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Symposia

SY01-03

Behavioral of psychological symptoms of dementia (BPSD) in a clinic sample in Nigeria, and implications for treatment

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A Akinnuoye, *University College Hospital, Nigeria*

Introduction: BPSD is an important source of distress to family and is responsible for nursing home placement in most societies. In societies where nursing homes are unacceptable to families, it becomes necessary to work with family in management of demented patients with BPSD in order to improve quality of life of both patients and caregivers.
Method: We report on a subset of patients who were assessed at the Geriatric Psychiatry Clinic of the University College Hospital, Ibadan. All patients who met DSM IV diagnosis of dementia had diagnostic work up which included neurological evaluation, liver and renal function tests, hematologic profile, thyroid function tests and fasting blood glucose. In addition CT scan was done as available and all patients were also administered Mini Mental State Examination and Blessed Dementia Scale. Neuropsychiatric Inventory and Zarit Burden Scale were administered to caregivers. Study was approved by our Institution Review Board.
Result: Fifty patients 16 males, 34 females were assessed. Mean age was 81.12 (8.04) years, 70% were widowed and 68% had no formal education. Caregivers were 17 males, 33 females, mean age was 50 (16.07) years, 68% had no formal education. Spouses and female carers expressed more distress and those who had to leave jobs to care for patients expressed higher burden. The more distressful symptoms were elation, apathy, agitation, hallucination, night time behaviour, irritability, aberrant motor behaviour and appetite change.
Discussion: Caregivers in this series are mostly female children of patients with dementia. Distress was higher in those who had to leave jobs, and in spouses. In our society children are expected to look after sick parents but when that leads to loss of job burden increases. Most behaviour symptoms are amenable to standard antidementia and antipsychotic drug therapy. Non pharmacological treatment methods used are exercise, reminiscence, music, environmental manipulation and psychoeducation of caregivers generally. We also counselled on legal and financial issues. Over the past few years we observe that there is a high default rate, because many caregivers look forward to complete cure of their relations, more importantly there is no public support and families have to make out of pocket payment for hospital services.

SY01-04

BPSD in South Korea

Guk-Hee Suh, *Department of Psychiatry, Hallym University Dongtan Sacred Heart Hospital, Korea*

Proportion of elderly people age 65 and over is 12.3 per cent. Number of people with dementia is estimated 0.54 million. All Korean people (N = 50 million) are covered by the Nation Health Insurance Scheme which was implemented in 1977. Long-term care insurance scheme was implemented in 2008 to provide home care, community care, and residential care for disabled elderly people with dementia and stroke. Life expectancy at birth is 79.6 years (male 76.5 years, female 82.9 years). Since 2008, awareness of the significance of dementia and BPSD has greatly raised. Before 2008 when there was no public assistance for dementia care, caregivers, have not made a concerted effort to find symptoms and signs of dementia. At that moment, dementia and BPSD might be perceived as a consequence of ageing. Thanks to long-term care insurance, caregivers could reduce burden of caring for dementia if they officially reported symptoms of dementia including BPSD and could get approval for the long-term care. Medias, doctors organizations and Alzheimer's association continued campaigns to raise awareness of dementia. In 2009, president of the Korean government declared the war against dementia, which has succeeded till now. Rating scales for BPSD such as the CMAI, BEHAVE-AD and NPI have been validated and widely used in Korea. Further the Korean versions of CERAD, GMS, CAMDEX, CIDI, and the DIS are also available. Initiation of anti-dementia drug prescription should be carried out mostly by dementia experts. Slow initiation of treatment in newly diagnosed patients might be attributed to the pessimism about dementia as an incurable disease and to the

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unwillingness of patients and their family to receive treatment. All available anti dementia drugs (i.e., donepezil, rivastigamine, galantamine, memantine) have been used as first-line drug. Vitamin E and ginkgo biloba are used for combination therapy.

SY01-06

BPSD in India

Vinodkumar Gangolli, *Masina Hospital, India*

Rapid changes in the demographic of India, as a result of improved health delivery and increasing life expectancy have resulted in an increase in older age population (currently around 80+ million and expected to double by year 2025). There is a high incidence of morbidity which is as a result of neuro-psychiatric deficits, co-morbidity and frailty. Development of BPSD (behavioral & psychological symptoms of dementia) is on the rise and care giver burden has increased. Adding to this problem is the significant paucity of psychogeriatric services.

There is an urgent need to establish some form of psychogeriatric services to tackle this problem. Given the limited resources and manpower, along with cultural impediments, we felt that most ideal way to deal with this problem was to establish novel indigenous non pharmacological management of BPSD.

We are outlining the cross-cultural issues impacting on the management of BPSD, along with how we have modified and utilized them in our management of BPSD.

SY02-01

Psychosocial research consortium to advance mental health of older people in the Asia Pacific region (PROMOTE)

Henry Brodaty, *Dementia Collaborative Research Centre and Centre for Healthy Brain Ageing, University of New South Wales, Australia*

Psychosocial research is an umbrella term that covers: causes and risk factors, mediating factors and contexts and outcomes. In psychogeriatrics it applies to mental disorders and behaviours occurring in older people, to their family carers, to professional carers, to systems of care, and to interactions with the environment. Approaches to psychosocial research derive from diverse sociological, psychological and social epidemiological paradigms, and from different theoretical frameworks.

Often the poor cousin to biological and clinical research, psychosocial research struggles to gain publication in high ranking journals, compete for research grants or to gain academic kudos. Yet many major advances in psychogeriatrics have been psychosocial and these have led to improvements in quality of life for older people with mental disorders and their families and cost savings for the community.

Despite their rapidly ageing populations and the projections that Asia-Pacific countries will account for half the world's older population with mental disorders within a generation, psychosocial research is poorly developed in this region. Furthermore, as local research conducted in many of the countries in the region is often published in their own language little is known about their research outside their countries. By bringing together prominent investigators from six Asia-Pacific countries to describe local psychosocial research initiatives in psychogeriatrics, this symposium proposes to lay the foundations for the establishment of a regional consortium to advance psychosocial research and to enable collaboration, joint research programs, mentoring, training and dissemination of findings, and to facilitate cross-cultural knowledge translation.

SY02-02

Effectiveness of community-based intervention program for family caregivers of dementia: A mixed methods study

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Dementia accounts as one of the major mental health problems in the old age. In China, family members would mostly prefer keeping the patient at home until the very advanced stage and even the end of life. This project aimed to explore the feasibility of providing family caregiver of dementia intervention in the community and potential facilitators and barriers for implementing the project, and to preliminarily examine the effectiveness of the intervention on maintaining the living skills and improving quality of life of patients with dementia. Family caregivers of dementia were recruited in community health centers and randomized into intervention group and waiting-list control group.

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In intervention group, eight modular training for family caregivers was delivered weekly. Activity of daily living (ADL) of patients and caregiver burden were measured at baseline and 1, 3, 6 months after the intervention. The research participants were interviewed with a semi-structured in-depth interview guideline. The preliminary results will be reported on the symposium. This is the first family caregiver intervention program translating clinical service into the community. The findings are expected to improve the community service for people with dementia and their families.

