AOR: 1.70, 95%CI: 1.34-2.17; reference: high). However, a low level of domestic activity was significantly related to decreased risk of insomnia among older adults (AOR: .73, CI95%: .56-.95; reference: high). **Conclusions:** This study demonstrated that insomnia is prevalent among Taiwanese older adults. It indicated that leisure and domestic

but not work-related activity were significant associated with insomnia in aged population.
Keywords: Insomnia; Socio-Demographics; Activities; Taiwan.

ASSOCIATION OF OBJECTIVELY ASSESSED PHYSICAL ACTIVITY WITH MENTAL WELL-BEING AMONG OLDER ADULTS

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Introduction: This study examined the relations between physical activity assessed by the accelerometer and mental well-being among older adults in Taiwan. **Methods:** A total of 307 older adults (Male/Female = 103/204; age = 74.56±6.10) were interviewed by face-to-face surveys in 12 community centers for the elderly in Taiwan. Mental well-being, comprising 7 dimensions: physical, psychological, independence, learning & growth, material, environmental, and social well-being, was assessed by the Chinese Aging Well Profile. Subscale mean scores were computed for each dimension, ranging between 0 and 5 and the general well-being was calculated based on the total scores of the 7 subscale means. Participants wore tri-axial accelerometers (ActiGraph GT3X+) for 7 days to determine energy expenditures, which were grouped into 3 levels (LPA: 0-499, MPA: 500-999, HPA: 1000+ kcal/week). After adjusting for gender, age, educational attainment, marital status, religious belief, smoking, drinking, BMI and number of chronic diseases, eight multiple linear regression models for predicting general well-being and 7 dimensions of well-being were performed to estimate standardized regression coefficients (β) for physical activity ($\alpha = 0.05$). **Results:** With multivariate adjustment, participants with the highest (HPA: $\beta = 0.32$) or the middle levels of physical activity (MPA: $\beta = 0.16$) possessed elevated levels of general well-being, as compared with a lowest level of activity. Similarly, physical activity was significantly associated with several dimensions of well-being, such as physical (HPA: $\beta = 0.28$, MPA: $\beta = 0.17$), psychological (HPA: $\beta = 0.23$), independence (HPA: $\beta = 0.39$, MPA: $\beta = 0.25$), learning & growth (HPA: $\beta = 0.22$), and social well-being (HPA: $\beta = 0.15$). **Conclusions:** Physical activity may have benefits for improving mental well-being in older adults. Given that the data is cross-sectional, well-designed prospective cohort studies are warranted in the future. **Keywords:** Physical Activity; Wellbeing; Mental Health; Taiwan.

PHYSICAL ACTIVITY AND COGNITIVE FUNCTIONING OF OLDER PEOPLE WITH DEMENTIA

Yau, Sui Yu

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Introduction: Dementia is one of the major health problems among the older people. There is a significant increase in the number of older people diagnosed with dementia worldwide. The situation is reported to affect the healthcare, financial, and policy-making strategies in countries. Physical activity participation is supported to improve the cognitive function among older people with dementia. The purpose of this study is to examine the impact of physical activity on the cognitive functioning among older people with dementia. **Method:** A systematic review on the literature related to "physical activity" and "cognitive functioning" of older people diagnosed with dementia were conducted. Thematic analysis was adopted for data analysis and results were summarized. **Results:** Physical activity was recognized to show positive effect on reducing the risk of cognitive deterioration among dementia people. The risk of cognitive impairment was negatively associated with increasing physical

activity participation. Also, physical activity participation demonstrated improved memory and attention condition. Moreover, older people with intensive regular outdoor physical activity were found to have decreased prevalence of dementia. **Conclusion:** It is concluded that physical activity is a well-documented approach that benefits the cognitive functioning among older people with dementia. Thus, regular physical activity is recommended as a non-pharmacological method to improve the cognitive functioning of the targeted population. **Keywords:** Dementia; Cognitive Function; Physical Activity.

A PROSPECTIVE ASSESSMENT OF THE INTENSITY OF DAILY PHYSICAL ACTIVITY NECESSARY FOR MAINTAINING EXECUTIVE-COGNITIVE FUNCTION

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The present study conducted a two-year prospective assessment to define the intensity of daily physical activity that would have a favorable influence on executive cognitive function. 72 people over the age of 60 participated in this study. They wore an electronic accelerometer throughout their waking hours for three months for assessments that took place during the following year. This recorded the number of steps per day and the duration per day as one of ten intensity levels (0.5, 1 to 9). Executive cognitive function was evaluated with a Task-Switch reaction time (RT) test in the baseline and follow-up year. % RT increase (%SwRT) and correct response rates (%CrctRT) in the switch RT trial were considered to study the year related change (or aging decline) of the executive function. Within this study, multiple regression analyses detected the amount of light physical activity (<3METs) as an independent variable which had a positive correlation with the year related difference of %CrctRT. Moreover, the amount of moderate physical activity (>4METs) was detected as the factor which negatively correlated with the year related difference of %SwRT. The present study suggests that moderate physical activity in daily life contributes to the maintenance of executive function, and more specifically neurocognitive processing speed. **Keywords:** Cognitive Function; Physical Activity; Accelerometer.

CROSS-SECTIONAL RELATIONSHIPS BETWEEN PHYSICAL FITNESS AND PSYCHOLOGICAL HEALTH AND COGNITIVE FUNCTION IN ELDERLY JAPANESE ADULTS

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Maintenance of cognitive function is of great importance for reducing the risk of dementia in elderly people, and it has been argued that maintenance of physical fitness makes an important contribution to the realization of this goal. The present study examined the cross-sectional relationships between physical fitness and psychological health and cognitive function in elderly people. The participants included 57 male (mean age 72 years) and 64 female (mean age 70 years) Japanese people. Inclusion criteria included: aged >60 years, willingness to participate, and an absence of chronic disease and pain. The participants gave written informed consent for participation in this institutionally approved study, after the protocol, stresses, and possible risks had been fully explained. Physical fitness was determined based on preferred and maximal walking speeds and peak handgrip strength. Psychological health and cognitive function were assessed using the Geriatric Depression Scale (GDS), the Philadelphia Geriatric Center Morale Scale (PGC-MS), the Mini Mental

State Examination (MMSE), the Benton Visual Retention Test (BVRT), and the Task-Switch Reaction Time Test (TSRTT). After controlling for age and sex, preferred walking speed was significantly correlated with GDS, PGC-MS, and TSRTT scores. Likewise, significant correlations were observed between maximal walking speed and GDS, PGC-MS, MMSE, and TSRTT scores. However, there were no significant correlations between peak handgrip strength and any variables of psychological health and cognitive function. The results of this study suggest that psychological health and cognitive function are well maintained in elderly individuals with a higher level of physical fitness, especially walking ability. **Keywords:** Fitness; Psychological Health; Cognitive Function; Elderly; Dementia.

A FEASIBILITY STUDY TO PLACE A PHYSIOTHERAPIST IN A RETIREMENT VILLAGE TO IMPACT ON HEALTH, WELL-BEING AND ACTIVITY OF OLDER PEOPLE

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Aim: To determine the potential benefits and cost effectiveness of introducing a physiotherapist into a retirement village to proactively manage residents who are independent, as well as those who are receiving care and require therapeutic input. **Background:** It is known that increasing physical activity in older people can impact positively on health and well-being. From July 2011 a clinical specialist physiotherapist for older adults has been assigned one day per week for one year to a 300+ place retirement village in Sheffield. Approximately 200 residents aged from upwards of 55 live there independently. Village facilities include a small gym and a range of scheduled activities such as dancing or exercise classes. It is not known if placing a physiotherapist in the Village could improve well – being, quality of life and reduce demand on health services. **Design:** All residents received notification that they could make an appointment to see the physiotherapist regarding their general health and well-being, staying fit and independent, and getting fitter. A consent form was signed in order to access their medical records. Assessment, advice and intervention was individualised for each resident. This feasibility study will compare outcome measures pre and post physiotherapist interventions. **Outcome measures:** TURN180, EQ-5D-5L, Physical activity min per week, Number of Falls, Number of hospital admissions, Number of ECP call outs, Number of GP visits. **Findings after 6 months:** Assessment of 61 residents revealed: 80% had impairment of balance or had fallen; Only 1 performed moderate physical activity 150 min per week; 2 were inappropriate and 6 were referred on to other services; The majority had not been well informed about their long term conditions. **Plan:** To complete the intervention period and review outcome measures against aims of project. To establish key messages and potential areas of research. **Keywords:** Physiotherapist; Wellbeing; Activity; Physical Activity; Cost; Quality of Life.

EFFECTS OF PHYSICAL EXERCISE WITH DUAL TASK ON ATTENTIONAL AND CENTRAL PROCESSING SPEED IN PATIENTS WITH ALZHEIMER'S DISEASE

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Patients with Alzheimer's disease have deficits in attention, especially divided attention, used to perform the dual task. Exercise has been used as an alternative non-pharmacological treatment to reduce the disease progression. The purpose of this study was to investigate the effects of an intervention program with dual task on attentional in patients with Alzheimer's disease. The sample included 30 subjects divided in 2 groups, motor intervention group (MIG) and control group (CG). In the MIG, 14 patients (12 women and 2 men aged 78.57 ± 7.13 years) trained for 4 months, 3 times a week. Regarding CG, 16 patients (12 women and 4 men, aged 77.00 ± 6.29 years), kept their routine activities, but did not participate in any physical activity program. To assess attention and central processing speed was used the Symbol Search subtest from the Wechsler Adult Intelligence Scale-III (WAIS-III), before (PRE) and after (POST) training. An U Mann-Whitney and Wilcoxon test were applied ($p < 0.05$) to statistical analysis. The results are showed in median (minimum-maximum): number of right answers to CG at PRE was 7 (3-11), 6 (3-15) at POST and to MIG at PRE was 7 (2-11) and at POST 10 (6-12). Number of wrong answers to CG at PRE was 1 (0-4), 1 (0-4) at POST and to MIG at PRE was 1 (0-3) and at POST 1 (0-2). To the difference between right and wrong answers to CG at PRE was 6 (2-10), 4 (2-15) at POST and to MIG at PRE was 6 (0-10) and at POST 9 (4-12). The statistical analysis showed a significant difference at POST moment between MIG and CG to the number of right answers ($p = 0.004$) and in the difference between wrong and right answers ($p = 0.004$). The Wilcoxon test showed significant difference between PRE and POST to MIG in the number of wrong answers ($p = 0.023$), and in the difference between wrong and right answers ($p = 0.003$). We conclude that the dual task physical exercise intervention was effective to improve attention in elderly patients with Alzheimer's disease. **Keywords:** Alzheimer's; Physical Activity; Attention; Central Processing.

MOBILITY AND SAFETY OF ELDERLY DRIVERS AND PEDESTRIANS: A REVIEW OF INTERVENTIONS AND TRAINING PROGRAMMES

Tournier, Isabelle; Dommès, Aurélie; Cavallo, Viola

IFSTTAR, France

Safe mobility during ageing is essential to the sustained engagement in social and everyday activities. International accident statistics reveal that elderly drivers and pedestrians are an extremely vulnerable road user group. The aim of the European project SaMERU (Safer Mobility for Elderly Road Users) is to examine all aspects of road safety regarding elderly road users and to produce recommendations for actions that could be taken by local authorities to reduce accident risk. Training older road users is one of the safety measures the project is interested in. Specific interventions and training actions have been proposed and/or tested by researchers, national governments, or local authorities, in order to help older road users to cope with the progressive mismatch between their declining abilities and the large demands of driving and road crossing tasks. Among the most efficient actions for improving driver safety is the combining of repeated practice in real or simulated environments with educational intervention. Exercise alone was shown to enhance several physical abilities, as well as perceptual and cognitive skills relevant for driving. Cognitive training reduces and prevents the declining of cognitive performance by targeting specific skills involved in driving. Most of the data in the literature is related to elderly drivers but studies investing elderly pedestrians are growing. Recently, a training programme combining behavioural and educational interventions showed promising results for improving older people's safety during road crossing. Moreover, physical exercises revealed a positive effect on older people's gait and walking speed. In this poster, an overview of interventions and

training programmes improving the mobility and the safety of elderly people on the road will be presented. **Keywords:** Mobility; Safety; Ageing; Exercise.

QUALITY OF LIFE IN OLDER SCOTTISH ADULTS: THE EFFECTS OF PHYSICAL ACTIVITY

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Active Communities (AC) is a pilot project designed to increase uptake of physical activity in Scottish populations most at risk of physical inactivity. These populations include older adults. Consultation with various health and social care organisations was undertaken, so that novel physical activity opportunities could be included with existing provision. As part of a multi-faceted evaluation process, the Medical Outcomes Study short-form health survey (SF-12v2) was used to measure the quality of life (QoL) in 68 participants. The SF-12v2 assesses physical functioning, role-physical, role-emotional, mental health, bodily pain, and general health to provide summary scale information on both physical and mental health-related QoL. Both physical component (PCS) and mental component (MCS) scores were produced. QoL is seen as an important component in health promotion activities because it measures self-perceptions giving insight into intervention effectiveness, while reporting on the reciprocal relationship between social and health conditions. It was a possibility that QoL scores would differ between the novel and the pre-existing classes in the initial testing phase because the length of exposure to regular physical activity would vary between the groups. The SF12v2 was imbedded in a survey instrument which was administered to participants across all AC groups. Out of 68 respondents 37 were older adults (aged 55 and over). Of this 37, 15 respondents attended novel classes while the remaining 12 attended existing classes. Findings from paired sample t-tests reported a significant difference between the QoL scores for the MCS scores ($p < .005$), but no significant difference between the PCS scores ($p > .125$). These findings suggest that longer term exposure to physical activity opportunities has a positive effect on the QoL and mental health of Older Adults. **Keywords:** Quality of Life; Physical Activity; Mental Health

THE SUBJECTIVE RESPONSE OF RESIDENTS AND STAFF TO THE INSTALLATION OF HYDRAULIC GYM EQUIPMENT IN A RESIDENTIAL CARE HOME FOR THE ELDERLY

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A recent local authority initiative aimed at increasing physical activity levels in the elderly has included the installation of hydraulic gym equipment in a number of residential homes. A service evaluation is currently underway in order to assess the impact of this initiative. **Aim:** The aim of this report is to examine the subjective response of staff and residents to the installation of the Technogym Easyline range of equipment into a local authority residential home for the elderly. **Methods:** The Technogym Easyline range is designed for ease of use and employs a hydraulic design which aims to provide individualised and balanced resistance. The residential home in question has installed this equipment, which is currently offered to 23 residents. Classes are held once a week and residents are free to use the equipment ad hoc. Semi-structured interviews were held with a random sample of staff and residents in order to explore the subjective response to this equipment. Open and closed ended questions were used to invite opinion on the suitability of the equipment for

use in the target population and to examine motivations and barriers to use. **Results:** All interviewed residents felt that the equipment was a positive addition to the care home, however just 50% of these had actually used it. Primary benefits cited included "something to do" and "health benefits," while perceived barriers to use included "it's not for me" and "it's too big." All interviewed staff felt that installation of the equipment would have a positive impact on physical activity levels within the care home residents. **Conclusion:** Although all residents felt that installation of the equipment was a positive addition to the care home, there were a number of barriers cited as to its use. Exploration of these barriers will aid in the development of strategies to combat them, so increasing the accessibility of physical activity interventions to target populations. **Keywords:** Hydraulic Gym; Physical Activity; Residential Home; Elderly.

WALKING HABITS AND QUALITY OF LIFE IN A POPULATION-BASED SAMPLE OF 75-YEAR- OLDS: MEDIATING ROLE OF OBJECTIVE CAPACITY AND SELF-REPORT HEALTH STATUS

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Background: Physical activity is suggested to be positively associated with various aspects of quality of life (QoL) and has become a key outcome in interventions in older adults. **Purpose:** To examine the relation between walking habits and QoL in 75-year-olds, and the mediating role of objective physical capacity and self-reported physical and mental health status in a hypothetical relation between walking habits and life satisfaction. **Methods:** A cross-sectional representative population-based sample of 75-year-olds from Gothenburg, Sweden, was examined (n = 698, response rate 61%). Walking habits were assessed as weekly frequency and duration. Life satisfaction was assessed with a single item and health status with the Short Form-36. Functional capacity was assessed with maximal and self-selected gait speed, chair-stand, stair-climbing capacity, grip strength, and one leg stance. **Results:** Walking habits were found to be positively associated with life satisfaction and in women also with self-reported physical health status. Self-reported, but not objective, physical health status mediated the relation between walking habits and life satisfaction in women. **Conclusions:** Self-perceived physical-health status seems to have a role as a mediator in the relation between walking habits and life satisfaction in older women. **Keywords:** Walking; Quality of Life; Mediating; Physical Activity; Mental Health

EFFECT OF FREQUENCY OF KNOWLEDGE OF PERFORMANCE IN ACQUISITION OF THE BASKETBALL FREE THROW IN OLD AGE

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Introduction: Motor learning researchers have been devoted to analyze which factors may affect the acquisition of motor skills, with particular emphasis on feedback and practice. It is known that the Knowledge of Performance (KP) has the function of guiding the learner's attention to critical aspects of the movement pattern. Considering that attention and memory can become a problem in old age. **Objective:** the objective of this study was to investigate the effect of frequency of KP in elderly individuals during the acquisition of the basketball free throw. **Methods:** Sixty active men and women aged 60-69 years of age, divided into

three experimental groups received 100%, 66%, and 33% KP frequency during three practice sessions with 90 attempts. The task was the basketball free throw. Volunteers were asked to conduct tests of retention and transfer 24 hours after the last practice session. During the acquisition phase, the volunteers received KP on the movement pattern on the previous attempt; this information was obtained from a qualitative hierarchical checklist of the free throw (14 items). Sessions were recorded in order to confirm whether volunteers were able to score throughout sessions. **Results:** ANOVA indicated that all individuals showed an improved performance in the retention and transfer tests. But the 66% KP group was superior in both qualitative (movement pattern) and quantitative (score) measurements throughout the trials. **Conclusion:** In conclusion elderly people seem to need an optimal KP frequency supply during the learning process. **Keywords:** Knowledge of Performance; Memory; Motor Skill; Acquisition.