SY02-03

Psychosocial research about mental health of older people in Japan: Challenges in disseminating findings

Yumiko Arai, *Department of Gerontological Policy, National Center for Geriatrics and Gerontology (NCGG), Japan*

As the fastest-ageing society in the world and one where National Long Term Care insurance was implemented in 2000, Japan may have findings from psychosocial research that have much to offer other countries with ageing populations. However, unlike biomedical research, psychosocial research tends to depend on the native language and culture of the participants and researchers who are involved. The challenges faced by psychosocial researchers in non-English speaking countries when disseminating their research findings to their overseas colleagues is the topic of this presentation.

For example, when conducting psychosocial research, we choose the best scales for each particular research project. Even if these scales are not validated in English, usually there would be no problems locally. However, researchers often find it difficult to publish their findings in journals in English as such scales are often claimed to be "not internationally recognized as valid".

To avoid such an outcome, researchers residing in non-English speaking countries often try to find a relevant scale in English, and then translate and validate such a scale into their own language. This approach, although allowing researchers to share research findings with their overseas colleagues more easily, has shortcomings. First, the findings are often not disseminated to care professionals or to many academics in their own country who may read mainly local journals. Second, the measure, even if well-translated, may not capture the cultural distinctions or connotation of issues that need to be tackled urgently in the researcher's own country.

Using my own experience in conducting research on family caregiver issues in Japan as an example, I will describe some of the difficulties in disseminating findings from a non-English speaking country and will discuss possible approaches for making the best use of our local research to contribute to promoting psychosocial research in this region.

SY02-04

Recent trends of psychosocial research on dementia in Korea

Jongchul Youn, *Department of Psychiatry, Gyeonggii Provincial Hospital for the elderly, Korea*

Objective: To cope with serious problems caused from dementia, dementia management law was legislated and national dementia plan was also published by Korean government. According to this plan, psychosocial research on dementia will be activated more than ever before. In this situation, this study was aimed to review the results of previous studies and describe the recent trends of studies using psychosocial approach to dementia in Korea.
Methods: Psychosocial studies on dementia in Korea were searched via electronic database including Medline and Google scholar for English text, Korean medical data based for Korean text. In addition, published government reports and several research proposals for ongoing research were also reviewed to supplement the description of current situation in Korea.
Results: In Korea, psychosocial research on dementia has been focused on some issues including caregiver burden and neuropsychiatric symptoms of dementia. But recently topics of psychosocial research were varied from community and long term care service and economic cost to public awareness. Based on the results of descriptive studies, several intervention studies were conducted including cognitive rehabilitation, activity based program and psychoeducation. In the present, several projects including large scale community based dementia care intervention are currently underway.
Conclusion: Although psychosocial research on dementia has not been highlighted in Korea, it is a useful method to improve the real world dementia problems. To achieve this goal, qualified psychosocial studies on dementia in various aspect of human life should be stressed.

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SY02-05

Psychosocial research about mental health of older people in Singapore

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Singapore is a Southeast Asian island city-state. There are slightly over 5 million people in Singapore living in a land area of about 704 square kilometer. The population is highly diverse. The majority is Chinese with almost 75% of the total population, while Malays and Indians forming significant minorities.

Singapore has become an aging society since 2000 with at least 8% of its population aged 65 and above and will increase to 18% in 2030. Singapore's population is expected to age at a faster rate than countries like South Korea, Australia, U.K. and the U.S.A.

Old age mental health issues have taken on greater importance with the growing awareness among policy makers of the importance of mental health in older adults. Studies found about 12% older persons in Singapore had depressive symptoms or suffered from major depression or co-morbid depression. About 5.2% of people over the age of 65 are suffering from various types and stages of dementia. The number of people with dementia will be more than double by 2020.

Earlier research on old age mental health in Singapore focused on epidemiological studies. The development of psychosocial research about mental health of older people is at its infancy stage.

This presentation will provide a brief outline of the psychosocial studies that the presenter is currently engaged in which include psychoeducation intervention for family caregivers of people with dementia, bibliotherapy for older adults with depression and intervention to promote resilience and positive aging.

SY02-06

Psychosocial research about mental health of older people in Australia

Yun-Hee Jeon, *Faculty of Nursing and Midwifery, the University of Sydney, Australia*
H Brodaty, *School of Psychiatry, University of New South Wales, Australia*

Objective: Psychosocial research is gaining an increased attention in nursing, psychology and other disciplines (e.g., medicine, psychiatry) that used to be traditionally bio-medically focused in their approaches to mental illness and dementia. A scoping review of primary research was conducted to describe the status of psychosocial research evidence in Australia concerning social and psychological aspects of mental illness, and psychological and social treatments, interventions and approaches designed to improve outcomes for older people with mental illness with and without dementia.

Methods: A systematic search of electronic scientific databases including Medline, PsycInfo, EBM Reviews and CINAHL was conducted. Snowballing of the references and expert consultations were also used to enhance comprehensiveness of the search process. Population of interest for this review included people who are aged 65 years and over and diagnosed with schizophrenia, bipolar disorder, anxiety disorders, recurrent unipolar depression and/or dementia. Papers reporting systematic or critical reviews of literature or research conducted outside Australia, or those neither peer reviewed nor published in English were excluded.

Results: After reviewing titles and abstracts of 1,295 papers found on the initial search, 275 papers were deemed relevant to the scoping review of which 25% (n = 70) focused on dementia or with a specific attention to behavioural and psychosocial symptoms of dementia (BPSD). Twenty-three were randomized controlled trials (RCTs), most of which related to psychosocial interventions for BPSD in residential aged care settings. Major methodological gaps in psychosocial intervention research concerning older people's mental health were identified.

Conclusion: Translation of research evidence into policy and practice requires action beyond publication of research outcomes. Issues and challenges of conducting RCTs of psychosocial research in the psychogeriatric population, and translating such evidence need further scrutiny. Future research directions will be discussed in this regard.

SY03-01

Spaced retrieval training in mild cognitive impairment and early Alzheimer's disease

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Objective: Spaced Retrieval Training (SRT) is a method of learning and retaining target information by recalling that information over increasingly longer intervals. It requires a trained therapist, their regular visits and high costs. We developed a self-administered SRT program using an iPad app and investigated the efficacy in mild cognitive impairment (MCI) and Alzheimer's disease (AD).
Method: The efficacy of the program on cognitive functions was evaluated by the Korean version of the Consortium to Establish a Registry for Alzheimer's Disease Neuropsychological Assessment Battery before and after SRT.
Results: The preliminary finding shows the improvement of verbal memory learning in a small number of mild cognitive impairment (MCI) subjects. After expanding the number of participants including MCI and early AD, memory function (verbal memory learning, recall, recognition, visual memory recall) and executive function show significant improvement.
Conclusion: The self-administered SRT program was effective in improving memory and was well tolerated by most participants with MCI and early AD, suggesting that it may be a convenient and cost-effective alternative for the cognitive rehabilitation of elderly subjects with cognitive impairments.

SY03-02

Memory training with metamemory concept in mild cognitive impairment and healthy elders

Jun-Young Lee, *Seoul National University, Korea*

Objective: According to the increase of older people, the need for effective methods to maintain or improve cognitive functions in the elderly has increased. These cognitive enhancing methods may contribute to the prevention of elderly cognitive decline by aging and dementing illness as well. This study aimed to examine the effectiveness of multistrategic memory training with the metamemory concept on cognitive functions in the normal health elderly in Korea.
Method: The program used in this study was developed by psychiatrists and psychologists in accordance with Korean situations. We applied the training program to the community-dwelling elderly with subjective memory complaints and mild cognitive impairment. This program consisted of 10 sessions and was administered once a week. We examined the effects of this memory training for verbal memory, visuospatial memory, working memory, and verbal fluency ability by repeated ANOVA.
Results: There were significant improvements in delayed recall, verbal working memory, and verbal fluency. These improvements were still significant after adjusting for other effects
Conclusion: This study shows that multistrategic memory training with the metamemory concept may improve memory ability and other cognitive functions which are not trained and that these improvements may be achieved by pure cognitive training effects.

SY03-03

Individualized cognitive stimulation in Alzheimer's disease: Ecological approach based on patient's expertise activities or interest centre

Stephane Adam, *Unity of Psychology of Senescence, University of Liege, Belgium*

In the last decades, a growing body of literature reported a protective association between several proxies of cognitive reserve and the development of dementia among the elderly people. In other words, staying active seems to promote cognitive health of elders with dementia. However, it is still unclear which activities would be the most beneficial and stimulating for these patients. In this respect, several theoretical (e.g., theories of successful aging, distinction between automatic and controlled processes) and clinical arguments (e.g., self-esteem) lead us to believe that a beneficial activity should be individualized, rooted in the interests and prior expertise of each patient. Indeed, these activities are most often enriching and motivating and are less susceptible to disruption caused by cognitive impairment. Our discussion will be illustrated through brief descriptions of some clinical cases.

SY03-04

The MEMO program for mild cognitive impairment and healthy aging

Sylvie Belleville, *Research Center, Institut Universitaire de Geriatrie de Montreal, Canada*

Cognitive training programs are designed to restore, optimize or compensate for capacities in persons suffering from cognitive deficits. A number of epidemiological studies have shown that a cognitively engaging lifestyle protects against age-related cognitive decline and from dementia. Thus, cognitive training can be used to promote cognitive health in normal older adults or as symptomatic interventions in persons with milder symptoms of

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Alzheimer's disease. It is however critical to provide data regarding the efficacy of these interventions as well as better understand their effect on the brain. This presentation will present a set of studies with MEMO, a program designed to promote memory by teaching semantic-based and imagery-based mnemonics (Belleville *et al.*, 2006). In the first part of the talk, the speaker will present behavioral studies in which memory and attentional training were used to improve cognition in persons with MCI and healthy aging. The MEMO program was compared to a psychosocial intervention focusing on psychological well-being and stress management. Outcome measures immediately and two-month post-training included memory tests, psychosocial scales and questionnaires measuring subjective memory and activities in daily life. Participants also received a counter that they brought home to monitor strategy use. Memory training resulted in significant improvement of cognitive functions (delayed word recall and face-name association) whereas persons randomized to the psychosocial intervention showed no such improvement. Generalisation was found on self-reported subjective measures and on complex activities of daily living. Furthermore, participants applied the learned strategies in their everyday life and this was found over the 2-month follow-up period. In the second part of the talk, the speaker will present functional brain imaging data (fMRI and ERPs) to assess the brain mechanisms that support cognitive changes due to the MEMO program. Persons with MCI showed increase brain activation following training with the program in regions associated with semantic elaboration and visual imagery. They also showed increase in the amplitude of the P2 ERP component. This component has been suggested to reflect active iniation of memory retrieval. These findings will be discussed in relation with current models of brain plasticity and compensation in aging and dementia.

SY04-01

Dietary factors and alcohol

Jin Sook Cheon, *Department of Psychiatry, Kosin University College of Medicine & Gospel Hospital, Korea*

Objectives: The final goal of dementia treatment is primary prevention. However, there is no proven method to achieve this. Therefore, secondary prevention or preventative maintenance through risk reduction and introduction of a healthy lifestyle in an attempt to postpone the onset of Alzheimer's disease is a realistic goal. The aim of this study was to understand dietary factors of promoting brain reserve and preventing or delaying Alzheimer's disease.

Methods: An internet search of literature published from 2000 through 2013 was done using combinations of the words 'nutrition' and 'brain health' or 'Alzheimer', and 'alcohol' and 'brain' or 'dementia'. These publications were subsequently reviewed.

Results: Long-term effect of nutrition on brain is to provide energy (glucose), building blocks (lipids, amino acids), micronutrients for enzymatic and endocrine process, and organoleptic property such as taste, smell and texture which modulate brain function.

1) Macronutrients: polyunsaturated and fish-related fats (omega-3, alpha-linolenic acid, docosahexanoic acid), amino acid composition of dietary proteins and regulation of glycemia contribute to cerebral function.

2) Micronutrients: vitamins (vitamin A, Vitamin B1,3,6,9,12, vitamin C, vitamin D, vitamin E, vitamin K), minerals (iron, iodine, magnesium, zinc, manganese, copper, cobalt, selenium), trace elements, non-essential micronutrients (polyphenols) are related with protection against free radicals.

3) Alcohol: modestly increase risk for neurodegeneration through vascular or oxidative mechanism, J- or U-shaped relation suggesting light to moderate use might be protective, while in some studies alcohol was not related to Alzheimer's disease.

Conclusions: Current epidemiological and experimental evidence shows that dietary factors may exert a life-long influence on brain reserve through vascular mechanism and oxidative stress. Therefore, diet which reduces vascular risk and oxidative stress (antioxidant vitamins, Mediterranean diet, fruit and vegetables, coffee and tea) can be recommended for brain health and prevention or delay of Alzheimer's disease.

SY04-02

Evidence-based methods to preserve brain health and prevent/delay Alzheimer's disease

Nazem Bassil, *Geriatric Medicine, Saint George Hospital, Lebanon*

As a consequence of global aging, the occurrence of cognitive impairment and dementia is rapidly becoming a significant burden for medical care and public health systems. The worldwide prevalence of dementia, including Alzheimer's disease (AD), is

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increasing 4-fold by the year 2050 unless suitable interventions can be found. Current treatments have not been demonstrated to prevent the onset of AD; either they improve patients symptomatically or stabilize cognitive decline for periods ranging from months to a few years. Primary prevention therefore remains the Holy Grail for this disease and reducing this imminent risk. We cannot control all risk factors for AD; we can however intervene relative to other possible AD risk factors to preserve the brain health.

There is increasing evidence that vascular disease and its risk factors play important roles in the etiology of both vascular dementia and Alzheimer's disease. Controlling vascular risk factors such as lack of exercise, diabetes, hypertension, dietary fat intake, high cholesterol, and obesity have emerged as important influences relative to the risk of both vascular and Alzheimer's dementia. However, the impact of these risk factors depends on the genetic makeup, environment, and lifestyle of the patient. Although there is insufficient evidence to make a firm recommendation for the primary prevention of dementia, physicians may advocate for some actions which may reduce the effect of possible AD risk factors mainly vascular risk factors.