"BUMS OFF SEATS" WALKING INITIATIVE IN FIFE: ITS SOCIAL RETURN ON INVESTMENT

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'Bums off Seats' (BoS) is Fife Council's award winning walking Initiative which provides short, safe, low level local led walks. The programme attracts a high percentage of older participants. Now ten years old, the programme is led by volunteer walk leaders recruited from the local community. BoS provides training and ongoing support to the volunteer leaders who provide a social opportunity aimed at increasing activity levels and building confidence to maintain an active life. Recently, Fife Council undertook a Social Return on Investing (SROI) analysis with the Dunfermline walking group as part of the 'Greenspace is good ... so prove it!', a Big Lottery supported project run by Greenspace Scotland. The aim of going through this was to show the worth of this community project to partners and funders. Dunfermline was chosen as this was the first walking area in Fife and the first to be given grant funding from 'Paths For All', the national charity which promotes walking in Scotland. The process was a retrospective evaluation of the previous two year period in the Dunfermline BoS health walk and involved a series of questionnaires given to carers, participants, and volunteer leaders. Some participants also took part in more in depth case studies. As a result of attending BoS health walks participants claimed they had established a social network and made new friends. Some participants also reported improvements or slower rate of decline in physical health issues. All experienced an increased sense of well-being and many felt more positive and confident in undertaking self motivated activities. Volunteer walk leaders experienced the same changes but to a greater extent and felt they had acquired many new practical skills. The headline of an SROI is the development of a ratio which relates the inputs to the social and economic value of the project, and in the case of the Dunfermline walks, a social return of £5.22 for each £1 invested in the project was identified. **Keywords:** Walking; Physical Health; Wellbeing; Activity; Economic.

THE AUTONOMY IN ACTIVITIES OF DAILY LIVING OF THE ELDERLY IN RESIDENTIAL CARE FACILITIES: PHYSICAL, COGNITIVE AND PSYCHOLOGICAL CORRELATES

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Background: autonomy in basic activities of daily-living (ADLs) is fundamental not only for autonomous elderly but also for institutionalized elderly. In fact, the maintenance of residual autonomy of institutionalized elderly promotes the well-being (Kasser and Ryan, 1999; Blair, 1999.) However, effective programs of maintenance of autonomy in residential care facilities must intervene on the specific individual characteristics of the elderly linked to their autonomy in ADLs. **Aims:** to identify the physical, cognitive and psychological correlates of autonomy in activities of daily living (ADL) of a group of institutionalized elderly. **Methods:** thirty-two elderly from different residential care facilities participated in the study (65,5% women, mean age 85 years old, S.D. 6). The SF-36 Italian version (Apolone e Mosconi, 1999), the Mini-Mental State Examination (Folstein et al., 1975), the Tinetti Test (Tinetti et al., 1986) and the BADL scale (Katz et al., 1920) were administered to the institutionalized elderly. **Results:** (1) The cognitive functioning and psychological variables related to emotive status were not significantly related to ADLs scores and they were excluded by the model. (2) The model fits the data perfectly ($\chi^2 = 11.848$, $p = .45$, CFI = 1.0, TLI = 1.0, RMSEA = .00 and SRMR = .00) and shows that ADLs scores are positively associated with the balance ability ($\beta = .65$, $p < .05$) and the perception of physical functioning ($\beta = -.30$, $p < .05$) of the elderly. No associations were found between ADLs score and gait ability and general perception of health status. **Conclusion:** the results underlines that the activities of daily living of institutionalized elderly seems to be mainly associated with the physical functioning, both real and perceived. Programs of maintenance of autonomy in residential care facilities must integrate a physical and a psychological intervention on the body functioning. **Keywords:** Autonomy; Cognitive Function; Residential care.

RELIGIOSITY AND QUALITY OF LIFE IN OLDER ADULTS: AN INTEGRATIVE LITERATURE REVIEW

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Introduction: Religion can become a strategy to bring meaning to an elderly person's life, significantly enhancing life experience, allowing people to adopt a new attitude, as well as new emotions, learning, maintaining roles in society, and therefore adding all of these to the general quality of life. **Methods:** This integrative literature review is an investigation about the relationship between religiosity and quality of life (QOL) in the elderly. This research took place during the months of May-July 2011 and investigated databases from PubMed, Embase, the Virtual Health Library (Lilacs, Medline, and Scielo), theses and dissertations from the Coordination of Improvement of Higher Education in Brazil (CAPES). **Results:** A total of 94 studies were identified, of which only 15 met our inclusion criteria. The research types were cross-sectional studies (80%), longitudinal studies (6.66%), focal groups (6.66%) and interventional study with no control group (6.66%). In 86.7% of the studies ($n = 13$), a positive association between religion and QOL was found; that is, the greater the religious involvement, the better the QOL in various spheres of life. Participants in these studies were less likely to complain of physical conditions, depression, and anxiety. Religious beliefs and practices helped them to cope with depression by increasing sociability, comfort, and strength through faith and belief in God. Among the 15 studies, two reported no association. **Conclusion:** Additional studies of religious intervention on QOL in aged people are needed to understand better this relationship and establish the causal direction of these associations. **Keywords:** Quality of Life; Religion; Depression; Elderly.

PHYSICAL ACTIVITY IN THE TRANSITIONAL PHASE OF OLD AGE: A PHENOMENOLOGICAL INVESTIGATION

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By 2050 eight million people in Britain will be in their 60's and 12 million will be aged 70+. The growing number of older people has led to increased interest in improving health and wellbeing in later years. Physical activity (PA) can reduce the risk of diseases associated with ageing and maintain quality of life in old age. Currently, activity levels amongst older adults are insufficient to produce health benefits and interventions aimed at increasing PA have not significantly increased participation. One explanation is that interventions fail to recognise the complexity of PA behaviour in older adults. Our study adopted a phenomenological, semi-structured interview approach aimed at giving meaning to the lived experiences of six older adult men and women (aged 65 – 85) participating in a twelve week exercise programme. The setting for our study was a community centre in a rural village in West Yorkshire. Experiences and views of activity leaders responsible for delivering older adult group exercise sessions were also explored. Participants described how physical problems prohibited participation in group exercise. Equally important were emotional issues such as frustration, embarrassment, and anxiety concerning exercise competence and social interaction in the group context. Support from activity leaders in terms of understanding and responding to individual, group, and contextual needs was important in exercise take-up and adherence. Further research exploring older adults' experiences of PA is recommended to ensure instructors are adequately trained to deliver group activities that meet the exercise requirements of adults in the transitional phase of old age. **Keywords:** Physical Activity; Quality of Life; Physical Activity; Wellbeing.

THE ELDERLY HEALTH RELATED QUALITY OF LIFE: A DYNAMIC SYSTEM STUDY

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The quality of life (QOL) is the subjective perception that an individual has of his/her own existence. Health Related Quality of Life (HRQOL) is a multidimensional construct that consists of indicators of general, physical, functional, psychological health and social activity. The ageing process is associated with a decline in HRQOL, a reduction in autonomy and an increase in welfare costs. For these reasons is important evaluate and implement interventions to maintain elderly active and autonomous. This study aims to understand the underlying processes of the various aspects usually included in HRQL, and investigate how these aspects operate, modify, and interact among themselves. This goal can be reached through the dynamic systems theory. Thus a dynamic system model is a set of interconnected elements that affects each other over the course of time, changing the trajectories of the output. This study, which is currently in progress, will start with the construction of a theoretical model that will describe the target variables, their interconnections, role on the output, variability, and time span. The conceptual model will be translated into a non-linear mathematical model, that will be used to simulate data. These data will be compared to data drawn from the literature, and tested by collecting empirical data. Empirical data will include objective measures (i.e. daily walking distance, environmental sensors analysis of engage-

ment in activities of daily living) and subjective perceptions of QOL in groups of elderly people. This study will provide an innovative point of view on the construct of HRQOL in elderly people, with the scope to make a model that represents theoretically plausible variables and relations, and generates trajectories that fit with empirical data. The expected results could have an important role for understanding the processes of change in HRQOL in elderly people, allowing to elaborate effective interventions to reduce loss of autonomy.
Keywords: Quality of Life; Cost; Autonomy; Walking

BUILDING COMMUNITY ENABLEMENT THROUGH COMMUNITY ENGAGEMENT

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Objectives: To engage with communities capturing local and tacit knowledge of older community members to address issues of Mental Health and Wellbeing in Later Life (MHWBLL) raise awareness of the importance of keeping mentally and physically well and promote community cohesion. **Method:** Within Perth & Kinross the Healthy Communities Collaborative established 16 teams comprising older adults and multi-agency professionals working with specific communities addressing health and social issues. Teams chose MHWBLL as the focus of their work. A learning workshop provided knowledge, information, and skills to impact on this topic in their communities, using the Warwick Edinburgh Mental Wellbeing Scale as a baseline to record improvement. **Outcomes/Results:** The MHWBLL report provided a framework of 5 key focus areas; examples of interventions include Physical health- Monthly health promotion messages, encouraging healthy diet, participation in physical activity including indoor Kurling and local exercise groups. Relationships- Providing opportunities to socialise through meetings, kurling and lunch groups with emphasis on reducing isolation. Poverty- Provision of free energy saving light bulbs, signposting to agencies providing fuel efficiency and benefits advice. Participation in meaningful activity- Promoting inclusion, providing opportunities to attend and be involved in organisation of activities in their local communities. Discrimination- raise awareness of issues of discrimination affecting older people providing access to new technology, Wii interactive computer game, Skype and 1:1 mobile phone assistance. **Conclusion:** This explicitly community led approach has reached right into the heart of each unique locality, enabling older people to be more resilient, empowering them to ensure interventions meet the specific needs of themselves and their peers, raising awareness of the importance of keeping physically and mentally well, promoting community enablement. **Keywords:** Mental Health; Physical Health; Wellbeing; Diet

ACTIVE AGING AND ITS INCIDENCE IN THE LEISURE EXPERIENCE

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Active aging is understood as “the process of optimizing opportunities for health, participation, and security in order to improve the quality of life as people” (WHO, 2002:79) sees aging as a positive experience a longer life together with continuing opportunities for health, participation, and security. This concept is based both on the recognition of human rights of older people, as in the United Nations principles of participation, health and safety. In the context of active aging, leisure understood from a humanistic perspective as “satisfactory

experience facilitated by a mental state that allows you to enjoy something that others might not" (Cuenca, 1995:55), appears as an element aging key to a positive experience from three points of view leisure as a fundamental human right, as an integral experience as personal experience that results in different ways or "styles" of experiences. It has been written and reflected on the determinants of active aging since in 2002 the WHO identified six determinants to which there are two additional, cross-cutting (gender and culture). However, a company dubbed "leisure" and in a life cycle stage in which leisure and recreation is of particular importance, little has been done on the role of leisure as a determinant of active aging. Its benefits for humans make this phenomenon in a very important element in the set of determinants that promote healthy aging. Leisure is not only a right of older people, but a personal experience. This involves recognizing that the elderly are not a homogeneous group, not all seniors have the same lifestyle, and consequently not the same style of entertainment.

Keywords: Leisure Experience, Lifestyle, Active Aging

IS DUAL SENSORY LOSS A RISK FACTOR OF COGNITIVE DECLINE?

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Prevalence of hearing, visual and cognitive impairments increased with age and has a negative impact on quality of life of older people and their active aging. Recent investigations reveal a possible association between these two sensorial deficits and cognition. However, links remain unclear. 15.465 seniors are living in Galicia nursing-homes. Many of them have important difficulties on activities of the daily living due to their sensorial and cognitive state. However, not investigations have been developed in Galicia to measure the interaction between dual sensory loss and cognition. **Purpose:** To establish if dual sensory deprivation (vision and hearing) impacts negatively on cognition of older people. **Method:** We evaluated 582 seniors (aged 60 years and over). We tested presenting visual acuity (visual acuity with habitual correction) for distance and near vision, as well as hearing capacity (Liminal Tonal Audiometry; air conduction) and cognition of participants (Mini-Mental State Examination, Spanish validated version). **Results:** Older adults with dual sensory loss (DSL) show poorer cognition than those with single or no sensory impairment. Correlation is present with regard to dual sensory deprivation and severity of cognitive decline. **Conclusion:** First results show that sensorial deprivation (vision and hearing) impacts negatively on cognition of older people. **Keywords:** Sensory Loss; Quality of Life; Active Aging; Cognition.

FIFE'S SEATED EXERCISES FOR THE FRAIL OLDER ADULT COURSE: MEETING LOCAL DEMAND FOR VOCATIONAL TRAINING

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From 1995, a seated exercise course was run jointly between Fife Council Community Services, St Andrews University and NHS Fife. The course was aimed at support staff working with frail older adults in care homes, hospital wards and day centres. This was considered a high quality course, with over 500 attendees over 12 years. But the course only provided a certificate of attendance, and due to professional development needs in the workplace, there was increasing demand for an accredited course to be provided at a foundation level which would enhance vocational skills. To address this, delivery of the course ceased and a new partnership was formed to review and develop the course. This local partnership included

health (NHS Fife), leisure services (Fife Sports and Leisure Trust), a further education college (Adam Smith) and health improvement physical activity specialists (NHS Fife Health Promotion and Fife Council's Active Fife). Using the original course as a basis, a three day course was developed at a foundation level and accredited through the College at level 5 within the Scottish Credit and Qualifications Framework, providing 4 credit points. The aims of the course are to equip support staff working with frail older adults with the skills necessary to deliver safe and effective chair based exercise sessions. The course is practical based and delivered by a physiotherapist and a cardiac rehab/exercise referral fitness instructor, with some theoretical elements being provided by external professionals. At the end of the three days, participants are assessed using a multiple choice questionnaire, and are required to demonstrate a physical activity session using the core exercises covered on the course. The course had now been successfully piloted and evaluated and is in its third year of running. Consideration is now being given as to how it can be made available to be delivered in partnership with other local further education colleges in Scotland. **Keywords:** Care Home; Health; Physical Activity; Physiotherapist; Vocational Training.

MOOD STATES AND FUNCTIONAL CAPACITY IN OVERWEIGHT AND OBESE ELDERLY WOMEN

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Purpose: The purpose of this preliminary study was to determine the impact of mood states on functional capacity according to the BMI and depression score in physically active overweight and obese elderly women. **Methods:** We measured mood states (depression, fatigue, depression plus fatigue score and vigor) and functional capacity (grip strength, flexibility, lower limb muscle strength, up from the chair only once, balance, walking, speed, arm curl and extension in a min, 30-sec chair stand) on 687 physically active overweight [BMI] 27 to 30 kg/m²; N = 463) and obese (BMI > 30 kg/m²; N = 224) women aged 47 to 90 years. Other 176 physically active eutrophic women were considered as control volunteers. **Results:** Age, body mass and BMI have significant impact on mood states and functional capacity regardless of BMI and depression score. Lower or higher scores of depression, depression plus fatigue score, and mainly fatigue represented important predictors of functional capacity in overweight volunteers, but not for obese volunteers. The correlations ranged from -.19 (fatigue with grip strength for total overweight volunteers) to .46 (depression plus fatigue score with walking time for overweight volunteers with lower depression score). The influence of mood states seemed to be independent of other factors (age, body mass and BMI), except for grip strength (body mass in lower depression score) and speed (BMI in lower depression score). The vigor did not influence any functional capacity variable between overweight and obese volunteers. **Conclusion:** Our data showed that mood states score were not important predictors of functional capacity in physically active obese women. However, when analyzed only depression plus fatigue score and fatigue have a negative impact on grip strength, flexibility, walking time, speed and balance, suggesting that depression per se was a significant effect on eutrophic women. **Keywords:** Functional Capacity; Mood State; Overweight; Depression.