SY04-03

Role of physical/mental/social/spiritual activity/exercise

Venu Jhanwar, R Goyal, *Department of Psychiatry, Deva Institute Of Health Care And Research Pvt Ltd, India*

Objective: Alzheimer's disease (AD) is a progressive neurodegenerative condition that is characterized by changes to brain structure and function, the consequences of which can be measured in significant personal and societal costs. American statistics estimate that approximately 1 in 8 older adults have AD. There are very limited pharmacological measures that are used for treatment, and results are not very encouraging. However there is ample scope of preventive measures.
Method: Review of literature incorporating author's own contributions in the area
Results: Data strongly supports that various life style measures like physical exercise, social support system, spirituality both beliefs and spiritual practices like prayers, rituals etc. have a positive effect in delaying onset of AD and also for improvement of cognition in mild to moderate AD.
Conclusion: Physical exercise, good social support and spiritual activity are helpful in delaying onset of AD and also helps in improving cognition.

SY04-04

Depression and traumatic brain injury as risk-factors for Alzheimer's disease

George Grossberg, J Manepalli, *Department of Neurology & Psychiatry, Saint Louis University School of Medicine, United States*

Objective: A variety of potential risk-factors (RF) for the development of Alzheimer's disease (AD) have been identified. This presentation will focus on data relative to depression as an early symptom as well as a RF for AD-the pathophysiology and the impact of treatment. Head trauma, particularly repetitive concussive injury to the brain is receiving increased attention as a RF, especially for early-onset AD. Beta-amyloid accumulation has been postulated. This and other putative causal mechanisms and prevention schemes will be elucidated.
Method: Review of literature incorporating author's own research contributions in the area.
Results: Data strongly support depression as a RF for AD. However, echanisms and the impact of treatment are less understood. Data are compelling that head trauma/repetitive concussive injury to the brain, especially with loss-of-consciousness is a RF for AD. Mechanisms are hypothetical. Prevention is possible.
Conclusion: Depression and head trauma are potentially modifiable RF's for AD.

SY05-01

Workforce needs for older adults with mental health and substance use disorders

David Steffens, *University of Connecticut Health Center, United States*

Over the past decade in the United States, exploding Medicare costs and the federal budget deficit have forced medical professionals, policy makers and other stakeholders to consider the consequences of an aging population. The United States Congress commissioned a report from the Institute of Medicine (IOM) on the physical health care needs of the elderly and the geriatric health care workforce required to meet them, resulting in the 2008 IOM report Retooling for an Aging America: Building the Health Care Workforce.

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Following this report, Congress recognized that the work was not finished and that more information was needed about mental health and substance use disorders in older adults. The IOM was commissioned by Congress to convene a committee to study and report on the workforce needed to care for this group. In 2012, the IOM released The Mental Health and Substance Use Workforce for Older Adults: In Whose Hands? The contents of the IOM report should be of great interest to IPA members, as its findings are generalizable outside of the United States. The document provides a thorough review of the epidemiology of mental health and substance use disorders in the elderly, characterizes the current workforce and models of care, makes clear recommendations to governmental and credentialing agencies to improve the present system of care.

SY05-02

Physical and mental health of ageing carers

Nicola Lautenschlager, *Academic Unit for Psychiatry of Old Age, St. Vincent's Health, Department of Psychiatry, University of Melbourne, Melbourne, Victoria; School of Psychiatry and Clinical Neurosciences and WA Centre for Health and Ageing, University of Western Australia, Perth, Western Australia*

Objective: With the increase of the ageing population globally, older adults will increasingly more often find themselves in the carer role. Whilst the informal carer role can be associated with some satisfaction, carers experience significant increased morbidity compared to non-carers. Therefore focusing on the physical and mental health of ageing carers should become a health priority.
Method: Review of the literature.
Results: Ageing carers are a vulnerable part of the ageing community who play an important role in society with providing care so that people with chronic conditions can remain living in the community for longer. Although there are positives aspects to providing care, the physical and emotional effort required to provide ongoing care can impact significantly on carers' physical and mental health which is more pronounced for carers looking after care recipients with dementia. Carers often do not have the time to engage in preventive health behaviors, which puts them at even higher risk of poor health outcomes compared to non-carers.
Conclusion: In light of the ageing of societies there is an urgent need to develop specific programs of support for ageing carers to improve health outcomes.

SY05-03

Interventions to improve outcomes for older carers: What works?

Briony Dow, *Health Promotion Division, National Ageing Research Institute, Parkville, Departments of Psychiatry and Social Work, University of Melbourne, Parkville, Australia*

Objective: Informal (unpaid, usually family) carers provide approximately 80% of all care received by people with disabilities or who are frail aged. Although there are some satisfactions associated with the role, it comes at a cost to most carers' mental and physical health. Over 60% of carers in the UK and Australia have some level of depression with carers of people with dementia experiencing the poorest mental health outcomes. This presentation will outline the latest research on interventions for carers, exploring some of the barriers to uptake and the clinical implications.
Method and Results: Recent research suggests some promising directions for improving mental health outcomes for carers of people with dementia. The systematic review by Selwood and colleagues in the UK found good evidence that 6 or more sessions of behavioural management therapy centered on the care recipient's behaviour improved caregiver depression immediately and for up to 32 months after the intervention. Teaching coping strategies, stress management and problem solving also reduced distress and depression but education by itself was not effective (Selwood *et al*, 2007). Physical activity, which has been shown to improve depression for older adults generally, may also be beneficial for family carers but to date, no study has explored the benefits of a home-based individualized intervention that carers and care recipients can do together.
Conclusion: Further interventions studies and implementation trials are needed to address the significant mental health problems experienced by family carers.

SY06-01

Scotland's dementia strategy

Geoff Huggins, *Scottish Government, United Kingdom*

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Objective: To explain the development and implementation of the first Scottish Dementia Strategy 2010–2013 and the development of the second Scottish Dementia Strategy 2013–2016.
Method: The presentation will set out the methods of public and professional engagement, the development of standards and workforce plans and the implementation approaches to increase diagnosis and improve post diagnostic support.
Results: During the period of the first Strategy, diagnosis rates improved from 42% of presumed prevalence to 64% of presumed prevalence at population level; increased access to post diagnostic support was available; training and workforce capability was improved through education programmes and development; there were reductions in the use of anti-psychotic drugs; standards based inspections of hospital environments were launched and action plans put in place.
Conclusion: The implementation of the Strategy identifies how programmatic work can be led by national governments, working in collaboration with professionals, carers and people with dementia to produce improvements in the quality of services and in the reach of services giving better outcomes. The work has also demonstrated the challenges both of a growing population, but also of ensuring that services are delivered with dignity and humanity.

SY06-02

Five-year plan for promotion of dementia measures, or 'orange plan' in Japan

Kentaro Horibe, *Department of Cognitive Disorders, National Center for Geriatrics and Gerontology, Japan*

Japan is ageing. Almost one out of four people in Japan are aged 65 and over. According to the latest government-led research, prevalence rate of dementia among persons aged 65 and over is estimated to reach fifteen percent, which corresponds to 4.6 million people.

For decades, Japan has been struggling to build a society where people can live in their community in a pleasant and familiar environment throughout their life, even after they suffer dementia. For this purpose, numerous services and programmes has been established or launched. For example, Dementia Care Training Programmes (1984-), Medical Centres for Dementia (1989-), Day-Care Centres for Dementia (1992-), Group Homes for Dementia (1997-), public Long-term Care Insurance system (2000-), Changeing the administrative term for dementia from "Chih?" to "Ninchish?" (2004), "Training Programme for Dementia Support Doctors" (2005-), "Nationwide Programme to Train Dementia Supporters" (2005-), and "Training Programme for Primary Care Doctors to Upskill Dementia Practice" (2006-). On June 18, 2012, Japanese government formulated the "Five-year Plan for Promotion of Dementia Measures", or "Orange Plan".

SY06-03

Dementia care in Australia

Henry Brodaty, *Dementia Collaborative Research Centre and Centre for Healthy Brain Ageing, University of New South Wales, Australia*

Of the 22 million people in Australia, 13% are aged 65 years or older and 330,000 have dementia. By 2050 it is estimated that 25% of population will be aged 65 years or older, over 8% will be aged 80 years or older and there will be almost 1 million people with dementia. The federal and state governments have responsibility for different aspects of aged care and dementia services. In essence, partial reimbursement for office medical consultations and subsidized pharmaceuticals, community care and residential aged care are federally funded; hospitals and some aspects of community care are state funded resulting in variance in practices across Australia. Public hospital care and about 80% of primary care consultations are free. Positive developments nationally include comprehensive assessment services for people wishing to access community or residential services; dementia behaviour and management advisory services; dementia training study centres; dementia collaborative research centres; an interactive internet portal providing information about available services; community support packages to enable people with dementia to stay at home longer; consumer directed care for community packages; subsidized nursing home care which is free for those unable to contribute. Challenges include reducing the stigma of dementia, delays in diagnosis, lack of referral for services, meeting demand for community packages, workforce shortages and insufficient and inequitable funding for research.

Overall, there have been impressive developments in dementia care in Australia but gaps still need to be filled. The demographics demand innovative solutions to meet the projected challenges over the next 40 years.

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SY06-04

National fights against dementia in Korea

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Korea has the quickest aging rate in the world. It will take only 26 years for Korea to move from an ageing society to a super-aged society, which happened in Western countries over 100 years. The current number of dementia patients in Korea is estimated to be about half a million, and is expected to be doubled every twenty years, reaching 1 million in 2025 and 2 million in 2043. The increase of the national dementia cost will be even faster than the growth of patient number. In 2012, the annual national cost of dementia was estimated to be about 9 billion USD, and is expected to be doubled every 10 years.

In the last two decades, Korea has implemented several key policies on dementia. The first public long-term care hospital opened in 1996 based on the "Welfare of the Aged Act". In 2007, the national long-term care insurance was established, the Dementia Counseling Centers were installed in every public health centers, and the National Dementia Early Detection Program was launched. In 2008, the first National Dementia Plan was established by the Ministry of Health and Welfare to create and maintain an integrated national plan to overcome dementia and to coordinate dementia research and services across all public and private agencies. The Dementia Management Act (DMA) passed the National Assembly in 2011 and went into effect from February 2012. The DMA provides the grounds for conducting the National Dementia Plans on a stabilized and organized basis. Based on the DMA, the Korean government designated Seoul National University Bundang Hospital as the National Institute of Dementia (NID). The NID is going to fight against dementia in collaboration with the government, academic societies and NGOs using 25 key strategies in 5 areas including care, education, infra-building, research and network.

SY07-01

The state of psychogeriatrics around the world: Challenges and opportunities

Jacobo Mintzer, *Clinical Biotechnology Research Institute, Roper St. Francis Healthcare, United States*

As the population ages, the need for geriatric mental health specialists continues to grow all over the world and across all regions. However, the level of development of professionals and services varies substantially from region to region. In some areas, funded positions for geriatric psychiatry training remain unfilled. While in other areas, there is a desperate need to train new professionals, but there are no training programs available. During this presentation, the speaker will point out a large number of opportunities that exist to meet different regional needs by linking the strengths of one with the weaknesses of others. The role of IPA in this process will be discussed.

SY07-02

The state of psychogeriatrics in Europe: Challenges and opportunities

Lia Fernandes, *Faculty of Medicine - University of Porto, Portugal*

With the increase in ageing all over the world, with the elderly population nearly tripling from 524 million (8% of the world's population) in 2010, to 1.5 billion (16% of the world´s population) in 2050, we will face new challenges and opportunities. Also in 2050, it is estimated Europe will see a differential increase of 70% in those aged over 65, and 170% in those aged over 80.

It will be vital to respond to the needs of this emerging population, the consequent rise in chronic diseases, especially in dementia and in mental health disorders, which will overload the health care system, as well as push up health and social costs.

The present study is initiated under the umbrella of the President's Forum, organized by the International Psychogeriatric Association (IPA), where challenges and opportunities were shared among IPA affiliates.

In this presentation, results from a recent comparative study about the current state of psychogeriatrics in European countries will be reported.

SY07-03

Comparative study of current state and action plans for psychogeriatrics development in Asia-Pacific region

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Population aging is more rapid in the Asia-Pacific region than other regions of the world. Improving geriatric mental health is most critical in the region. There has been great variability in the mental health service model for older adults across the Asia-Pacific region. In 2011, the International Psychogeriatric Association (IPA) initiated the President's Forum to address the contrast between need of mental health services and the difficulties societies and governments confront to provide adequate resources to providers. Nine IPA affiliates shared the current situation of geriatric mental health service and how they would take actions to develop and improve the service. The comparison of the current situations and potential action plans will be presented. It is expected the findings will contribute to cross-national collaboration and experience-sharing, and to develop psychogeriatrics in the low-resource settings and countries.

SY08-01

Increasing the participation of older persons with co-morbidities in clinical research: What are the challenges? Lessons from the European predict study

Cees Hertogh, *VU University Medical Center, The Netherlands*

It is well known that older people, especially those with co-morbidities, are underrepresented in clinical trials. This poor representation leaves clinicians in a dilemma: if they prescribe treatments untested in older people, they do so in the absence of solid evidence on efficacy and safety, if they do not prescribe such treatments, they may be denying an older person the worthwhile benefits of a treatment. This problem is wider than clinical trials on drugs: age gaps also exist in research on diagnostic strategies for dementia and in research on stroke-rehabilitation. The European PREDICT project (www.predicteu.org) was designed to study the reasons for this persistent exclusion and to stipulate strategies for a better involvement of older persons with co-morbidity in clinical research. The project resulted in a charter which, contrary to most existing codes and charters, aims to encourage participation of older persons in clinical trials. This charter specifically addresses barriers and promotors of research participation. The presentation will go into the literature and study results underlying the PREDICT charter and will specially focus on the practical and ethical aspects of diverse strategies to improve research participation.

SY08-02

Engaging older people in care homes in research: Lessons from the Newcastle 85+ study

Louise Robinson, *Institute of Health and Society, Newcastle University, United Kingdom*

Objective: Those aged 85 and over, the oldest old, are the fastest growing sector of western populations. However the oldest old, especially those in care homes, are often excluded from research due to a combination of physical, cognitive and sensory impairment. This paper describes the methods employed to successfully recruit and retain a cohort of 850, 85 years old, including those in care homes, as part of the Newcastle 85+ Study which is investigating the health of the oldest old from a biological, medical and psychosocial perspective.
Method: Participants were all individuals born in 1921 and registered with a participating general practice in Newcastle/North Tyneside, UK. They agreed to detailed health assessments by a nurse in their homes and/or review of their general practice medical records.
Results: Of the 1453 individuals eligible to participate, 72% (n = 1042) were recruited; 59% (n = 851) consented to both health assessment and review of medical records. Key factors for successful involvement included protected time to engage with family and other key gatekeepers, minimizing participant burden, through for example home based assessment, and flexibility of approach. Cognitive impairment was a significant issue; due consideration should be given to the ethical and legal issues of capacity and consent. Interim withdrawal rates at phase 2 (18 month post baseline), show 88 out of 854 participants (10%) had withdrawn with approval for continued use of data. Attrition due to death of participants within this same time frame was 135 (16%).
Conclusion: Our recruitment rates were good and compared favorably with other similar studies of the oldest old. The challenges of, and successful strategies for, involving, recruiting and retaining this group in research, including those in care homes, are described to facilitate future research with this key group.