AGING IN PLACE THROUGH VOLUNTEER: AN EXAMPLE OF COMMUNITY CARING CONCERN IN TAIWAN

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Aging in place is very important policy that most Aged Societies face the problem of aging population to adopt. Taiwan tries to carry out aging in place policy by implementing the community caring concern centers and hopes to united community volunteers to offer the senior citizens the basic care and prevention. In this case, the senior volunteers are the important human resources of community caring concern centers in Taiwan. Meanwhile, the elder attend the volunteer services in order to allow themselves to integrate themselves into the community. This is the optimal path of aging in place. The purpose of research is to explore the meaning that the senior volunteers attend volunteer service of the community caring concern centres and the experience of aging in place. In-depth interview with on-site observation was conducted during February 2010 to April 2011 in Xigang Town, Tainan. We try to understand how volunteers at community caring concern centres help with the experience of aging in place. The results and discussion: 1. The motivations of senior volunteers attend the volunteer service of the communities include: helping other people, have fun, the social interaction, the sense of value, and help each other and learn the old people lives. 2. The effects of aging people attend the volunteer service for lives include: broaden interpersonal relationship, rise up the sense of happiness, self growth, and have the goal in life. 3. The concepts of the senior volunteers aging in place: live with the family, be familiar with environment, the convenience of life, the medical care and social activities. The senior citizens attend the volunteer service of community caring concern centres to get various positive experience and the values of their old lives. In conclusion, it is the optimal path for the elder to achieve the aging in place through the volunteer service in the local communities. **Keywords:** Aging in Place; Community Caring; Volunteer Service; Community.

RELATIONSHIP BETWEEN LEVEL OF PHYSICAL ACTIVITY AND LATENCY OF P300 AUDITORY IN PATIENTS WITH ALZHEIMER'S DISEASE

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Introduction: Latency of P300 auditory reflects information about time of processing information that is found impaired in patients with some types of dementia, including Alzheimer's Disease (AD). Some studies investigated the relationship between processing information (P300) and physical activity in elderly and young healthy and concluded that the majority of active people showed faster processing information than less active ones. However, this investigation was never done in patients with AD. **Objective:** To analyze possible relationships between level of physical activity and latency of P300 auditory in patients with Alzheimer's Disease. **Methods:** This study was performed in 17 AD patients in mild stage of the disease, mean age = $78,1 \pm 6,8$ years; mean schooling = $5,3 \pm 4,5$ years and mean $19,0 \pm 4,4$ points in the Mini-Mental State Examination. It was applied the Modified Baecke Questionnaire for Older Adults to assess the level of physical activity and every patients had the P300 latency evaluated. It was used a descriptive data analysis and the Pearson's Correlation Test to check possible relationships. **Results:** The elderly with AD had a mean of 2.6 ± 1.4

points in QBMI, which shows low levels of physical activity in this population. The mean P300 latency was 410.6 ± 50 ms. Pearson's Correlation Test showed no significant correlation between variables ($r = -0.2$). **Conclusion:** Although this study did not show statistical correlation between physical activity and Latency of P300 auditory in patients with AD, it is early to extrapolate conclusions because of the limited available tools for assessing level of physical activity in elderly with dementia and the small number of patients evaluated to date. **Acknowledgements:** FAPESP, CNPq. **Keywords:** Alzheimer's; Dementia; Physical Activity; Processing Information; Auditory.

MOTOR LEARNING TRAINING IS THE EFFECTIVE TOOL AGAINST COGNITIVE DECLINE

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Background: many medical reports confirming that people with mild cognitive decline having difficulties to perform the second concurrent cognitive activity during walking (dual task), which effects their independence. In our work we achieved effective action of cognitive-motor training that helps to increase the dual task capacity is equally effective against cognitive decline in elderly. **Methods:** we established special gymnastics, based on complex motor learning training. We preferred exercises with a cognitive effort in the first phase of motor learning during the initial stages of practice. 62 subjects were recruited (28men and 34women) aged 65-85 years who showed initial problems with concentration and memory and found that in addition to this difficulty in performing the dual task. It was proposed to them to perform an hour of activity twice a week for 4 months. **Results:** all participants showed improvement in all tests. The mean values obtained before and after surgery in the following tests: MMSE: 23.8 - 25.9; TMT-A: 78.9 - 60.8; GDS(30): 11.7 - 9.9; Digit Span Forward: 4.2 - 5.1; Rey Auditory Verbal Learning Test(first attempt): 3.8 - 5.6; Rey Auditory Verbal Learning Test(15'): 8.1- 9.9; Token test : 9.1 - 10.5; Tinetti tests: 26.0- 27.5; Time "Get -Up and Go"10.96-9.56; Dual task 1:19.39-15.63; Dual task2:21.3-18.4. **Conclusion:** the practical method of complex motor learning training developed by us proved to be an important tool that helps increase the walking speed during dual task and improve cognitive function in people with mild cognitive decline. **Keywords:** Cognitive Activity; Walking; Motor Training; Auditory.

ACTIVATION-TV IS LIVING WITH ELDERLY AND THEIR RELATIVES IN EVERYDAY LIFE

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Background: The City of Vaasa, Polytechnic of Vaasa, and Polytechnic of Novia have started a two years technology project 1.4.2011 where they are developing electronic services by TV and computer to serve seniors who are living at their own homes or at service homes. **Project targets:** 1) to develop a virtual open source code serve system, which can support and activate seniors who are living at home or service homes and their relatives, 2) to develop employees and students knowhow to produce and utilise virtual service systems to everyday life, 3) to produce services with two languages (Finnish, Swedish), which can maintain senior capabil-

ity, social and physical activities, prevent social exclusion, decrease loneliness and feelings of security, and develop technical knowhow among elderly, and 4) to verify development, use and education of new innovations in social and health sector. **Implementation:** Polytechnics teachers and student as well as employees of Ageing Centre are putting in to practise all programs in Activation-TV. Project is coming up 1.4.11-30.3.2013 and its content areas are following: health, physical exercises, culture and hobbies, as well as advices. Seniors can participate themselves for example in groups where they discuss interesting topics, or watch on video records, or talk with relatives and friends in face-book -application. **Pilot groups:** The project leader choose five senior from homes ($n = 5$) and from service homes ($n = 5$) and three service homes ($n = 24$) to this project as pilot groups to whom this project offer all technical tools. In poster presentation we will show first tests results of pilot groups' expectations, technical skills, and social interactions, state of minds, loneliness and insecurity as well as physical movements. These first tests are carrying out in January-Mars 2012. In poster presentation will also be examples of video-programs which students have designed. **Keywords:** Service Homes; Virtual Service Systems; Physical Exercises.

FUNCTIONAL FITNESS AND IMMUNE SYSTEM IN OLDER WOMEN

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Introduction: Physical activity (PA) on a regular basis can help to prevent diseases and improve functional fitness (FF) in the elderly. Additionally, PA has been associated with improvements on immunological system function. However the benefits of PA and FF on immunology system remain unclear. **Objective:** To analyze the influence of functional fitness level on the number of leukocytes, lymphocytes and neutrophils in older women. **Methods:** Thirty women aged 60 years and over were assigned in two different groups: 1) High Fitness Group (HFG; 67.07 ± 7.59 years, 67.63 ± 13.69 Kg; 1.59 ± 0.05 m and 429.9 ± 19.2 points in a global FF index); and 2) Regular Fitness Group (RFG; 68.80 ± 7.88 years, 69.33 ± 16.32 Kg; 1.55 ± 0.07 m and 213.2 ± 56.9 points in the above mentioned index). The FF level was assessed by taking into account the scores obtained by performing the American Alliance for Health, Physical Education, Recreation and Dance's battery of motor tests, that was specifically designed for older people. The blood cells counting were assessed by applying the fasting blood test, which was performed in a specialized laboratory of analysis. **Results:** Significant differences were observed between groups for FF level for both, global and specific items measured by the battery of tests. ($p < 0.01$). Regarding leukocytes (HFG 5766 ± 1004 vs RFG 5986 ± 1341 mil/mm³), lymphocytes (HFG 1972.8 ± 361 vs RFG 1769.9 ± 587 mil/mm³) and neutrophils (HFG 3313 ± 733.9 vs RFG 3704.8 ± 920.6 mil/mm³), no statistical difference were observed ($p > 0.05$). **Conclusion:** Functional fitness level alone does not seem to affect the number of leukocytes, lymphocytes and neutrophils in older women. Future studies should also involve participants with lower level of functional fitness and include other lifestyle-related factors, which may also influence the immune system, in addition to a larger sample. **Acknowledgements:** State Funding Agency FAPESP (n. 2011/07374-8). **Keywords:** Functional Fitness; Immune System; Physical Activity; Lifestyle.

ATTITUDES TO AGEING, PERCEIVED CONTROL AND PHYSICAL ACTIVITY TO IMPROVE COGNITIVE FUNCTIONING

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Evidence suggests that physical activity interventions can improve cognitive functioning in older adults and potentially delay the onset of dementia. However, inconsistent findings across studies suggest there may be other factors that influence the relationship between physical activity and cognitive improvements or lack thereof. In non exercise related observational and intervention studies, attitudes to ageing, self perceptions of ageing and perceived control have been associated with better cognitive functioning, functional health and longevity. This pilot study investigated whether these psychological variables mediated the effectiveness of an exercise intervention which aimed to improve cognitive functioning. Middle aged sedentary participants were randomly assigned to either strength training or control (yoga or sedentary) programmes. The strength training programme involved carrying out specific exercises at home using resistance bands three times per week for 12 weeks. Attitudes to ageing were assessed using the Attitudes to Ageing Questionnaire (AAQ) and perceived control using the Adult Dispositional Trait Hope Scale. Cognitive functioning outcome measures included the Hopkins Verbal Learning Test-Revised (HVLT-R) and verbal fluency. Results and conclusions are presented here. **Keywords:** Perceived Control; Physical Activity; Cognitive Functioning; Dementia.

EXPLORING LIFELONG LEARNERS ACTIVELY MAKING ART

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Because our society's view of aging have changed as a result of new ideas and investigations confirmed in the medical field, theorists in the social sciences and humanities are exploring a deeper understanding of the link between art making and creativity within the human experience as evidenced in lifelong learning. Results of studies confirm that creating art encourages the growth of new brain cells, stimulates bilateral brain involvement, and offers engagement in new and challenging experiences. With the tidal wave of our Baby-Boomers generation reaching retirement, our culture is focusing on "aging successfully" by maximizing the psychological growth for an individual's entire life. The purpose of this research is to investigate by qualitative interviews, observation and quantitative survey, an examination of the function of painting and drawing in a studio setting, and examine how different facets of perception, or ways of seeing change as a result of that participation, in addition to exploring the health and well-being effects of engaging lifelong learners in the activity of making art. Results are anticipated to find positively engaged lifelong learners creating art within a studio setting, while having a direct impact on emotional vision by revealing a clear vision of ourselves and others, thereby influencing the health and well-being of actively aging adults and the community as a whole. **Keywords:** Art; Creativity; Wellbeing; Health.

QUALITY OF LIFE AND NUTRITIONAL STATUS OF ELDERLY IN PROGRAMS FOR SENIORS

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Objectives: Evaluate the quality of life of the elderly in programs for seniors from three universities located in the cities of Sao Paulo, Sao Caetano do Sul and Mogi das Cruzes, and analyze the influence of possible intervening factors. **Methods:** It was a field, cross-sectional and quantitative-descriptive study, in which 182 elderly of both genders (≥ 60 years) participated. The nutritional status evaluation was done by means of anthropometry, with the measurement of weight, height and waist circumference (WC). To classify the nutritional status, it was used the body mass index (BMI). To evaluate the subjective perception of quality of life, it was used the World Health Organization Quality of Life Questionnaire (WHOQOL- BREF). To assess the level of physical activity, it was used the International Physical Activity Questionnaire (IPAQ), short version. Multiple linear regression analysis was performed among the dependent and the independent variables. In all analysis, it was adopted a significance level of 5%. **Results:** The mean score of the WHOQOL - BREF ranged from, approximately, 57.0 and 77.0 in the questions and domains assessed. The results of multiple linear regression showed that the absence of diseases positively influenced the quality of life in all domains evaluated. In the environmental domain, higher education degree, old age, absence of diseases and residence in Sao Caetano do Sul positively influenced the quality of life of the elderly, in this order of importance. **Conclusion:** The mean score of the WHOQOL - BREF suggests a perception, about the quality of life, reasonable to good, considering that the closer to 100, the better is the quality of life. The factors associated with better quality of life were: higher education degree, old age, absence of diseases and residence in Sao Caetano do Sul, in this order of importance. **Keywords:** Quality of Life; Nutritional Status; Physical Activity; Elderly.

IMPACT OF ADVOCACY, INNOVATIVE SERVICE DELIVERY ON ELDERLY RIGHTS, WELFARE AND SUSTAINABLE LIVELIHOODS IN CAMEROON

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The paper addresses elderly problems on rights, advocacy, Legislation and livelihoods, needing innovative services. It analyzes systems and care for elderly, now eroded due to HIV/Aids effects on young people. Elderly care work indicators; from 2009 through 2010 to 2011, 131 elderly clubs formed, 3,644 families on elder care, 127 volunteers carrying out home-visits, 18 schools helping elderly, 61 elderly committees formed to support work at the grassroots, 34,336 elderly educated on HIV/Aids, 70,149 elderly empowered on their rights, 2,120 elderly issued Identification papers, 1900 elderly registered for elections, elderly rights covered by the media, 85% elderly clubs doing gardening, elderly income increased, elderly trained on agriculture, 632 elderly produced wash powder, elderly health improved project work impact on beneficiaries, 7,627 elderly benefited directly, 70,149 elderly involved in advocacy and 10,514 elderly people benefited indirectly. Work long term benefits: Improved attitudes towards elderly, information flow on elderly rights, elderly continues influence on national policy, government enacting elderly rights' laws, society supporting elderly, elderly project results replicated, increase in elderly clubs, poverty and hunger reduced among elderly, innovative aspects of project work used elderly-driven, rights-based approaches to improve work on elderly rights, elderly and local volunteers collaborating with stakeholders, elderly managing clubs, Accountability and transparency information made available to stakeholders, elderly part of decision-making and -generational links for children and elderly encouraged. Project work Achievements were recorded in advocacy, legislation, rights, welfare, social inclusions and livelihoods. Conclusion: Project work with the elderly

has innovative ideas, with good scope for replication elsewhere. **Keywords:** Welfare; Elderly Rights; Innovative Service; Advocacy.

LIFE SATISFACTION AND SELF-REPORTED DISEASES IN MIDDLE-AGED/ OLDER SUBJECTS ENROLLED AT AN OPEN UNIVERSITY OF THE THIRD AGE

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Background: Life satisfaction is the cognitive evaluation of one's life as a whole. In general, it is strongly affected by poor mental health, mainly depression and anxiety, and chronic illnesses, particularly those that cause disability. This study investigates the relationship between life satisfaction and self-reported diseases in middle-aged/older subjects enrolled at an Open University of the Third Age (UnATI). **Methods:** 299 middle-aged/older subjects (65.2 ± 6.1 years old) of both sexes (71.6% women and 28.6% men), enrolled at the UnATI run in the School of Arts, Sciences and Humanities of the University of São Paulo, were invited to answer a series of questionnaires as follows: sociodemographic and health form, Overall Quality of Life Scale, Satisfaction with Life Domains Scale (SLDS), Mini-mental State Examination and Geriatric Depression Scale. After that, participants were divided in three groups according to the number of self-reported diseases: free of diseases (G1), with one or two diseases (G2) and with three or more diseases (G3). The groups were compared using Kruskal Wallis test. In case of significance, Mann-Whitney test was used to determine the inter-groups differences. Spearman's correlation test was used to assess the association between variables. The level of significance was set at $p \leq 0.05$. **Results:** G1 and G2 had higher life satisfaction than G3 (health and physical status). G3 showed more depression symptoms and higher medication consumption than the other groups. Age was positively associated with the number of diseases and life satisfaction. The number of self-reported diseases was inversely correlated with life satisfaction (overall, health and physical status). **Conclusion:** Middle-aged/older subjects with three or more self-reported diseases have lower degree of life satisfaction and more depression symptoms. In addition, the number of self-reported diseases correlates positively with age and negatively with life satisfaction. **Keywords:** Mental Health; Depression; Life Satisfaction; Quality of Life.

ACTIVE AGING IN MACAU: A CASE STUDY OF A 78 YEAR OLD WOMAN

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Background: Macau is a Special Administrative Region of China and a small city that is well equipped to facilitate active ageing among the elderly people because of its highly developed economies and abundant volunteering civic organizations. Although the Macau population is aging, how the older people live actively has not been studied. **Objective:** This paper explores how elderly people can live actively in Macau. The results of the study will contribute to the development of a model of active aging to enhance health, and identification of factors affecting active participation in social and physical activities among elderly people. **Method:** The data source is a semi-structured interview with a 78 year old woman, who was purposely selected because of her low socioeconomic status yet highly active living, strong and much younger than age physical appearance, and excellent self-rated health. **Findings:** The respondent regularly and frequently participated in different kinds of social activities, including learning, leisure, volunteering and political ones. Consequently, she

acquired meaning of life and some social capital. She also participated in different kinds of physical activities including martial arts and Chinese folk dancing everyday for about an hour a day. To take part in the varieties of social and physical activities, she walked for at least half an hour a day. Although she has two cardiovascular conditions, her self-perceived health was excellent and much improved than a few years ago. **Conclusion:** The Macau elderly people can live an active life by participating regularly and frequently in varieties of social and physical activities which help to maintain good health. The critical factors are a good social welfare system, availability of different volunteer groups and culturally tuned physical activities. **Keywords:** Active Aging; Physical Activity; Social Activity; Welfare.