SY08-03

Implementing mental health guidelines in long-term care homes: Challenges and opportunities

David Conn, *Baycrest and University of Toronto, Canada*

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Objective: Following the development and publication of Canadian mental health guidelines focused on behavioural and mood symptoms in long-term care (LTC) homes, the implementation of the guidelines was studied at Baycrest Centre in Toronto. The goal was to understand the process of guideline implementation in LTC homes.
Method: A participatory action approach to the research was utilized. This involved a bottom-up approach with active involvement of point-of-care staff and family members in determining the approach and interventions. Mixed methods were utilized including focus groups, a chart audit, the neuropsychiatric inventory (NPI-NH) and a measure of the worklife satisfaction of the staff (Program of All-inclusive Care of the Elderly survey - PACE).
Results: Significant positive changes were found on the PACE including improved job satisfaction. There was a trend towards decreased resident agitation as measured by the NPI-NH. New practices on the units developed as a result of the project including the inclusion of Personal Support Workers at team rounds and the initiation of team huddles to address challenging behavioural issues.
Conclusions: Implementing guidelines in any setting is a complex process which requires attention to local circumstances and culture. The participatory action approach adopted in this study appeared to enhance staff involvement in the process. The literature on guideline implementation will be discussed with a special focus on the challenges of implementation in LTC homes.

SY08-04

Grip on challenging behavior: The implementation of a care program on dementia special care units

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A Pot, *Department of Clinical Psychology, Faculty of Psychological and Educational Sciences, VU University, The Netherlands*

Introduction: Challenging behavior is common on dementia special care units (DSCU). Over 80% of the residents show some form of challenging behavior and a structured approach to manage this behavior is mostly lacking. We therefore developed the Grip on Challenging Behavior care program, which offers a structured multidisciplinary approach for managing behavior.
Methods: We implemented the care program according to a stepped wedge design. The 17 DSCUs that took part in the study were randomly divided over five groups. Every four months, a trained interviewer conducted interviews using the CMAI and the NPI-NH questionnaires. After each measurement, a group of DSCUs started working with the care program. On T0, all DSCUs were in the control group, on the last measurement (T5), all DSCUs were part of the intervention group. We followed the implementation with semi-structured interviews and two questionnaires.
Results: The implementation of the care program was not optimal. Barriers and facilitators that were found could be divided in organizational factors, culture of the DSCU and aspects of the care program. The quantitative effects of the care program all point in the same direction, namely a decrease of challenging behavior, but are not all statistically significant.
Conclusion: Working with the care program seems to lead to less challenging behavior, especially in residents with severe dementia. Implementing the care program, however, is complex. Several aspects about the organization and the organizational culture have to be taken in account. Also, some parts of the care program could be improved to better suit the practical care situation.

SY09-01

The role and impact of peer support in implementation of the national dementia strategy for England: A mixed methods evaluation

Charlotte Clarke, *University of Edinburgh, United Kingdom*

Objective: Living with dementia is often characterized by reduced social contacts and limited access to information. Globally, national dementia strategies are seeking to redress this through exploration of models of peer support. In the United Kingdom, national policy implementation led to 40 demonstration sites for peer support networks and dementia advisers, and this presentation reports on the national evaluation of these initiatives.

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Methods: Mixed-methods, gathering both a breadth and depth of evidence across the 40 demonstration services. Qualitative data discussed in this presentation are drawn from in-depth interviews with people with dementia and carers (n = 101, spread across 157 individual and/or joint interviews) and staff and stakeholders (n = 82) at eight in-depth case study sites. Consent was viewed as a process, leading to interviews that actively listened to the experiences of people living with dementia. Data analysis was a complex, five stage, process supported by NVIVO.
Results: Rooted in identification with people in similar circumstances, peer support had a positive impact on social networks. This led to learning from one another which in turn led to empowerment and increased ability to cope. People with dementia, carers, staff, volunteers and stakeholders all identified a unique quality in peer-to-peer relationships that, in contrast to support from most professionals, was rooted in lived experience.
Conclusion: This work locates peer support amongst people living with dementia alongside peer support within more established areas such as mental health and user-led disability services. We challenge assumptions based on a cognitive deficit model of dementia and add breadth and depth to previous work on the impact of peer support, challenging those supporting people with dementia and carers, as well as commissioners and service providers, to acknowledge the role and impact of peer support in delivering national dementia strategies.

SY09-02

Person-centered care: How do we get there? New approaches to staff development

Marit Kirkevold, *Institute of Nursing and Health Sciences, University of Oslo, Norway*

Objective: Person-centered care is an established ideal to promote wellbeing and optimal functioning among persons suffering from dementia. However, despite widespread support of this ideal, long term care of persons with dementia is frequently criticized for being task-oriented and for neglecting to promote the integrity and personhood of persons with dementia.
Method: In this presentation I will review existing models of staff development and discuss their pros and cons. In addition, I will present results of an explorative study evaluating the usefulness of a video-based counseling method aimed at improving the interaction skills of staff with the goal of promoting person-centered care.
Results: The results indicate that this approach may help staff interpret verbal and non-verbal signals of persons with moderate to severe dementia. They also realized their own importance in the daily life of the residents and the responsibility they had to facilitate and respect the residents' limited, but real competence to participate in the interactions. Through watching and reflecting on the video films in groups, they discovered the importance of adjusting their communication and interactions with the persons with dementia to accommodate the communication and cognitive difficulties of the resident. Furthermore, the staff recognized the importance and effectiveness of using function-supporting elements in their interactions to support the communication and interaction efforts of the residents.
Conclusions: We conclude that the learning that took place contributed to a more person-centered care of the persons with dementia.

SY09-03

Assistive technologies as a means of connecting people with dementia

Wendy Moyle, M Cooke, C Jones, S O'Dwyer, B Sung, *Griffith Health Institute, Centre for Health Practice Innovation, Griffith University, Australia*

Objective: Assistive technology including robots is increasingly being used to facilitate health and independence of older people, including people with dementia. This study aimed to explore the use and feasibility of the Giraff telepresence robot as a means of positively influencing communication and relationships for people living with dementia in a nursing home setting.
Method: Mixed methods involving video observation and interviews with 5 dyads (family and person with dementia). Video observations of the telepresence connections were analyzed with the assistance of Noldus software. Interview data was analysed using a thematic approach.
Results: A total of 34 calls were scheduled, 29 calls were attempted, and 26 calls actually took place. Calls took place with family members locally, nationally and internationally. The Giraff reduced resident's social isolation and increased family connections by enabling residents and families to see and talk to each other more frequently. Families felt reassured to virtually see their relative was doing well and looking healthy. Feasibility issues such as

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internet drop out and overheating of the hardware challenged the project.
Conclusion: Telepresence robots have a place in reducing social isolation in people with dementia and with advances in robotic technology and equipment that is user centered the opportunities to explore this equipment will be further opened up.

SY09-04

Developing functional games for the mild cognitive impaired elderly in Korea

Kyung-Choon Lim, *College of Nursing, SungShin Women's University, Korea*
M Chun, *Department of Rehabilitation Medicine, Asan Medical Center, Korea*

Objective: Functional games are computer and video games that are intended to not only entertain users, but have additional purposes such as education and training. They can be similar to educational games, but are primarily focused on an audience outside of primary or secondary education. The purpose of this study was to develop functional games for the mild cognitive impaired elderly in Korea.
Method: With convenience sampling, 100 older adults in S city participated in this study. Data were collected from the elderly who completed functional games (two times per week, total eight times, one hour for each time) and a questionnaire asking about their general characteristics, health behavior, cognitive function, life satisfaction, and depression. Using SPSS 20.0 program, data were analyzed.
Results: The mean age was 70.1(± 3.77), ranged 65 − 80 years old. Among 100 subjects, 85% were aged and 79% were female 65–74. In this sample, the cognitive function ($t = -3.32$, $p = .001$) and life satisfaction ($t = -2.05$, $p = .043$) were improved and they were statistically significant. The level of depression was decreased after doing functional games. However, it was not statistically significant ($t = -1.06$, $p = .292$).
Conclusion: The study findings show that older adults comprise a vibrant game audience, that they have devoted players, and that they have distinct needs and interests. There exists a potential market within this demographic group for the use of functional games. Thus, we need to develop and apply senior functional games in Korean considering a strong preference for familiar contents.

SY10-01

Brain reserve and abnormal living functioning in the elderly

Xin Yu, *Peking University, China*

Brain reserve is a highly individualized concept in which multiple factors including genetics, intrauterine environment, birth, growing environment, and education are involved. Brain reserve and the environmental load comprise the balance of stable living functioning. Once the balance is broken, either due to the higher environmental load or lower brain reserve, the mal-functioning mental and behavioral disorders will be observed. Elderly people in China experience a lot of sufferings and social changes in life time. A case will be presented here to describe the life story of a 79 year old Chinese man who was born in the war, grew up in social unrest, getting married and raising children in political turmoil, and getting old in economical reform. He was also suffering from multiple physical conditions which were not well attended. A 'dementia' diagnosis was made in the initial phase when he was admitted into a psychiatric hospital but more evidence suggested that the patient was suffering a syndrome of 'low brain reserve'. Strategies including improving the internal environment and decreasing the stress from external environment took effects and the patient was in full recovery in two years' follow up. The case reminds geriatric psychiatrists that there are many causes underlying the 'dementing' condition. A longitudinal prospective, taking the lifetime history in particular, will benefit the diagnosis and treatment for the elderly patient.

SY10-02

Life factors and risk of depression in the old age

Manabu Ikeda, *Department of Neuropsychiatry, Faculty of Lifescience, Kumamoto University, Japan*

With the elderly population growing worldwide, depression in older people is becoming a global health problem. It reduces quality of life and increases healthcare utilization costs in older people. It is the single most important predictor of suicide. Development of elderly depression could be explained by a multifactorial disease model, and it is influenced by several bio-psycho-social factors. The aim of this talk is to investigate the differences in the life factors and risk factors for elderly depression between Asian and Western countries. The presenter will review the epidemiological

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reports of elderly depression and try to elucidate the differences of these factors between the two areas.

SY10-03

Nutrition and dementia

Tze Pin Ng, *National University of Singapore, Singapore*

Growing research evidence supports the important role of nutrition in cognition and dementia in the elderly. Nutritional factors underlie the observed associations of low albumin and haemoglobin and frailty with cognitive impairment and increased risk of cognitive decline and dementia.

Nutritional factors related to obesity also underlie the observation that diabetic individuals are at increased risk of developing Alzheimer's disease, vascular dementia. Population-based studies show that insulin resistance and metabolic syndrome are associated with greater cognitive decline, vascular dementia and amnestic mild cognitive impairment. Positively, there is evidence that a healthy and balanced diet such as the Mediterranean diet is associated with lower risk of cognitive decline.

A multitude of nutrients and nutritional factors are found to possess cognitive enhancing or neuroprotective actions, but human data are limited. A growing body of clinical and epidemiological evidence supports a positive effect of some micronutrients and phytochemicals on cognitive functioning and dementia.

Folate is critically involved in methylation reactions in the brain necessary for the production of monoamine neurotransmitters and membrane phospholipids. In the Singapore Longitudinal Ageing Studies (SLAS), elderly participants with higher blood levels of folate showed better cognitive performance particularly on memory and language. The level of B12 also has an independent effect on cognitive functioning (global, memory and attention) particularly among individuals with the APOE-e4 genotype.

Omega-3 poly-unsaturated fatty acid (PUFA) and DHA in particular are essential fatty acids found abundantly in brain cell membrane phospholipids, and are strongly anti-inflammatory. Mounting evidence suggest that increased intake of the omega-3 PUFA (EPA and DHA) may be beneficial in reducing the risks of cognitive decline and dementia. Population studies suggest that the association of fish consumption with reduced risk of cognitive decline is variable depending upon fish source, type, availability and preparation. On the other hand, recent SLAS data indicate that elderly persons who regularly consumed omega-3 PUFA supplements were less likely to show cognitive decline.

Green Tea, in experimental studies, tea polyphenols (catechins and derivatives) clearly evidence neuroprotective potentials. Recently population studies of Japanese and Singaporean elderly show that regular tea consumption is associated with better performance on global cognition, memory, executive function, and information processing speed and lower risks of cognitive decline.

Curcumins, found in the curry spice, turmeric, has long been known to show powerful anti-inflammatory and anti-oxidant properties. Recent experimental studies have shown that curcumins in the diet reduce plague burden in the brain of transgenic Alzheimer's disease mice. In SLAS elderly persons, regular curry intake was found to be associated with better global cognitive performance.

Poor nutrition is common among elderly persons, and improved nutrition has the potential for preventing cognitive decline and improving cognitive functioning in late life.

SY10-04

Exercise and prevention of cognitive impairment

Linda CW Lam, *Department of Psychiatry, The Chinese University of Hong Kong, Hong Kong SAR PR China*

While pharmacological interventions have yet to find its way in delaying the onset of major neurocognitive disorders (dementia), increasing evidence suggest that manipulation of risk factors may have a role in prevention of cognitive decline. Lifestyle activities, especially physical exercise, are reported to be associated with better cognitive performance, reduced risk of dementia and mortality.

Interesting findings regarding modality of physical exercise suggested that aerobic exercise, resistive training and mind body exercise are possibly associated with better cognitive response over simple stretching or walking. The intensity, frequency and types of exercise may have a special contribution to brain health.

Mechanisms regarding exercise and effects on the brain are likely to be complex. Aerobic exercise improves cardiopulmonary function and may attenuate vascular risks. The enhancement of Brain Derived Neurotrophic Factor activities during exercise is of putative neuroprotective effects. Balance training, nervous system stimulation and attention training may enhance neuroplasticity and cognitive reserve.