PRACTICES OF ACTIVE AGEING

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This paper explores different ways of practicing active ageing, through examples from ethnographic fieldwork at two activity centres in Denmark. The social aspect of active ageing is usually mentioned in policy programs (e.g. WHO:2002, EU:2011), but in practice physical activity is the main focus. The elderly should lead physically active lives to prevent diseases and increase quality of life. However, during interviews with active elderly, the author often meets ambiguous stances towards active ageing. Many active elderly identify with active ageing, but others perceive active ageing as a pressure they occasionally wish to escape from. Carsten, 70 years old, goes to the local activity centre every morning to do his exercises. His schedule is always full with activities such as ping-pong, cycling or sailing. Carsten is in many ways an ideal active elderly, but feels socially isolated despite his active life. Outside of activity spheres he only talks to his wife and children. Some informants use activities to get social relations. For others the activity centre is not a social arena. These informants often see the activities as a demand and feel an urge to resist active ageing. There seems to be a tension between: 1. Physical activity as increasing quality of life and wellbeing, and 2. Physical activity as a constant and constraining demand that becomes almost impossible to meet, thereby excluding and alienating elderly who either cannot identify with the focus on physical activity or focuses solely on physical activity while being socially isolated. The paper concludes that the social aspect of active ageing is often overseen in practice, and that this risks leading to a decrease in wellbeing for the active elderly. In addition the paper asks whether policies and new health technologies can facilitate the social aspects of active ageing. Furthermore it is explored how the communities at the activity centres can increase social active ageing. **Keywords:** Active Ageing; Physical Activity; Quality of Life; Wellbeing.

FLOURISHING IN LATER LIFE: LEARNING FROM POSITIVE PSYCHOLOGY

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Over the last ten years the discipline of academic psychology has directed attention toward understanding positive human experiences – how and why people feel good and function well. The importance of ‘positive psychology’ for individuals, families, organisations and the wider community is being recognised by academics, health and social care practitioners, policy makers and politicians. The knowledge we are gaining about subjects like human strengths and virtues, the power of positive emotion, and the experience of flow (also known as optimal human experience) is highly pertinent to the lives of older people, including

those with physical and mental health issues, and individuals living with dementia. This presentation explores some of the implications of what we have already learned for how we can all continue to flourish as we age, and points towards future directions which deserve exploration in this exciting unfolding field. **Keywords:** Psychology; Dementia; Physical Health; Mental Health.

AGING AND PHYSICAL ACTIVITY EFFECTS ON RESPONSE SLOWING

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Introduction: Behavioral slowing is a significant index of aging. Is the slowing caused by the slow speed in information processing, the central and peripheral neural transmission? Or is it caused by the factor of physical activity? These two doubts need to be questioned. This study was designed to examine age and physical activity (PA) effects on the reaction time (RT) and movement time (MT). Specifically, is there interaction existed between age and physical activity in RT and MT? **Methods:** Participants were 72 older adults volunteers, who were aged 65-74 (young older adults), and 75-84 (older adults). Physical Activity Survey for Elderly (PASE), EMG (BIOPAC System MP150, 1000Hz), and Simple RT (SRT) device were administered to measure MT and RT (Premotor RT and motor RT). A 2 (age) X 3 (high/medium/low PA) two-way ANOVA was used to analyze MT, RT, Premotor RT, and motor RT. **Results:** (1) MT: Significant difference was found for age main effect. (2) SRT: No significant differences in main effects of age and PA were found. (3) Premotor RT: No significant differences in main effects of age and PA were found. (4) Motor RT: Significant difference for PA main effect was found, in that premotor RT of low PA group was significantly longer than that medium and high PA groups. **Conclusion:** Evidence of age and PA effects on nerve conduction velocity suggests process-specific slowing in RT. **Keywords:** Ageing; Physical Activity; Reaction Time; Movement Time.

DEVELOPMENT OF THAI YOGA-CHI KUNG NEUROMOTOR COMBINATION EXERCISE FOR ACTIVE AGING

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The American College of Sports Medicine (ACSM) and Complementary and Alternative Medicines (CAM) recommended some form of neuromotor exercise (sometimes called functional fitness training), to increase (or maintain) balance, agility, and coordination such as Tai chi (tai ji), Chi Kung (qigong), and yoga, along with lesser known disciplines such as Rusridadtone (Thai Yoga). Currently, the related studies in Thai elderly people found that required longer learn training in Tai Chi than Chi Kung as a form of movement meditation domain. Most of them also were greater familiar Thai Yoga than Yoga in form of combination between stillness and movement meditation. Therefore, the purpose of this study was to provide multifaceted physical activities involve varying combinations of neuromotor exercise in form of Thai Yoga-Chi Kung combination. The study included a pre-test questionnaire, training programme, and post-test questionnaire. Analysis of the questionnaires revealed that most participants considered Thai Yoga-Chi Kung combination the beneficial therapeutic effects to be the neuromotor skills training. It provided a structured, goal-oriented process

that challenges the patient to synchronize a range of mind and body exercises to a precise holistic intervention and to decrease long term learning. Thai Yoga-Chi Kung combination therefore was the correct quantity and quality for developing active aging and maintaining fitness in Thai adults. **Keywords:** Active Aging; Tai Chi; Yoga; Physical Activity; Neuromotor.

OVERCOMING FEAR OF WATER WITH EXCEL 2000

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Frightened of water as a youngster some older people now want to be “active in the water” with their family, yet, they are too fearful to progress. Excel 2000 has developed a gentle programme of water based activities to address this issue filling this gap in services in an adapted confidence boosting “one to one” programme with the timorous person gaining self assurance. Using a health questionnaire the instructor establishes the physical, mental and neurological condition and targets of the client. Once confidence is assured they walk into the pool together to join the modified aqua class. The instructor introduces the client to a mentor member who overcame their fear and who is now happy and confident with the life enhancing programme. The music plays, activities start using buoyancy aids. I designed and have instructed these sessions for 19 years at my local pool – Splash – part of DC Leisure Company. Excel 2000 also delivers workshops and courses for the training of instructors. An 80 year old lady with COPD went from being terrified of water to walking in water up to her neck, then managed a few strokes without anxiety and is looking forward to swimming with her grand children. A 55 year old man sat fully clothed for months watching the sessions, too fearful to join in. The instructor spent some time gaining his trust. He overcame his fear and went swimming on honeymoon with his bride. A third of my group members were non swimmers when they first attended. The activities in the water have enhanced mobility, been a springboard to more active pursuits and sports for some, a preparation for surgery and recovery after for some, a weekly way of life for others. Social integration has offset loneliness and isolation, new friendships and activities have been welcomed. Excel’s system of “one to one” aquarobics is innovative and really helps by giving people with physical, mental and emotional challenges the chance to overcome their fear of water. **Keywords:** Training of Instructors; Fear of Water; Excel 2000.

THE CHOSEN BRITISH SENIORS’ ATTITUDES TOWARDS THEIR ACTIVE AGEING

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Introduction: As many authorities state human ageing concerns the moral (John Paul II 1999), as well as demographic (Lehr 2006), economic (Getzen 2000), and those issues, which are connected strictly with seniors’ physical efforts aimed at their health promotion (Chodzko-Zajko and others 2005, Kalache 2004). **Method:** The group of highly educated British seniors at the age of 50 and more from both the University College Birmingham, the Aston University, the Woodbroke Quaker Study Centre in Birmingham, and the University of the Third Age in Nottingham were included into the research in 2007 and 2009 as the part of the bigger investigative enterprise embracing some other European third age universities’ students. However, the accent in this presentation has been only put on the data, found solely in the British older respondents, such as the attitudes towards health-related movement, based

on the importance of the value of fitness. While examining the seniors the Scheler value scale constructed by Piotr Brzozowski, and the author's questionnaire of attitudes and behaviour inventory have been used. The statistics for the physical culture values' measured frequency distribution have also been counted. **Results:** The British seniors appreciate physical fitness and attribute to this value the score of 70 points (from the scale points' bracket between 0 and 100) most often, while half of them value fitness at minimally 68 points, although the men treat it slightly higher than the women. Both the British women and men present the positive attitudes towards their participation in health-aimed physical activity. Nevertheless, one can notice in the attitudes showed the higher rank of the cognitive and emotional factors in opposite to the behavioral one. **Conclusion:** Those findings above should incline to seek for answering the question about the more effective way of real supporting the silver generation in active relaxation. **Keywords:** Active Ageing; Demographic; Economic; Health; Fitness.

EFFECT OF FOCUS OF ATTENTION ON MOTOR LEARNING IN OLD AGE

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Introduction: Focus of attention has been presented as a factor which can promote qualitative superior performance and speed up learning while individuals could adopt automatic patterns of control. In the other hand, there are some evidences that, during the learning process, elderly tend to direct attention toward to their body movements in an online movement control mode, which it has been associated with not efficient muscle system activation, and an inhibition of an effective automatic process of control. **Objective:** Thus, the objective of this study was to examine whether the adoption of a focus of attention, internal (IF) and external (EF), could affect the learning process of a motor skill in old age. **Method:** Two groups with 20 individuals between 60 and 75 years old performed darts throwing toward a static target. **Results:** Results showed that although the two groups have improved performance with practice and were able to learn, EF group showed discrete advantage during initials stages of learning. Despite of that, there were also some indicatives that when instructions were repeated during the acquisition, it could have taken EF group off from the automatic control, causing performance decrease. **Conclusion:** Considering that the performance differences found at the beginning of learning did not maintain, particularly, in the retention test, it is not possible to accept the hypothesis that the external focus is favorable in darts throwing learning in old age. **Keywords:** Focus of Attention; Motor Learning; Control.

USING A LIFESTYLE EXERCISE PROGRAM TO IMPROVE FUNCTIONING IN OLDER PEOPLE RECEIVING A RESTORATIVE CARE SERVICE: A PILOT STUDY

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Background: Silver Chain has delivered the Home Independence Program (HIP) and the Personal Enablement Program (PEP) since 2002 and 2003 respectively. Both are restorative home care services and aim to maximise functioning and reduce the need for ongoing services for older people. These programs have been evaluated extensively and have been shown to be effective overall; however the seven individual components that make up HIP

and PEP have not been evaluated independently. My research is interested specifically in the physical activity component of Silver Chain's restorative care programs and maximising its effectiveness in improving client functioning. My previous research has shown traditional exercise programs have not been continued long term by this population and clients stated a preference for participating in exercise that is incorporated into their daily routines and tasks. It was therefore determined that a lifestyle exercise program should be trialled as an alternative. The first step being a pilot study. **Aim:** To test the viability of the Lifestyle and Functional Exercise program (LiFE) as the means to incorporate exercise into the daily living activities of older people receiving a restorative home care service from Silver Chain, and to determine whether it is a viable alternative to the current exercise program used. **Methods:** The LiFE program was trialled by Silver Chain's Independence Care Managers with eight older people receiving HIP or PEP. Data were collected at baseline and 8-weeks (post intervention) to determine whether the program improved client function and if it was appropriate for older home care clients receiving a restorative care service. **Findings:** Data were collected between February and May 2011 and early analyses show significant improvements in a number of measures. **Conclusion:** The LiFE program is viable for this population and can now be trialled in a randomised controlled trial. **Keywords:** Lifestyle; Restorative Care; Physical Activity; Functional Exercise.

WHAT MATTERS? EFFECTS OF DIFFERENT PHYSICAL TRAINING PROGRAMS ON COGNITIVE FUNCTION IN ELDERLY MEN

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There is hopeful evidence that physical activity could be an effective approach to improve the cognitive performance of elderly people (Barnes et al., 2007; Colcombe & Kramer, 2003; Erikson & Kramer, 2009; Etner et al., 2006). Most of the intervention programs are endurance-based. Only little is known about the benefits of strength training on cognitive functions (Lui-Ambrose & Donaldson, 2009). The objective of the present study is to examine the evidence of three different training programs on cognitive abilities. 35 physically active men (mean age = 72 years) underwent physical (mobility, balance), cognitive (information processing speed, memory, executive function), and fitness tests (maximum strength of the upper and lower limbs, $\text{VO}_{2\text{max}}$). The sample was randomized divided into 3 interventions groups: walking (60-65% HR_{max} , $n = 10$), moderate (60-65% 1RM, $n = 13$) and high intensive strength training (80-85% 1RM, $n = 12$). The groups do not differ in age, cognitive and physical performance at baseline. The participants in all training groups show improvements in physical function, aerobic fitness and strength after 3 months of the biweekly training program. However, the cognitive performance increases slightly in all groups and group by time analysis reveal only marginal different changes in cognitive performance relative to the intervention program. In general, the results show increased cognitive performance independently from mode and intensity of the training program. Even so, although not significant, these results might support the assumption that endurance and strength training have different benefits and provoke different mechanisms which are responsible for improvements of cognitive functions. Further research with larger sample sizes and longer intervention could verify this supposition. **Keywords:** Physical Training; Cognitive Function; Aerobic Fitness.

3RD-LIFE: VIRTUAL PLATFORM SUPPORTING ACTIVE AGEING AND INCREASING ELDERLY INCLUSION

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The main objective proposed by WHO (2002) during the Second United Nations World Assembly was to promote the healthy aging optimizing opportunities for health, participation and security throughout the life course. According to Cornwell & Waite, (2009) social isolation and infrequent participation in social activities pose health risks and reduce quality of life of elders. Therefore, improving social network and preventing social isolation are important factors where Information and Communication Technology (ICT) play an important role, also for older people Zinnikus, (2009). In an attempt to address the needs, 3rD-LIFE project promote the development of a 3D virtual tool which consist of a social platform, where aging people can increase their social interaction and active ageing. Interviews and focus groups were carried out at INGEMA (Spain) and at CURE (Austria) with 54 participants. The users, showing a normal cognitive aging, had previous technological experience and were asked about: communication habits with friends and family, social relationships, usage of Internet, social network sites and attitude toward technologies. In both countries the participants reported having close relationships with friends and children. In Spain, traditional channels of communicating are still most frequent used, e-mail is used to some extent. In Austria, older people use the Internet in their daily life for financial issues, social networking and gaming. Regarding attitude towards internet the Spanish sample had less positive attitude than the Austrian. The participants perceived cultural, educational or entertainment activities as attractive 3rD-LIFE tools. They expressed the wish to meet new people with similar hobbies in 3rD-LIFE, and have a place for sharing information and some applications like e-learning and serious games. 3rD-LIFE will promote the opportunities for active aging and could increase the quality of life of elderly through its wide range of possibilities. **Keywords:** Active Ageing, Inclusion; Quality of Life; Social Network; Technology.

CREATING HOME LIKE PLACES IN A PURPOSE-BUILT RETIREMENT VILLAGE IN THE UK

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Providing sustainable environments that are capable of supporting individuals in realizing their potential, and will allow them to participate actively and contribute to their communities throughout their lives, is an urgent policy matter and one that is key to enhancing quality of life as we age. One response to this is the move away from traditional housing for older people, generally provided within a framework that fosters dependency, toward more flexible and inclusive approaches designed to provide choice and promote autonomy. Purpose-built retirement communities are one example of such innovation, and are contributing to the rapid transformation of housing options in later life. Fundamental to these developments are notions of 'ageing in place' and 'homes for life'. In this paper, we ask whether such purpose-built retirement communities can be places that residents would call 'home' and, if so, whether they do indeed offer 'homes for life'. We begin by examining key theories that inform understandings of 'home' and the significance of the concept in relation to

well-being. We then turn to findings from the four-year Longitudinal study of Ageing in a Retirement Community (LARC) and explore the vision behind the development of one particular village, the extent to which that vision has translated into an environment allowing residents to successfully engage in the process of 'home'-making, and the consequences for their ability to age well in place. We conclude with a discussion of the broader implications of the findings for policy and service provision. In particular, we ask how those involved in developing and providing this particular form of accommodation for older people might continue to identify and meet the needs of growing and increasingly diverse populations. We suggest that crucial to this is an understanding of the complexity and importance of 'home' as we age. **Keywords:** Quality of Life; Housing; Retirement; Wellbeing.

WORK ABILITY IN MIDLIFE AND SELF-RATED HEALTH: A 28-YEAR LONGITUDINAL STUDY

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Background: The main objective of this study was to examine longitudinally the associations between the work ability of middle-aged occupationally active employees and their self-rated health (SRH) over the retirement years. **Methods:** The study sample constitutes a follow-up questionnaire of Finnish municipal workers (n = 6257) conducted at the Finnish Institute of Occupational Health from 1981 to 2009. The respondents were born between 1923 and 1937. Over the follow-up, 2220 persons deceased. In 2009, a total of 3092 persons had responded to all five (1981, 1985, 1992, 1997, 2009) cross-sectional questionnaires (the response rate was 75%). The measure of SRH was constructed from the following item: "Compared to your friends of the same age, is your health much better, slightly better, the same, slightly worse, or much worse?" It was further classified as better, the same, and worse. General linear models with repeated measures was used to assess the effects of the four levels of work ability index (excellent, good, moderate, poor) and co-variables (physical functioning, activity, chronic diseases, health behaviours, gender, age, marital status, and socio-economic status) on health. **Results:** The results showed that work ability index was a strong predictor of later-life SRH. If a person had an excellent work ability the odds of reporting good health was 4-fold (among men OR = 4.4, 95% CI 3.4 - 5.8, among women OR = 3.80, 95% CI 3 - 4.8) compared to the odds of a person with poor work ability having good health during the retirement years. Even an increase from poor work ability to moderate doubled the odds of good health. **Conclusions:** The strong connection between work ability and SRH suggests that promotion of work ability during occupationally active years may have positive impacts on health and well-being far beyond retirement transition. **Keywords:** Physical Activity; Wellbeing; Retirement.

SYSTEMATIC REVIEW OF SUCCESSFUL AGEING DEFINITIONS

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In the 50 years since the introduction of the term "successful ageing (SA)", a consensual definition has not been reached. Clinical and theoretical researchers have conceptualized and operationalized SA differently, resulting in a myriad of interpretations. A systematic review was undertaken to identify operational definitions of SA. Seventy-two studies, and 82 definitions, were included; 95% of studies include health-related components (i.e. physical

function/disability), 47% include engagement components (i.e. active social/life engagement), 43% include well-being components (e.g. life satisfaction), 25% include personal resources (i.e. attitude), and 5% include extrinsic factors (i.e. environment/finances). Categorical operational definitions identify between < 1% and > 90% of study participants as successfully ageing. The heterogeneity of these results supports the multidimensionality of SA and the difficulty in dichotomizing usual vs. successful aging. Although the majority of operationalizations reveal a biomedical focus, studies are increasingly using psychosocial and lay components to inform operationalizations of SA, indicating a trend towards a more holistic perspective of SA. Prospective models of SA should, therefore, be multidimensional, continuum-based, including objective and subjective items. The adoption of a unifying definition of SA will permit comparison across cultures and contexts; however, the absence of consensus is an inhibitive force in the advancement of the field. **Keywords:** Successful Aging; Definition; Systematic Review.

EXPLORING THE EXPERIENCES OF OLDER CYCLISTS IN ORDER TO PROMOTE SAFETY

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Cycling is generally recognised as a healthy activity, with health benefits identified at the individual as well as the societal level. For older people, cycling as a form of aerobic exercise has been associated with improved cardio respiratory fitness and cognitive capacity. However, cyclists are vulnerable road users in modern traffic systems, and elderly cyclists are at relatively high risk of casualties per kilometre travelled compared with other age groups. Despite this, relatively little research has focussed specifically on older cyclists or on their experiences. Drawing on data from the Safer Cycling Study [1], a cohort study of over 2000 adult cyclists conducted in New South Wales (Australia), this paper describes and compares the characteristics and behaviour of older cyclists with cyclists in other age groups. The paper explores: cycling frequency; cycling purpose; distance, duration and speed of cycling; infrastructure utilisation; type of bicycle and safety equipment used; crashes and self-reported factors contributing to these crashes; and injury severity. A better understanding of older cyclist behaviour and risk is essential given the demographic ageing of the population, and to inform policy and planning in countries such as Australia, where government is aiming to increase levels of cycling across the community. **References:** [1]Poulos RG, Hatfield J, Rissel C, Grzebieta R, McIntosh AS. Exposure-based cycling crash, near miss and injury rates: The Safer Cycling Prospective Cohort Study protocol. *Injury Prevention* 2012;18:e1. doi:10.1136/injuryprev-2011-040160. **Keywords:** Cycling; Respiratory; Aerobic; Cognition; Demographic Ageing.

DEVELOPMENT AND PSYCHOMETRIC PROPERTIES OF THE GRONINGEN AGEING RESILIENCE INVENTORY

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Introduction: A predominant stressor in older age is frailty. Frailty is a dynamic process of progressive decline in physical, psychological and social functioning in. Adaptive processes, in which people compensate for negative consequences of aging like frailty, seem to be important for successful aging. Resilience is a construct related to the adaptive capacities

of individuals to bounce back or cope successfully despite substantial adversity. There are different scales that measure resilience in different populations, however none of these resilience scales are specifically constructed and validated for (pre)frail older adults AIMS: The objective of the present study was to develop and validate the Groningen Ageing Resilience Inventory (GARI). **Methods:** The GARI was developed, and 134 community-dwelling older adults aged >70 years were invited to complete the 17-item self-report questionnaire. A psychometric study was performed to examine the internal structure, the validity (construct and convergent) and reliability (test-retest and homogeneity) of the GARI. The Groningen Frailty Indicator was used to map the sample in the study. **Results:** Factor analysis using the principal component method generated three coherent factors of resilience in the present sample; 'adaptive capacity', 'connectedness' and 'self-confidence', explaining 43% of the variance. Cronbach's was 0.77. Convergent validity yielded positive and significant correlations between the GARI, the Dutch General Self-efficacy Scale, and the Sense of Coherence scale. Analysis of test-retest reliability generated ICC values of 0.63-0.72 for the three subscales. **Conclusion:** The GARI is an applicable inventory for measuring resilience in (pre)frail older adults. It can be used as a screening instrument to get additional information to the standard geriatric assessments, to assess and track changes in resilience during frailty transitions. **Keywords:** Resilience; Frailty, Groningen Ageing.

BLOOD PRESSURE VARIABILITY IS ASSOCIATED WITH COGNITIVE IMPAIRMENT IN COMMUNITY DWELLING OLDER PERSONS AND IS A PREDICTOR OF COGNITIVE DECLINE

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Background: Elevated ambulatory blood pressure (BP) predicts end-organ cerebrovascular, cardiac, neurodegenerative and renal damage. The relationship between ambulatory BP variability and age related cognitive function is unknown. **Objective:** To assess the potential association between BP variability and cognitive function in an unselected sample of community-dwelling older persons, and to explore the impact of these parameters upon cognitive decline. **Methods:** Participants were randomly sampled from a single general practice. Twenty four BP monitoring was carried out at baseline. Cognitive assessments took place at baseline and after 5 years follow-up using the Mini-Mental State Examination (MMSE) and the Cambridge Cognition Examination (CAMCOG). Participants were 65 or older at baseline. Three hundred and one individuals participated in baseline assessment 207 participated in the follow up examination. **Results:** At baseline increased SBP variability was independently associated with lower CAMCOG total score ($P < 0.001$), CAMCOG memory sub-score ($p = 0.001$) and CAMCOG executive sub-score ($P < 0.001$). Greater daytime diastolic BP variability was independently associated with poorer CAMCOG executive sub-score ($P = 0.026$). Increased baseline daytime systolic variability was independently associated with poorer scores in all domains of the CAMCOG at 5 years. Increased baseline daytime SBP variability was independently associated with greater decline in MMSE ($P = 0.025$) and CAMCOG memory scores ($P = 0.010$). Increased baseline daytime diastolic BP variability was independently associated with greater decline in MMSE and CAMCOG total ($P = 0.007$ and $P = 0.016$ respectively). **Conclusion:** Increased blood pressure variability is associated with impaired cognitive function and cognitive decline in community dwelling older people older persons. **Keywords:** Blood Pressure; Cognitive Function; Elderly.

CORRELATES OF EXERCISE MAINTENCE AMONG ORIENTAL OLDER PEOPLE

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Background: Despite well documented health benefits of exercising, only one third of older adults participated in regular exercise globally. Understanding correlates of exercise maintenance among oriental older people may contribute to decision making about tailored physical activity intervention that could enhance maintenance of physical activity among this population. **Objective:** To investigate correlates of exercise maintenance among oriental older people living in rural area. **Methods:** A retrospective study design was used to survey a group of older people living in a rural community. Data were collected through fact-to-face interviewing with the use of a structured questionnaire. Hypothesis was tested through statistical analysis of logistic regression with the use of SPSS 14.0 software. **Results:** A total of 108 participants was recruited. There were 76% of participants self-reporting to involve in regular physical activity and 69% of participants meet our requirement of being in a maintenance stage. Three factors were included in a logistic model to explain maintenance of mild physical activity and explained 53% variance of the dependent variable. Exercise self-efficacy was an only predictor of older people's moderate physical activity and explains a total variance of 24%. **Conclusions:** Design of physical activity intervention aiming at enhancing maintenance of physical activity among older people needs to take factors of exercise self-efficacy, exercise outcome expectation and number of chronic disease into consideration. Improving exercise self-efficacy may be particularly crucial in increasing maintenance of moderate physical activity in older people. **Keywords:** Physical Activity; Rural; Exercise; Elderly.

LIVING WITH SUBJECTIVE MEMORY COMPLAINTS: IMPACT ON ACTIVITY AND PARTICIPATION

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Background: Subjective memory complaints (SMC) affecting daily life are reported by older adults in the absence of objective cognitive impairment (Elfgrén 2010). SMC may reduce quality of life and increase anxiety (Mol et al 2009) however little is known about the impact of SMC on occupational performance. This study aimed to elicit the lived experience of SMC among community-dwelling older adults. **Method:** Five community-dwelling older adults (>65 years) attending a community-based rehabilitation unit completed semi-structured interviews which were transcribed and analysed using interpretive phenomenological analysis (Smith et al., 2009). Participants had cognition within normal range (>24 on MMSE) but experienced everyday memory difficulties. Ethical approval and participant consent were obtained. **Results:** Even with very early memory changes participants experienced disruption to occupational performance with negative psychological implications. Themes emerged describing social withdrawal, disruption to activities of daily living, reduced confidence in conversation and feelings of 'loss of self'. Humour was used to downplay the impact of SMC for participants and self-stigmatisation resulted in lack of help seeking. **Conclusion:** This study highlights the impact of SMC on occupational performance and the individual's sense of self. Recognising and challenging self-stigmatisation to encourage help-seeking is

necessary to facilitate early intervention and support to improve health outcomes for older adults with early memory changes. Occupational therapy can offer a key role in identifying functional distress due to memory complaints and in providing education on compensatory strategies and skills to improve occupational performance and health outcomes for older adults with memory difficulties. **Keywords:** Memory; Quality of Life; Complaint; Cognition.

REMOTE FEEDBACK IN HOMEBASED PHYSICAL ACTIVITY INTERVENTIONS FOR OLDER ADULTS: A SYSTEMATIC REVIEW

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Home-based physical activity programs for rehabilitation or stimulating physical activity in older adults often have low adherence and vary in effectiveness. The use of remote contact is a viable option that may enhance outcomes. We evaluated existing literature regarding effectiveness and feasibility of using remote feedback for home-based physical activity interventions in older adults. Relevant studies were searched for in PubMed, PsycInfo, Cochrane and Embase. Studies using a remote feedback strategy in delivering a home-based physical activity program for older adults were included. Controlled trials reporting an aspect of physical capacity or activity were rated on the 10-item PEDro quality scale before selection for the effectiveness evaluation. Quality rating had to be above 3 to be included. Feasibility evaluation was performed on all studies reporting an aspect of adherence. The search strategy yielded 2251 articles. Agreement between raters on items of the PEDro scale was 96%. Effectiveness evaluation included 22 studies; 19 reported on physical capacity and fitness outcomes, 5 on physical activity. Quality of these studies ranged from 4 to 8 with a median of 6. Feasibility evaluation included 28 articles. Due to a limited number of articles, mostly moderate quality, variety in methods and outcomes, and lack of comparisons with versus without remote feedback, definitive conclusions cannot be made. Preliminary results indicate that home-based interventions with frequent remote contact are as effective as supervised exercise strategies for enhancing adherence and physical capacity, and more effective than non-exercise strategies for enhancing physical capacity and activity. Two studies using remote contact during exercising showed positive results on physical capacity measures. Future research should focus on added value of providing remote feedback, determining optimal contact frequency and exploring new technologies such as internet strategies. **Keywords:** Physical Activity; Systematic Review; Intervention; Fitness.

ACTIVE AGEING THROUGH CREATIVE EXPRESSION AND PERFORMANCE

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Engaging in creative and imaginative activities is an effective and cost efficient way to achieve and maintain physical, emotional and mental health as people age. Singing in a community choir is physically rewarding, with likely improvements in breathing, cardiovascular function, the immune system, mental alertness and mood. Group singing is life reaffirming as people come together to create beautiful and uplifting sounds for their own enjoyment and the pleasure of others. For people with dementia, singing in a choir can also retrieve special memories around individual songs or past experiences. Joining a dance class provides the opportunity for various levels of physical exercise, from line dancing to the tango, within

an enjoyable social framework and is effective for both people who are in good health and people who have a chronic disease such as Parkinson's. Participating in a theatrical production can improve memory and physical dexterity. Making art requires manual dexterity, focus and concentration, problem solving techniques and visual aptitude. Creative ageing visual arts programs can also successfully cater to people with visual impairment. Photography, combined with nature walks, offers physical activity while also exercising the imagination and cognitive processes and encouraging lifelong learning. The combination of physical exercise and creative activities provides an ideal opportunity for older people to feel socially connected and attain a sense of mastery and achievement. This is critical to maintain self esteem and independence and combat stress, anxiety and loneliness. Active ageing is not just about physical exercise. It is about older people in society being active participants in a liveable community. This presentation will present best practice models of creative ageing programs, both for older people who enjoy good health and people who have a chronic condition such as dementia, supported by scientific research from USA, Australia and UK.

Keywords: Active Ageing; Mental Health; Dementia; Physical Activity.

THE RISK OF DEVELOPING A NEED FOR LONG-TERM CARE AND THE ASSOCIATED FACTORS IN JAPANESE ELDERLY WOMEN

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This study aimed to identify the risk of developing a need for long-term care in Japanese community-dwelling elderly people using the life functioning questionnaire developed by Shinkai et al. The study also investigated factors affecting long-term care needs to identify the characteristics of healthy elderly individuals who were judged to be at high risk of developing a need for long-term care. The survey was conducted between November and December 2010 involving 120 independent elderly women, age 73.2 ± 4.3 , in Himeji city. From the results of comparison of individual data between the high- and low-risk groups, in the high-risk group, age ($p < 0.05$) and the Geriatric Depression Scale score ($p < 0.01$) were significantly higher, and length of time able to stand on one leg and the rates of participants who take a walk were significantly lower ($p < 0.05$ for each) compared with the low-risk group. The risk of developing a need for long-term care and associated factors were compared after adjusting the age and physical performance factors, and a significant correlation was identified between walking and depression ($p < 0.05$ for each). Although the intensity and amount of walking of the participants could not be investigated in this study, the results indicated that a daily walking habit may reduce the risk of developing a need for long-term care. **Keywords:** Walking; Depression; Elderly; Care.

MOTOR COORDINATION AND VISUAL ATTENTION CONTROL ABILITIES: INTERRELATIONS IN OLDER ADULTHOOD

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Introduction: In aging, successful interlimb coordination requires larger attentional control, but the latter is limited by age-related decrements in attentional resources and deficits in visual attentional control. Therefore, it is relevant to understand what specific types of attentional

control are associated with the ability of older individuals to successfully cope with different demands on interlimb coordination. **Methods:** Thirty-two healthy older adults aged 65-80 yrs filled in the International Physical Activity Questionnaire and performed the 6 min walk test, a visual attention test and an interlimb coordination test. The latter consisted in flexions and extensions of hand and foot with in-phase and anti-phase modes at three velocities (80, 120, and 180 bpm). The attention test was a reaction time task in which visual attention was cued by means of spatial cues of different sizes followed by compound stimuli with local and global target features. Indices of focused attention and attentional flexibility were computed. Correlational analysis was performed and in-phase and anti-phase coordination performances were regressed on attentional indices. **Results:** The time spent in sedentary activities was negatively correlated with both indices of visual attentional flexibility and anti-phase coordination performances at highest velocity. After controlling for the prediction accrued by physical activity levels and functional capacity, anti-phase coordination performance was predicted by indices focused attention, but not by indices of attentional flexibility. No association emerged between in-phase coordination and attentional performance indices. **Conclusions:** The results suggest that in aging people, sedentary behaviours are associated with the decline of complex attentional control and motor coordination performances and that different types of attentional control ability may underlie the performance of different and differently complex coordination patterns. **Keywords:** Sedentary behaviour; Physical Activity; Visual Attention; Performance.

A PATHWAY FOR OCCUPATIONAL THERAPY ASSESSMENT AND INTERVENTION FOR PATIENTS WITH DEMENTIA

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The number of people with Dementia is expected to double to 1.4 million within the next 30 years (DOH 2009:9). To ensure that this progressive condition can be better managed from early diagnosis to end of life care, resources must be utilised effectively in the most efficient way. More importantly, the need for effective, quality assessment and interventions is crucial for not only patients with Dementia, but also for their carer. Within the Occupational Therapy Department at King's College Hospital we recognised the difficulties that we face within an acute hospital setting. There can be an emphasis on the use of the Mini Mental State Examination (MMSE) which does not always highlight full cognitive deficits or relate to function; and there is pressure to reduce length of stay. This led us to evaluate current practice and evidence to develop a Dementia pathway which outlines best practice for occupational therapists. This presentation will describe the pathway which we have developed to ensure effective strategies at all stages of the patient's journey in the acute hospital, from admission to discharge. It describes assessment methods (including standardised and non-standardised cognitive assessments) to identify the specific cognitive deficits in order to plan interventions. These interventions may include compensatory approaches (eg memory aids/assistive technology) but we also want to promote a more rehabilitative approach (eg errorless learning/sensory stimulation including activities groups) with the focus on enabling people to remain in their own homes for as long as possible. It will also summarise the areas of further development of Occupational Therapy input at King's College Hospital in relation to current Dementia guidelines. **Reference:** Department of Health (2009) Living well with dementia: A National Dementia Strategy. London: Department of Health. **Keywords:** Dementia; Occupational Therapy; intervention.

PROTECTING MENTAL WELLBEING: CAN BABY BOOMERS DO IT BETTER?

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Background: It is accepted that physical activity can make a contribution to mental wellbeing and the protection of mental health in later life. Evidence includes research for a 2008 UK Government review that showed the link between physical activity and delayed cognitive decline. A 2005 review of mental health problems in later life estimated the prevalence of depressive syndromes in people aged 55+ to be 1 in 7. It identified low levels of physical exercise as a risk factor and the importance of exercise in providing protection. There is also evidence that detection and treatment of cases is poor, with symptoms simply seen as inevitable aspects of ageing. **Aims/Objectives:** The project aims to explore whether a new generation of older people, the post war 'baby boomers', will have a different attitude to protecting their mental health and seeking help if they experience mental illness. This is a generation that grew up with the welfare state and prosperity. They are the healthiest, best educated generation to reach later life and can also expect to live longer. Sociological evidence suggests that their shared experience of social change has created a collective identity that separates baby boomers from previous generations and is shaping their attitudes to ageing. A systematic review of literature on mental health in later life has been undertaken to identify risk and protective factors. A wide range of evidence about the lives of the baby boomer population has also been collected and reviewed by a panel of baby boomers with a range of expertise and experience. To support this overview, in depth face-to-face and survey interviews have been carried out. **Results:** Fieldwork is not completed but initial analysis confirms many aspects of the hypothesis about a generation that is different from its parents, is more aware of health protection needs and more proactive. Emerging attitudes present challenges as well as opportunities for mental health promotion. **Keywords:** Physical Activity; Wellbeing; Cognition; Mental Health.

BARRIERS, MOTIVATORS AND LIFE EXPERIENCES OF PHYSICAL ACTIVITY FOR OLDER HOME CARE CLIENTS

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Australia's ageing population is increasing, and the majority of older people have a desire to live independently in their own home for as long as possible. Being mobile and maintaining strength and balance are important contributors to remaining independent. The aim was to identify and explore levels of, and barriers and motivators to, physical activity of older home care clients who have participated in a restorative home care program which includes a focus on increasing lifestyle activity or received 'usual' home and community care (HACC) services. A random sample of 745 clients who received a restorative service and 745 who received HACC were invited to complete a survey. On completion of the survey participants could consent to involvement in a semi-structured interview, 20 interviews were conducted. Survey data were summarised using descriptive statistics and analysed using t-tests and chi-squares to identify significant differences between the groups. Older individuals who had participated in a restorative home care service were more active than similar individuals who had received HACC. The main barriers to being active for both groups were having an 'ongoing injury/illness' and 'feeling their age/or too old'. The main motivators for being active were for 'health/fitness' and 'wellbeing'. Physical activity experiences of interview-

ees included minimal structured sport during their childhood due to a lack of facilities and opportunity. As a result, perhaps, the activities they determine as being physically active in later life include walking and exercise through daily activities such as housework, shopping and gardening. Understanding the benefits of activity and that many participants saw age as a significant barrier, indicates the need to raise community awareness and promote the benefits of staying as active as possible, at an individual level. Exercise programs for this age group may be more successful if designed around each person's usual life tasks. **Keywords:** Physical Activity; Home Care; Wellbeing; Walking.

THE ROLE OF REHABILITATION IN IMPROVING WELL-BEING, QUALITY OF LIFE AND FUNCTION IN OLDER AGE

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It is well known that disability increases with age, due in large part to the increasing prevalence of conditions that result in disability, including that of frailty. However, the normal ageing process can also contribute to functional decline by reducing the physiological reserve of many body systems. These two factors can interact and, if occurring gradually, the decline in function may be dismissed as an inevitable part of ageing or chronic disease, with reduced quality of life, well-being and independence. Rehabilitation is generally seen as a time-limited intervention that occurs in response to an acute episode of illness or injury, with the aim of restoring lost function and independence where possible. However, limiting the application of rehabilitation to an acute episode diminishes the role that both multidisciplinary rehabilitation, and rehabilitation principles, can offer in the promotion and maintenance of well-being and physical capacity in the lives of older people, as well as in reversing functional decline that occurs gradually. In the case of gradual functional decline, formal rehabilitation may not be sought as there is no triggering 'episode' of onset. This paper provides a narrative review, describing the role that multidisciplinary rehabilitation can have in promoting well-being, function and active ageing in older people, using a person-centred approach. Models of community-based rehabilitation will also be considered. But, unlike much health care, rehabilitation is not a passive process. Exercise, training and chronic disease management requires the active engagement of the individual to be most effective, often with help from a partner or carer. Environmental optimisation and the use of assistive technology may also be needed. However, when such engagement occurs, the individual is empowered, through having a direct role in achieving their goals and pursuing their purposes in life. **Keywords:** Rehabilitation; Wellbeing; Quality of Life; Active Ageing; Intervention.

LIFT (LOW IMPACT FUNCTIONAL TRAINING): AN INNOVATIVE AND SUCCESSFUL ACTIVE AGEING PROGRAMME BY AGE CYMRU FOR OLDER PEOPLE IN WALES

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Introduction: LIFT is a series of activities and games designed to get more older people taking part in physical activity in a local environment. Using safe seated exercises that are used during our active daily lives. It is activity that contributes towards a person's health and wellbeing in a safe and sociable format. It is designed to be used in a variety of community settings. **Methods:** The training course was piloted with potential LIFT leaders and adjust-

ments to the planning of the delivery of the training programme. The training course consists of four days training to enable participants to deliver the session safely and effectively in a local area. Resources produced including manuals, music, games equipment and other resources. In many areas the use of volunteers to deliver LIFT as an alternative to gym based exercise sessions and as a local low cost physical activity that has proved suitable for many older people. The strategy is that it is suitable for people who take part in the courses to be active and attend the sessions for the long term, helping to contribute towards improving their physical, social and mental wellbeing on an ongoing basis. The workshop will explore the opportunities and challenges presented to Age Cymru when developing and delivering the programme and offer participants the chance to consider their capacity to provide a similar programme to enhance the physical activity and wellbeing of older people in their local area. **Results:** Over seventy five people trained to deliver LIFT sessions locally. Weekly, fortnightly and monthly sessions delivered in a variety of locations from community centres, church halls and care and residential homes. Eight LIFT courses delivered, one cascade course and three sub cascade courses delivered. Over five thousand LIFT experiences completed per year. **Keywords:** Active Ageing; Physical Activity; Wellbeing.

NORDIC WALKING FOR HEALTH IN WALES: AN INNOVATIVE AND SUCCESSFUL ACTIVE AGEING PROGRAMME FOR OLDER PEOPLE

Little, Glenn

Age Cymru, United Kingdom

Introduction: Nordic Walking is a popular activity that contributes towards health and wellbeing in a safe and sociable format. Walking with two lightweight specially designed poles that provide support while also increasing the effectiveness of the exercise. Nordic Walking involves the upper body muscles as well as the legs making it an ideal activity for older people to participate in. **Method:** Age Cymru runs an extensive and successful Nordic Walking programme for older people across Wales. The workshop will look at how the programme has been developed, implemented and the results achieved. The use of volunteers to deliver Nordic Walking as a low cost physical activity that has proved suitable for older people as an activity contributing to their wellbeing. The workshop will explore the opportunities and challenges presented to Age Cymru when developing and delivering the programme and offer participants the chance to consider their capacity to provide a similar programme to enhance the physical activity and wellbeing of older people in their local area. The workshop will also look at the recruitment and training of volunteers as peer led instructors and leaders to deliver the programme locally. **Results:** Over sixty peer led volunteers recruited and trained to deliver Nordic walking locally. Regular Nordic Walking courses teaching older people the 10 steps to Nordic Walking as taught across the world. Ongoing walks delivered nationally to enable people who take part in the courses to be active in the long term, helping to contribute towards their participation in 150 min per week as directed by UK Department of Health. **Keywords:** Walking; Active Ageing; Wellbeing; Exercise; Physical Activity.

COGNITIVE FUNCTION ASSOCIATIONS TO CARDIAC PARAMETERS: ASSESSING AGE EFFECTS

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Objectives: To assess correlations between cardiovascular autonomic factors and blood pressure with cognitive function across different age groups (18-35, 36-50, and 51-65 years). Different cardiac associations to cognitive domains in these age groups may serve as predictors for cognitive impairment. **Methods:** Pre and post study blood pressure (BP) was measured and an electrocardiogram (ECG) was obtained during a resting baseline and cognitive task (ECG was used to extract heart rate variability (HRV) data). Two validated and reliable psychometric questionnaires were administered, which assessed different cognitive performance such as orientation, memory, recall, calculation, similarity and construction. **Results:** Different cognitive domains were linked with the 3 age groups (e.g., 18-35: orientation, 36-50: memory and construction, 51-65: similarity). Blood pressure and HRV parameters were differentially linked to various cognitive domains (such as recall, orientation, memory and calculation) in the 3 age groups. **Conclusions:** Previous studies failed to evaluate autonomic cardiac factors with cognitive changes over a range of ages. Cognitive performance in particular domains appears to be influenced by cardiac autonomic parameters at different ages - these may serve as predictive markers for cognitive decline. The use of these predictive markers to delay the onset of cognitive impairment would reduce economic costs and preserve cognitive function in the elderly. **Keywords:** Cognitive Function; Blood Pressure; Cardiovascular; Cost.

SATISFYING EXPERIENCES OF FILIPINO OLDER PEOPLE: ATTRIBUTES TO HEALTHY AGEING

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Background: Literature on ageing especially in the Philippines has focused on the nutritional and physical aspects of the process but rarely have there been studies which delve into the socio-psychological and spiritual aspects as potential attributes to healthy ageing. **Aims/Objectives:** This paper examines satisfying experiences of Filipino older people which can be considered attributes to healthy ageing. The study draws attention to a qualitative exploration of the different contexts which older people seem to be important in their ageing experience. **Methods:** The study was conducted in Tacloban City Leyte which is located in the eastern Region of the Philippines. In depth interviews of eighteen participants; nine (9) males and nine (9) females with ages ranging from 60-89 years was conducted. **Results:** Findings reveal five themes of satisfying experiences of old people which can be considered attributes to healthy ageing. In a collectivist culture such as the Philippines it is not surprising that (1) familial support and the (2) presence of grandchildren is considered important. (3) Enjoyment in leisure and social activities is another experience which is considered satisfying because it serves as an outlet for relaxation and socialization. As a predominantly catholic nation, Filipinos are very religious. Thus (4) devotion and religious involvements are also considered as key elements in a healthy ageing experience. Lastly is the satisfaction derived from (5) serving others. It seems therefore that Filipino older people are more concerned in extending themselves to others rather than at the receiving end of a dynamic social interaction. This positive attitude towards others also help mediate in their acceptance of their present status- that of being old. Healthy ageing should not be focused only on the physical and nutritional aspects but should also include the socio-psychological aspects as well. **Keywords:** Healthy Ageing; Culture; Religion.

"I GOT INTO THE HABIT AND IT HAS DEFINITELY BECOME A PART OF ME": A QUALITATIVE STUDY OF WHY OLDER ADULTS START AND CONTINUE TO WALK FOR HEALTH

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Brisk walking has been identified by policy makers as a key mechanism through which older adults can achieve current physical activity recommendations. In Scotland, Paths for All promote walking for health in older adults through volunteer led walking groups. The aim of this qualitative study was to investigate the reasons why older adults start and continue to participate in Paths for All walking groups. Following institutional ethical approval, ten older adults (65+ years) who had been walking with Paths for All groups for a minimum of 12 months participated in individual interviews at a place of their convenience. Interviews were audio recorded, transcribed verbatim and the data were analysed using interpretive phenomenological analysis to identify individual and group perspectives. This project is on-going and full findings will be presented at the conference. Preliminary findings indicate that a history of walking, initial beliefs about the benefits of walking, supportive social and physical environment, perceived benefits of walking, walking becoming a habit, and motives for walking have emerged as pertinent themes. The findings will be discussed in relation to current theory and recommendations for practice. **Keywords:** Physical Activity; Walking; Health.

ASSOCIATION OF SELF-REPORTED HEALTH AND THE PRESENCE OF NUTRITION-RELATED CHRONIC DISEASES AMONG LOW- AND MIDDLE- INCOME ELDERLY FROM SANTIAGO, CHILE

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Objective: To examine the association between poor self-reported health (SRH) and the presence of nutrition-related chronic diseases (NRCD) in elderly subjects. The study also identifies the role of socio-demographic and other variables in relation to SRH. **Methods:** A cross-sectional study was carried out on 2,800 adults aged 65-67 years from medium- and low-income areas of Santiago, who were taking part in the CENEX study (cost-effectiveness of a nutrition supplement and exercise programme in older people). SRH was measured by the question: "In general, how would you describe your health at present? 1) excellent, 2) very good, 3) good, 4) regular, or 5) bad." The five categories were dichotomised, combining options 1, 2 and 3 ("good SRH") on the one hand and options 4 and 5 ("poor SRH") on the other. Subsequently, the association between poor SRH and NRCD was examined in univariate and multivariate analyses. **Results:** 56.8% of the participants reported poor SRH. Women were more likely than men to report poor SRH (62.2% and 45.7%, respectively). Univariate analysis showed a strong association between poor SRH and NRCD (Odd ratio (OR) 2.45; 95% Confidence Interval (CI) 1.90, 3.17). This association remained statistically significant after adjusting for potential confounders that showed significant association in the univariate model (OR 2.04; 95% CI 1.50, 2.75; P value: < 0.001). The final model included education, income, depression, cognitive status, alcohol habits, height, and waist circumference (OR of 2.04; CI 1.51, 2.75; P value: < 0.001). **Conclusion:** The results of this study show that poor SRH is associated with the presence of NRCD regardless of gender.

Individuals diagnosed with any NRCD are twice more likely to report poor SRH than are individuals with no NRCD. Our results illustrate that acknowledgement of SRH may be a useful, cheap and accurate screening tool to assess NRCD in older people, as well as their perception of their own health. **Keywords:** Health; Nutrition; Chronic Disease.

EFFECTS OF A 6-MONTH MULTIMODAL TRAINING INTERVENTION ON RETENTION OF FUNCTIONAL FITNESS IN OLDER ADULTS: A RANDOMIZED-CONTROLLED CROSS-OVER DESIGN

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Background: Older adults have the highest rates of disability, functional dependence and use of healthcare resources. Training interventions for older individuals are of special interest. The main purpose of this study was to assess the immediate and long-term effects of a 6-month multimodal training intervention (MTI) on functional fitness in older individuals. **Methods:** The MTI consisted of daily endurance and twice-a-week strength training. The method was based on a randomized-controlled cross-over design with four phases: 1) Enrolment and baseline assessment, 2) immediate 6-month intervention compared with controls, 3) crossover phase with delayed 6-month intervention by the control group, and 4) additional 6-month follow-up. **Results:** After 6-month MTI, the intervention group improved in physical performance compared with the control group via Short Physical Performance Battery (SPPB) score (mean diff = 0.6, $p < .05$), in 8-foot up-and-go test (mean diff = -1.0 s, $p < .001$) and in 6-min walking test (mean diff = 44.2 m, $p < .001$). In strength performance via knee extension the intervention group improved (mean diff = 55.0 Newton, $p < .001$) while control group declined, and also in PA (mean diff = 125.9 cpm, $p < .001$). Overall MTI effects in long-term improvements (phases 1–4) from both groups together came through in SPPB (mean diff = 1.1, $p < .001$), in 8-foot up-and-go (mean diff = -0.9 s, $p < .001$), and in 6MW (mean diff = 18.7 m, $p < .01$), but maintained compared to baseline in knee extension (mean diff = 4.2 Newton, $p > .05$), in PA (mean diff = -4.0 cpm, $p > .05$), and in Icelandic quality of life (mean diff = 0.3, $p > .05$). **Conclusions:** The results present that multimodal training intervention is feasible and beneficial in older populations. Our findings support the inclusion of exercise as an integral part of the prevention and management of chronic disorders of older individuals, and may positively influence their ability to stay independent, thus reducing the need for institutional care. **Keywords:** Fitness; Disability; Physical Performance; Exercise.

MORE THAN MANAGING: PERSONAL RESOURCES AS FACILITATORS OF LEISURE PARTICIPATION FOLLOWING AN ACUTE HEALTH CRISIS

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This study was designed to examine factors influencing successful aging from the perspective of adults who were transitioning home following an acute health crisis, which led to hospitalization and rehabilitation. The current analysis focused on identifying factors that participants felt would influence their abilities to engage in valued activities following return to their homes. Eleven adults (ages 53 to 89 years) participated in in-depth qualitative interviews

on two occasions: one month and three months following discharge from the rehabilitation unit. Profiles were constructed for each participant to examine their leisure participation in the context of their self-appraisals of available personal and external resources. Cross-case thematic analysis revealed significant differences in the trajectories of activity engagement experienced by study participants. Study participants who were able to garner necessary resources to continue with, substitute, or even expand their participation in leisure activities appeared to be coping, adapting, and to have a sense of psychological resilience. When the necessary resources were not there participants' activities appeared to be oriented to "filling time" or "getting by." Although some participants had access to external resources that would support activity participation (e.g., access to adaptive aids, instrumental supports, and social groups) this was not sufficient for taking action. Participants who appraised their abilities/resources and activities favourably seemed to possess: a sense of life purpose, self-perceptions that their abilities were sufficient for preferred activities, knowledge of compensatory strategies, and a repertoire of activities or interests to draw from when they could no longer do some activities. Beyond helping people better manage health problems, there is a need to help people learn ways to live well with their condition, by strengthening personal resources for leisure participation. **Keywords:** Leisure; Rehabilitation; Health; Resources.

THE EFFECTS OF SOCIAL SUPPORT, GENERATIVITY AND DEPENDENCE ON PERCEIVED HEALTH: A STUDY IN AN ELDERLY ANGOLAN SAMPLE

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Among the main domains representing quality of life in the elderly, health takes a primary place (Prieto-Flores, Moreno-Jiménez, Fernández-Mayoralas, Rojo-Pérez, & Joao, 2012). Perceived health, as the individual's perception of his or her health status, is seen as an essential complement to the traditional indicators in the assessment of health studies (Hunt, McKenna, McEwen, Backett, Williams, & Papp, 1980). Several factors have been identified as predictors of perceived health, being social support (Bisconti & Bergeman, 1999), generativity (Efklides, Kalaitzidou, & Chankin, 2003), and perceived dependence/autonomy (Grewal, Lewis, Flynn, Brown, Bond, & Coast, 2006) of particular interest. The main aim of this study is to assess and estimate the predictive power of social support, generativity, and dependence/autonomy on perceived health in a sample of 1003 Angolan elderly. A Multiple Indicators Multiple Causes (MIMIC) model was estimated and tested. Several predictors of a latent factor of perceived health were included in the model, specifically: measures of social support (emotional support from friends, perceived adequacy of social relationships, priority for social support), active aging (dependency, competence, internal locus of control and performance-related quality of life), and generativity. This model reasonably fitted the data: chi-square 237df = 566.05, $p < .01$, CFI = .92, GFI = .89, SRMR = .06, and RMSEA = .11. Results showed significant effects of several exogenous variables on perceived health. Overall the amount of perceived health variance explained for was a 38.6%, the largest effects being those of priority for social acceptance ($\beta = .22$) and perceived competence ($\beta = .25$). Results are related to those found in the literature, and the strengths of the research, are highlighted. **Keywords:** Quality of Life; Social Support; Autonomy; Active Ageing.

HOW SOCIAL SUPPORT, GENERATIVITY AND DEPENDENCE CONTRIBUTE TO SATISFACTION WITH LIFE: A STUDY IN AN ELDERLY ANGOLAN SAMPLE

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Life satisfaction has long been identified as a part of subjective well-being (Andrews & Withey, 1976; Diener & Emmons, 1984), and it is referred to a cognitive, judgmental process (Diener, Emmons, Larsen, & Griffin, 1985), in which person's quality of life is globally assessed according to his/her chosen criteria (Shin & Johnson, 1978). Thus, life satisfaction is a conscious cognitive judgment, based on the comparison of one's life with a self-imposed standard or set of standards, which lead to a global assessment of life (Pavot & Diener, 1993). Many constructs have been related to life satisfaction and other components of well-being, such as social support (Theurer & Wister, 2010), generativity (McAdams, Aubin, & Logan; 1993), perceived control (Infurna, Ram, Wagner, Gerstorf, & Schupp, 2011), or perceived dependence/autonomy (Cox, Green, Seo, Inaba, & Quillen, 2006). The aim of the research is to study the predictive power of social support, generativity, and dependence/active aging on life satisfaction in a sample of 1003 elderly from Angola. A Multiple Indicators Multiple Causes (MIMIC) model was estimated and tested. Several predictors of a latent factor of life satisfaction were included in the model, specifically: measures of social support (friends emotional support, social relationships perceived adequacy, priority for social support), active aging (dependency, competence, internal locus of control and performance-related quality of life), and generativity. The model adequately fitted the data: chi-square 237df = 424.23, $p < .01$, CFI = .95, GFI = .92, SRMR = .03, and RMSEA = .10. Results showed significant effects of many exogenous variables on life satisfaction. Overall the amount of life satisfaction variance explained for was a 56%, the largest effects being those by social support (beta = .65) and emotional support from friends (beta = .15). Implications for these results are discussed, and research strengths, like the sample particularity, are highlighted.

Keywords: Satisfaction, Quality of Life; Wellbeing; Social Support; Active Ageing.

AN AUDIT OF AN ACTIVITIES SERVICE IN AN ACUTE CARE SETTING

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Older people are the largest group of consumers of healthcare and it is recognised that acute hospital admission causes considerable physical and psychological stress (Edvardsson & Nay 2010:64). King's College Hospital has recognised this and we are fortunate to have an activities service which we believe to be unique in such a large acute hospital in the UK. This service has three staff and covers the elderly care wards. Any member of the multi-disciplinary team can refer and we see patients for group or individual treatments. The service aims to enhance quality of life, help patients to rediscover their interests and potential, promote socialisation and reduce the impact of hospitalisation. Activities vary depending on patient's needs/ interests but can include reality orientation, reminiscence, exercise, quizzes and crafts. We try to ensure that we meet patient's individuals needs – it is recognised that most healthcare staff have limited time and high workloads; having dedicated staff who can give even a few min of "calm, attentive listening" has been shown to be beneficial for patients (Edvardsson & Nay 2010:67). Activities, however, may be seen as a luxury and not an essential component of acute care. There are challenges to providing this service in such an acute setting but we have anecdotal evidence that our service is highly valued by patients. Mindful of the current financial climate and the emphasis on evidence based practice, we felt that it was important to formally evaluate our service. We therefore carried out an audit of the numbers/ type of referrals received, attendance rates at the groups and patient feedback. This presentation will describe our service, summarise the results of this audit and discuss our plans for the future in terms of service development and further research. **References:** Edvardsson D. & Nay R. (2010) Acute care and older people: chal-

allenges and ways forward. *Australian Journal of Advanced Nursing*. 27(2): 63-69. **Keywords:** Quality of Life; Hospitalisation; Audit; Exercise.

THE IMPACT OF A NEW SENSORY ENVIRONMENT ON WARD ACTIVITIES

Christians, Jean; Stuart, Laura

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Admission to an acute hospital can be an overwhelming experience for older people. The National Dementia Strategy highlighted that it is even more challenging for those with cognitive impairment. King's College Hospital (KCH) has undergone a £265,000 refurbishment of one of its elderly care wards into a unique, sensory environment. The ward was formally opened in Dec 2011 and is already providing an improved environment for dementia patients, staff and visitors. Key features of the ward: mood lighting to promote relaxation/reduce agitation; atomisers with fragrance to aid relaxation; day/night clocks to help orientation; non-slip flooring to reduce falls; colour coded bays/new signage to improve patient's orientation; artwork/memory boxes to trigger memory/promote discussion; interactive boxes to promote visual/tactile stimulation; audio visual system in the sensory room to project changeable images. Activities groups take place in the sensory room with the aims of promoting socialisation and lessening the impact of hospitalisation. Activities include reality orientation, reminiscence, exercise, quizzes and crafts. We also have portable sensory equipment which can be used by staff/families with patients unable to attend the groups eg because they are unwell or in isolation. This includes atomisers, relaxation CDs, audio equipment and fibre optic equipment. This presentation will highlight the ways in which the sensory environment has increased the effectiveness of these groups: the room is more inviting and provides a non-clinical setting; patients are more relaxed; use of mood lighting and fragrance helps relax/stimulate patients and improve concentration; the memory boxes and pictures provide a focus for discussion. **Reference:** Department of Health (2009) *Living well with dementia: A National Dementia Strategy*. London: Department of Health/ King's College Hospital (2011) *Kings Sensory Project: The Transformation of Marjory Warren Ward*. London: KCH. **Keywords:** Cognition; Dementia; Elderly; Exercise.

THE TRAINING OF THE MONITORS THAT WORK IN PHYSICAL ACTIVITY AND SPORT PROGRAMS WITH OLDER ADULTS IN SPAIN

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Introduction: An essential factor that contributes to health in older adults are the physical activities monitors, because if these professionals are not good trained, the effects in general health could have a boomerang effect. **Objective:** To analyse the training of the physical activities professionals who work with older adults by age, gender and sport associations. **Methods:** The quantitative methodology consisted of a cross-sectional survey that was conducted through a standardized personal interview using a questionnaire. The final sample size was 361 monitors (63,2% men, 36,8% women). All the statistical analyses were done using the SPSS/Windows 19.0 statistical software. The inferential analysis with Cronbach's was .785. Signification levels were set at $p < 0.05$. **Results:** 41% of the sports monitors who work in physical activity and sport programs with older adults are not qualified. 59% of monitors have a sports qualification. By gender, 64% of men have a sport qualification and

36% of them do not have any sport qualification, regarding to women, 50,4% have a sports qualification and 49,6% of them do not have any sport qualification. By age, 65,4% of the sport monitors under 30 years are qualified and 34,6% are not; 56% of the monitors older than 45 years are qualified but 50% of them are not qualified. By organizations, 42,1% of the monitors who work in private organizations are not qualified and 57,9% of them have a sports qualification; in public organizations, 30,6% of the monitors do not have any sport qualification but 69,4% have sport qualification. **Conclusions:** About half of these monitors do not have any sport qualification and women show higher values of non qualified staff than men. In private sport organizations, the number of non qualified sport monitors is higher than in public sport organizations. **Funding:** The research reported is a past of the Fundamental Research Project I+D+i DEP2009-12 828 which has been funded by the Ministry of Science and Innovation. **Keywords:** Physical Activity; Sport; Training; Monitors.

PERCEPTION OF IMPORTANT LEADERSHIP OF MONITORS WORKING WITH PROGRAM PHYSICAL ACTIVITY OF OLDER ADULTS IN SPAIN

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Introduction: The importance of human resources programs that develop physical activity and sport is essential for safe and effective implementation and to ensure the benefits of physical activity and sport as well as the influence of its leadership. **Objective:** To study the perceptions of the importance of leadership in the work of the monitors physical activity and sport programs with older adults in Spain and their analysis by gender and age. **Methods:** The quantitative methodology consisted of a cross-sectional survey that was conducted through a standardized personal interview using a questionnaire. The final sample size was 361 monitors (63,2% men, 36,8% women). All the statistical analyses were done using the SPSS/Windows 19.0 statistical software. The inferential analysis with Cronbach's was .785. Signification levels were set at $p < 0.05$. **Results:** 11,1% of the monitors perceive that leadership is not important, 18,3% important and 70,6% very important. By gender, 11,8% of men believe that leadership is not important, 18,4% important and 69,7% very important; and 9,8% of women perceive that leadership is not important, 18,1% important and 72,2% very important. By age, 12,8% of monitors under 30 years believe that leadership is not important, 19,6% important and 67,6% very important; 10,8% of monitors 30 to 50 years perceive that leadership is not important, 18,2% important and 71% very important; and 4% monitors over 50 years believe that leadership is not important, 12% important and 84% very important. **Conclusions:** Most monitors programs working in sport and physical activity with older adults in Spain perceived that the leadership in their very important job, women more than men and as age increases perceived leadership is more important. The research reported is a part of the Fundamental Research Project I + D + i DEP2009-12 828 which has been funded by the Ministry of Science and Innovation. **Keywords:** Leadership; Physical Activity; Sport; Monitors.

ACTIVE AGEING AND SIGHT LOSS

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Sight loss greatly impacts individuals' wellbeing and ability to maintain an active lifestyle as they age. The older you are the more likely you are to be living with sight loss: around 1 in 9 people over the age of 60 are living with sight loss; increasing to around 1 in 3 people over the age of 85. People with sight loss must acquire a whole new set of skills and learn new coping strategies. 20% of blind and partially sighted people over 75 won't have left their home in the last week, or even been into their own garden. UK Vision Strategy wishes to present a workshop which highlights the prevalence and impact of sight loss in the UK, notes prevention strategies, and examines what Active Ageing means for blind and partially sighted people. How can wellbeing and quality of life be improved, how can barriers to an active lifestyle be removed, how can important health messages be conveyed and acted upon? We will present two pieces of research on this area. Firstly we will present Future Sight Loss UK, epidemiological research detailing the prevalence and cost of sight loss in the UK and the impact on quality of life. Secondly we will present findings from: Finding Your Feet (DH (England) Innovation Fund Project; Looking Forward Programme (Scottish project). Finding your Feet, supports individuals through peer support and coproduction to improve wellbeing and quality of life whilst promoting important health messages and active living. Workshops allow people to share information, experiences and emotions, challenge each other's assumptions about their capacity to cope with sight loss and build their own and each other's confidence. This lays the foundations for people to achieve their ambitions of an active and healthy life. Similarly, Looking Forward uses group sessions to create a supportive environment where people discuss problems and solutions with others who are experiencing similar difficulties allowing them to regain independence. **Keywords:** Active Ageing; Visual Impairment; Wellbeing; Quality of Life; Active Ageing.

CREATIVE ARTS FOR THE WELLBEING OF OLDER PEOPLE

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This study was funded through the Centre for Older People's Agenda (COPA), Queen Margaret University. Esquivel and Hodes' (2003) definition of creativity was adopted, namely, a person's ability to produce new original ideas irrespective of the discipline they are working in. Its development, they believe, is influenced by social and cultural factors. This collaborative research project explored the experiences of creativity for recently retired people in terms of their perceived wellbeing. An action research methodology was used to involve a group of fifteen volunteers from the local community. Two co-researchers from the same age range but from outside the area were invited to monitor the process. Recorded semi-structured interviews with focus groups generated qualitative data which gave insight into how and why they engaged in the arts (or not), and what they felt they gained from their involvement. A day of arts workshops was organised, which comprised visual art, drama, music and dance, with the emphasis on individual and group creativity rather than following prescriptive instruction. Hence they felt a heightened sense of ownership of the creative work. To ensure triangulation, these were observed by the researchers and co-researchers, and were followed by a group discussion. Key findings were that the feeling of belonging to a community was important; friendships were formed and new skills were acquired through art activities, which challenged and stimulated the participants socially and cognitively. The stimulation of new forms of creativity was perceived to be beneficial to mental and physical wellbeing, but the activities had to be fun as well. **Reference:** Esquivel, GB and Hodes, TG.

2003. Creativity, Development and Personality. In J Houtz (ed.) The Educational Psychology of Creativity Ch.7, pp. 135-163. Hampton Press, Cresskill, NJ. **Keywords:** Art; Wellbeing; Elderly; Creativity.

HOW INTERVAL GYM TRAINING HAS AN EFFECT ON SENIORS OVER 70 YEARS

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Background: The amount of seniors is increasing rapidly in Finland over the next few decades. The Finnish inpatient service system shall be terminated in the coming years and services are offered more at seniors own homes. Seniors that are living at their own homes can meet some risks such as loneliness, decrease of physical abilities and quality of life as well as depression. **Aim:** To analyze the influence of interval gym training on seniors' over 70-years physical skills, quality of life, depression, and social relationships. **Method:** The study was carried out in Finland during years 2010-2011 and it continued 15 months. Structured questionnaires were used as a data collection method by group interviewing. Study group participants were collected from home living seniors, who were volunteers (N = 97) to participate two times a week to guided gym training. Control group (N = 75) participants were selected by systematic sampling from home living seniors. The data was analysed statistically by using SPSS software. **Findings:** Study group: During a half year follow-up time physical ($p = .034$) and sleeping abilities ($p = .006$) got better. During one year follow-up time urination and evacuation ($p = .004$) and daily activities ($p = .013$) got better. At the same time depression ($p = .000$) and anxiety ($p = .001$) decreased significantly. Hand grip strength of both hands ($p = .000$) got better during a half year follow-up time, up from the chair got better both half year ($p = .000$) and one year ($p = .000$) follow-up times. Control group: None of the above mentioned changes were occurred. The results were almost significant in depression test, where three variables got worse during one year follow-up time. Two variables of social activity-test got worse too. **Conclusion:** Guided, interval gym training two times a week can increase over 70-years old seniors' physical skills, quality of life and social relationships as well as prevent depression. **Keywords:** Depression; Quality of Life; Gym Training; Social Relationship.

THE USE OF EFQM CRITERIA ON THE PHYSICAL ACTIVITY PROGRAMMES FOR ELDERLY PEOPLE: RESULTS OF A CLUSTER ANALYSIS

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Background: Quality is an important issue when designing a physical activity (PA) programme for older people. The Excellence Model of the European Foundation for Quality Management (EFQM) has been widely suggested as an operational framework for evaluating the quality of an organization. In this study we apply the EFQM framework to the context of PA programmes for older people in Portugal. **Aims:** 1) to distinguish groups of PA programmes according to the implementation of the quality management practices (QMP), and 2) to provide an exploratory characterization of the identified groups concerning the profile of the programmes' coordinators and the programmes' features. **Methods:** A meth-

odological triangulation was conducted in 26 PA programmes using questionnaire surveys, semi-structured interviews and document analysis. Cluster analysis using Ward's method of agglomeration with squared-Euclidean distance measures was used to identify subgroups of PA programmes based on the results of the QMP associated with the EFQM's criteria. The significant differences in categorical variables and continuous variables among subgroups types were compared with the chi-square test and the Kruskal-Wallis test, respectively. **Results:** We identified four clusters of PA programmes. They differ essentially in degree of implementation of each EFQM's criterion and scope of all criteria. No significant differences were found between clusters for their general characteristics, except for the number of facilities managed by the programme ($p \leq 0.05$). **Conclusions:** Clustering identified four subgroups of PA programmes. The number of facilities is significantly associated with the created clusters. Since the quality of a service increases customer satisfaction, the continuous improvement of the PA programmes should be implemented to increase elderly satisfaction and adherence. **Keywords:** Physical Activity; Satisfaction; Management Practice.

LANARKSHIRE MOVERS AND SHAKERS CHAIR BASED EXERCISE PROJECT

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The aim of this project is to increase exercise opportunities for frail older people in Lanarkshire's care homes and day care units. The project aims to enable staff to confidently and safely deliver chair based exercise. The physical and psychological benefits of exercise are well known, however, opportunities for frail house bound older people can be very limited. A half day training session is delivered on a monthly basis by a NHS physiotherapist, an Alzheimer's Scotland trainer and Local authority staff with a special interest in activity of older people. The training consists of theory and practical elements. The theory covers aspects such as the potential benefits of chair based exercise, common medical conditions, precautions, and general delivery advice. The practical aspect of the training covers general chair based exercises, the use of equipment and relaxation. Evaluation of the project is underway in terms of numbers of staff trained, service-user and staff feedback and amount of activity time. Initial feedback from staff and service-users alike very positive. **Keywords:** Exercise; Elderly; Care Home.

LIVING WELL IN NORTH LANARKSHIRE

Callaghan, Paul; Blair, Sandra

North Lanarkshire, UK

This workshop will showcase some of the innovative developments that have or are being implemented in North Lanarkshire Council. These projects promote positive engagement with older people living in North Lanarkshire. Some of these initiatives are: Safe Walking - This has involved the use of GPS technology to assist people with a cognitive impairment to remain active in their community. Dementia Capable Community - We are working in partnership with the local business community to raise awareness of dementia and improve the business community's capacity to cater for people living with this condition. Locality Link Officers- This is a well established service that assists older people to participate and keep connected to their community. Living Well Strategy which the council and its partners have implemented to ensure that older people are valued as active members of our society. **Keywords:** Walking; Technology; Dementia

INTEGRATED MEMORY STIMULATION: WHAT'S THAT ALL ABOUT?*McLean, Fiona¹; Manson, Barbara²**¹NHS Highland, UK; ² Fortrose, Highlands, UK*

Integrated Memory Stimulation (IMS) was developed by the authors from their clinical experience as Occupational Therapists after memory training in Europe. The authors questioned why training was not available in the UK for well older adults with subjective memory issues to prevent decline in mental well-being, skills and self-efficacy. Community opportunities exist for well older adults in some areas but nothing for subjective memory issues to improve self-management. The model of IMS was developed to improve mental well-being via a multi-factorial programme with integrated activities focusing on memory and cognitive training, information processing training, health education, physical and social activities. This is a groupwork programme. A systematic review was supported by a review of current evidence on each component of the IMS model with funding from The Bupa Foundation. A 13 week intervention programme with two booster sessions was developed. No other comprehensive and synthesised piece of work focusing on the full range of elements involved in IMS was found during the review. Current evidence from each of the components of IMS will be presented ie markers to improve mental well-being; improving self-efficacy; elements that influence subjective memory issues; techniques, strategies and activities from the programme; benefits of social stimulation; training for trainers; and effects of physical exercise. Demographics provide stimulus and justification for developing new models with an evidence base for the increasing number of older adults who experience subjective memory issues. The model of Integrated Memory Stimulation can be seen as a means of a new service development in self-management. The ultimate aim is to pilot the intervention of Integrated Memory Stimulation and if proved efficacious, roll out throughout the UK for the benefit of people who are experiencing subjective memory issues which affects their well-being. **Keywords:** Wellbeing; Memory; Cognition; Exercise; Demographics.

IMPACT OF THE SOCIAL EDUCADOR ACADEMIC SKILLS IN THE ACTIVE AGEING PROMOTION*Amante, Maria João; Fonseca, Susana; Araújo, Lia**Polytechnic Institute of Viseu, Portugal*

The Social Education, aiming to empower people and social groups with relevant resources to address the challenges of their historical moment, for their cultural, social and economic inclusion (Caride, 2005), has an important role in the emerging social challenge of demographic aging. The academic preparation of Social Educator Workers should be based on the Active Ageing paradigm (WHO, 2002), in order to contribute actively in health promotion and in the improvement of new opportunities of participation and citizenship through a socio-educational intervention. The aim of our study is to explore the impact of the Academic skills developed in the Social Education Degree of the Polytechnical Institute of Viseu on the active ageing promotion. The design was an exploratory study, with a sample of social education interns (n = 29), practice supervisor (n = 12) and elderly participants (n = 110). The Practice included several activities in institutional and community context. Physical activity was selected as the favourite for most of the participants (90%). The results impact for the developed activities, on target population, show personal, socio-educative and community benefits, being the personal dimension the mainly reported for the practice supervisor (46.2%) and for the education interns (79.7%). The most valorized personal dimension subcategories

for both groups were the “interpersonal relationships” and the “increase of occupational dynamics.” 90% of the elders inquired referred to “be more happy” and 85% “learn new things.” Through the professional practice the Social Education Degree Academic Skills reveals a positive effect in active ageing promotion of the target population. The Practice is evaluated by the three groups (interns, practice supervisor and elderly participants) as important for the personal, socio-education and community development. **Keywords:** Active Ageing; Demographic Ageing; Physical Activity

REACH FOR ACTIVE AGING: RESEARCH EDUCATION ALLIANCE FOR CHANGING HEALTH

Evans, Ellen M.; O'Brien, Anne E.

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The obesity epidemic, combined with the aging demographics, is predicted to produce a society afflicted with chronic diseases and loss of independence. Future work needs to move the vast amounts of evidence-based research findings into effective sustainable community programs. A recent federal grant call titled “Translational Research to Help Older Adults Maintain their Health and Independence in the Community” emphasizing partnerships between academic research centers and community-based organizations highlights this need. One of the most consistent correlates of physical activity and nutrition behaviors is self-efficacy. Framed in the well-known social cognitive theory (SCT) of Bandura, self-efficacy expectations reflect individuals’ beliefs in their capabilities to successfully meet a challenge, the effort they put into chosen behaviors, and how long they persist when faced with obstacles to their goal. Theoretically based in SCT, peer coaching has been shown to be highly effective in fostering positive health behavior change. Recent data suggests that older adult peer or undergraduate student mentors are equally effective for improving fitness in older adults. Our academic unit has successfully partnered with the Osher Lifelong Learning Institute (OLLI; a university-affiliated volunteer adult education organization with ~1000 older adults), with a practicum capstone course which parallels our academic course, titled “Physical Activity and Aging,” to deliver a physical activity program to older adults. The planned second phase will partner with Human Kinetics to adapt Active Living Every Day and Healthy Eating Every Day, two evidence-based behavior change programs, for the OLLI curriculum and will combine older adult peer coaches with our students. This integrated approach will serve as a highly effective and sustainable program for older adults in the community while simultaneously providing critical experiential training for our future professionals. **Keywords:** Health; Active Ageing, Obesity, Disease; Physical Activity

NORDIC WALKING AND ACTIVE AGING CONCEPT

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It is well-known that lifestyle and behaviour have a greater influence on how people age than any other factor, including genetics. Regular physical activity is a scientifically-based means of reducing the risk of a number of diseases, contributing to prolonged independent living and enhanced quality of life. Of particular concern is a very low physical activity levels typical among older individuals. Policies and programmes should encourage inactive people to become more active as they age and to provide them with opportunities to do

so. It is right time to strive for a behavioural change both in minds and policies. Through coordination and collaboration, consistent messages and programs pertaining to active life style we may have a significant impact on society and lead to long-term, positive change. Nordic walking seems to be in keeping with the main principles of the active living and active aging concepts. It possesses definite advantages such as functionality, safety and availability for almost everyone, moreover it helps to involve elderly people into the process of health maintenance as well as into the social relationships maintenance therefore it can serve as a universal tool of active aging. The experience of the northern countries and namely of Finland shows that such activities are highly in demand for those who are searching for some available method to keep fit and competitive in the changing world. In Europe this concept becomes more and more popular involving people trying to avoid all the negative changes aroused by aging. In SPb we launched a study to analyse the reasons to evade physical activity, search for education strategies to inform older adults about the personal benefits of active aging and teach them how to practice NW, as well as to design guidelines for adoption of NW as physical activity for geriatric and day care centres. **Keywords:** Nordic Walking; Active Ageing; Lifestyle; Behaviour; Quality of Life.

IMPACT OF BODY COMPOSITION AND PHYSICAL ACTIVITY ON FATIGUE IN OLDER MEN AND WOMEN

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Fatigue is a common complaint among older adults. Higher levels of habitual physical activity (PA) and lower adiposity have both been shown to be associated with increased perceptions of energy. Although across the lifespan, women report more fatigue than men, data from our lab and others demonstrate equivocal evidence for sex disparity in fatigue. The aim was to determine if relations among PA, adiposity (%Fat), central adiposity (%C-Fat) and fatigue differ in older men and women. Adults ($n = 325$, 43% male, 71.7 ± 7.1 yrs) were assessed for body composition by DXA and PA by questionnaire. Fatigue was measured via the Multi-dimensional Fatigue Inventory, in which higher scores indicate greater fatigue [general (GEN), physical (PHY), mental (MEN), reduced activity (R-ACT), reduced motivation (R-MOT)] and the Vitality Scale (VIT) of the SF-36. Because stress and sleep quality are known determinants of fatigue, the Perceived Stress Scale and the Pittsburgh Sleep Quality Index were also administered. Males had greater PA, lower %Fat ($32.1 \pm 7.6\%$ v $37.2 \pm 9.2\%$) and %C-Fat ($32.0 \pm 8.2\%$ v $39.1 \pm 13.4\%$) compared to females (all $p < .01$). Females reported more mental fatigue (MEN; 8.3 ± 3.5 v 7.5 ± 2.8 ; $p = .03$) and poorer sleep quality (4.6 ± 3.1 v 5.0 ± 3.2 ; $p = .05$) than men. Sleep quality and perceived stress were related to all measures of fatigue in both sexes (all $p < 0.05$), thus were controlled in subsequent analyses. In women, %Fat was related to GEN ($r = .17$, $p = .03$) and R-MOT $r = .17$, $p = .03$; %C-Fat was related to GEN ($r = .15$, $p = .05$) and R-MOT ($r = .24$, $p = .002$) and PA was correlated with GEN, PHY, R-ACT, and R-MOT (r range = $-.23$ to $-.33$, all $p < .05$). In men, %Fat and %C-Fat were not related to any measures of fatigue (all $p > 0.05$); while PA was correlated with VIT ($r = .25$, $p < .01$) and GEN, PHY, R-ACT, R-MOT (r range = $-.20$ to $-.27$, $p < .01$). PA may be an important behavioral target to reduce fatigue in both older men and women with the latter cohort also potentially benefiting from reducing adiposity. **Keywords:** Physical Activity; Fatigue; Body Composition.

E-CORE (EMBODIED COGNITIVE REHABILITATION): A NOVEL COGNITIVE REHABILITATION SYSTEM USING TANGIBLE TABLETOP INTERFACES

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In this study, we present a novel cognitive rehabilitation system using tangible tabletop interface (TTI) that consists of tangible object and digital tabletop. Since most computer-based cognitive rehabilitation systems are only emphasizing on cognitive task, the role of body in cognitive rehabilitation has been less appreciated. While, conventional occupational therapies using real objects has shown good results in cognitive rehabilitation and become a good compensation to meet another need in cognitive rehabilitation program. In order to reinforce the coupling of body and mind as well as support cognitive training objectively, intelligent tangible objects and computerized table with digital contents should be combined as a platform for cognitive rehabilitation. TTI comprises of a tabletop interface serving as presenting digital contents and recognizing touch interactions on display, tangible objects equipped with various sensors to detect user's natural manipulations, and a stereo camera to recognize user's gestures. Based on the result of focus group interviews with experts to develop a training program, we built a cookie making game as a case of instrumental activities of daily living. The game, training three dimensions of cognitive abilities (memory, attention and executive ability), has tasks such as memorizing and making various types of cookies using tangible tools (cutter, syrup and topping container). A heuristic evaluation was conducted by experts to investigate the usefulness of the system. Five experts reported the system well explains how interacting with real objects and environments help train cognitive abilities based on an overarching theory of embodied cognition and situated cognition. In addition, they were positive to use this intuitive interface that allows close coupling of action space and perception space to address cognitive mismatch caused by the disposition between information and interface. **Keywords:** Cognition; Rehabilitation; Technology.

PERCEPTION AND ATTITUDE OF STUDENT NURSES TOWARDS THE CARE OF ELDERLY PATIENTS IN ILE-IFE, NIGERIA

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This study assessed the perception, attitudes and knowledge of student nurses towards the care of elderly in Ile-Ife. Utilising a cross-sectional quantitative descriptive design, 280 respondents were selected through a systematic sampling technique from institutions of learning for nurses in Ile-Ife. Data were collected with the aid of validated self-administered questionnaire and analysis including descriptive and inferential statistics was done using Statistical Package for Social Sciences. Result showed that respondents believed that nurses should be patient, cheerful and sensitive (97.2%); as well as empathetic (91.4%) when caring for the elderly. They further expressed that caring for the elderly goes beyond the basic nursing care (66.1%) and 90% of the respondents thought that there is a need for an elderly care unit in the hospital. This study revealed that 66.1% and 71.8% respondents had a positive perception and attitudes towards the care of older people respectively. Sixty% demonstrated good knowledge of essential clinical practice in the care of older patients. However, the result showed that, there is no significant relationship between knowledge and attitude of the respondents ($\chi^2 = 2.43$; df = 2; $p = 0.296$), and no significant relationship exist between age and attitudes of the respondents ($\chi^2 = 7.29$; df = 3; $p = 0.063$) The study concluded that

the positive perception and attitude as well good knowledge demonstrated by student nurses towards the care of the elderly should be reinforced; this will subsequently enhance a better clinical outcome in the care of the elderly.

EVALUATING THE IMPACT OF ALLOTMENT AND COMMUNITY GARDENING FOR OLDER PEOPLE'S HEALTH AND WELL-BEING

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Background: There is a growing interest in the potential added benefits to health of conducting physical activity in contact with nature but there is a lack of research in this area that has focused on older adults. There is also emerging evidence which suggests a potential role of allotment and community gardening projects for enhancing individuals' health and well-being, however, robust evidence demonstrating how and why gardening may be beneficial is limited. In addition, it is not known whether the benefits of gardening individually as the sole tenant of a plot of land are different to gardening communally on a shared plot of land.

Aims/Objectives: The 'Growing a Healthy Older Population in Wales Project' (GHOP) was funded by the National Institute for Health and Social Care Research of the Welsh Government to develop and implement a sophisticated methodology for evaluating the benefits to health and well-being of allotment and community gardening for older adults. **Methods:** The project has used a 12-month action-research approach involving a systematic review, field visits, and meetings with key stakeholders at all stages to develop a robust research design involving quantitative and qualitative methods. **Results:** The design comprises a complex intervention study where new and existing allotment and community gardeners complete a range of health and well-being measures at baseline, 2 month, and 4 month follow-ups. **Conclusion:** At the time of the congress, data from the baseline and 2-month follow-ups will have been analysed and will be available for presentation, as well as some preliminary findings from the 4-month follow up measures. The results of the literature review and action-research process will also be discussed.

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