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While the theoretical basis of physical exercise in enhancing brain function is encouraging, logistic issues of establishing regular exercise in public health promotion require much exploration. The barriers and facilitators for regular exercise should be carefully examined before evidence based interventions are adopted as prevention strategies for cognitive decline.

SY11-01

Multiple trajectories of successful aging in Taiwan

Hui-Chuan Hsu, *Department of Health Care Administration, Asia University, Taiwan*

Purpose: Multiple indicators of successful aging have been explored in the existing research, but the research of examining the patterns of multiple indicators simultaneously is little. This presentation consisted of two studies of multiple trajectories of successful aging among the older people in Taiwan. The first study was to identify multiple successful aging trajectories by multiple indicators and lifestyle trajectories by two cohorts. The second study was to identify multiple trajectories of multiple health-related behaviors by gender.
Methods: The data of these two studies were from a nation-representative panel over 14 years. The six successful aging indicators were: chronic diseases, physical function difficulties, depressive symptoms, social support, social participation, and economic satisfaction. The four health-related behaviors were: smoking, drinking alcohol, getting regular exercise, and having a health checkup. The multiple group-based trajectory analysis was applied.
Results: (1) Successful aging trajectories: Members of the cohorts fell into four groups: successful aging, usual aging (the older cohort)/insecure aging (the younger cohort), health declining, and care demanding. Successful aging trajectories reflected differences in self-rated health and life satisfaction. (2) Health-related behavior trajectories: Five groups of males were identified: smoking, inactive, healthy lifestyle, smoking and drinking, and quitting. Three groups of females were identified: smoking and drinking, inactive, and healthy lifestyle. Age, education, self-rated health, depressive symptoms, and economic satisfaction at baseline were associated with the health behavior trajectories.
Conclusion: The heterogeneity of successful aging and healthy-related behavior trajectories in multi-dimensional indicators are found. Health promotion strategies by different trajectory groups should be developed.

SY11-02

Barriers and enablers for physical activity in older adults

Nicola Lautenschlager, *Department of Psychiatry, University of Melbourne, Australia*

This presentation will briefly summarize the current state of research in regards to clinical trials of physical activity aiming to improve cognition in older adults with normal cognition or mild cognitive impairment. In this context current limitations and open questions emerging from this research will be presented, with then focusing on the challenge how to best motivate older adults to engage in physical activity. An overview of typical barriers and enablers for physical activity will be given with focusing on older adults. Protocol details of a new randomized controlled trial for sedentary older adults with subjective memory complaints or mild cognitive impairment (the INDIGO study) will be presented with highlighting the components of the protocol aiming to improve motivation to engage in physical activity. In this context strategies such as motivational interviewing and goal orientation approaches will be discussed as possible suitable strategies to overcome sedentary lifestyle in research trials as well as community programs.

SY11-03

Attitudes to ageing: What is the role of personality?

Christina Bryant, *Psychological Sciences, University of Melbourne, Australia*

Objectives: The promotion of healthy or successful ageing has become an issue of considerable importance as population ageing leads to increasing numbers of older adults across all societies. Attitudes towards one's own ageing have been shown in a number of studies to contribute to healthy ageing. We lack an understanding of the factors that contribute to attitudes. There has been discussion as to whether personal characteristics that are relatively stable, or concurrent context and affect are stronger predictors of attitude.
Method: Community dwelling older adults (age $\geq$60) who were part of a longitudinal study of health and ageing in rural areas of Australia completed a postal questionnaire. Valid measures of current well-being, as measured by the SF-12, CES-D and HADS and as well as the Satisfaction with Life Scale and attitudes to ageing as measured by

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the Attitudes to Ageing Questionnaire (AAQ) were received from 421 participants. The AAQ has three subscales, namely Psychological Growth PSYGRO, Psychosocial Loss and Physical change. On entry into the study in 2001, participants had completed a measure of personality.

Results: The majority of participants scored within the positive range on all three subscales of the AAQ. Older age was significantly correlated with more negative scores on PSYSOLOSS but not with PHYCH or PSYGRO, and no gender difference was found in attitudes to ageing. Regression analyses with the AAQ subscales showed that personality made a small but significant contribution to the overall models. Current well-being, however, made the largest contribution to the models.

Conclusion: These results suggest that personality makes a small contribution to attitudes towards one's own ageing, but current well-being is the most significant predictor. As personality is hard to change, these results provide encouragement that attitudes may be amenable to change through interventions that focus on promoting physical and emotional well-being.

SY12-01

The best of both worlds: Medication and cognitive behavioral therapy for generalized anxiety disorder in older adults

J.l. Wetherell, *University of California, United States*

Objective: Generalized anxiety disorder (GAD) is common among older adults and leads to diminished health and cognitive functioning. Although antidepressant medications are efficacious, many elderly individuals require augmentation treatment. Furthermore, little is known about maintenance strategies for older people.

Method: We examined whether sequenced treatment combining pharmacotherapy and cognitive behavioral therapy (CBT) boosts response and prevents relapse in 73 older adults (60+) with GAD. Participants received 12 weeks of open-label escitalopram and were then randomized to one of four conditions: 16 weeks of escitalopram plus CBT followed by 28 weeks of maintenance escitalopram, escitalopram alone followed by maintenance escitalopram, escitalopram plus CBT followed by pill placebo, and escitalopram alone followed by placebo.

Results: Escitalopram augmented with CBT increased response rates on the Penn State Worry Questionnaire but not on the Hamilton Anxiety Rating Scale relative to escitalopram alone. Both escitalopram and CBT prevented relapse relative to placebo.

Discussion: This study demonstrates effective strategies for treatment of GAD in older adults. The sequence of antidepressant medication augmented with CBT leads to worry reduction in the short term. Continued medication is optimal for preventing relapse, but for many individuals, CBT would allow sustained remission without requiring long-term pharmacotherapy.

SY12-02

Scared to death! The impact of (cardiac) anxiety on vascular health

R.c. Oude Voshaar, *Department of Psychiatry, University Medical Center Groningen, University of Groningen, The Netherlands*
M.h.c. Beek, A.e.m. Speckens, *Department of Psychiatry, Radboud University Nijmegen Medical Centre, The Netherlands*
A.j.l.m. Balkom, *GGZ InGeest/Department of Psychiatry, EMGO Institute of Health and Care Research, VU Medical Centre, The Netherlands*

Objective: Meta-analysis has identified anxiety as an independent risk factor for incident and recurrent coronary heart disease. The actual number of studies, however, remains small and heterogeneity between studies is substantial. In this presentation, heterogeneity due to different types of anxiety will be discussed, including the role of cardiac anxiety.

Methods: Critical review of two recently published meta-analyses and an observational study on cardiac anxiety. In addition to other measures, 237 patients admitted for an acute coronary syndrome (ACS) and a control group (n = 49) completed the Cardiac Anxiety Questionnaire (CAQ). Follow-up was performed at one, three, six and twelve months after discharge.

Results: None of the studies included in the meta-analyses was fully adjusted for all life-style indicators and severity of heart disease.

Within our empirical data, the original three-factor solution of the CAQ (fear, avoidance and attention) was acceptable, but a four-factor model including the dimension "safety seeking behavior" better fitted the data. Internal consistency, test-retest reliability, construct and convergent validity were good.

Latent class growth analysis identified three patient groups with stable CAQ levels over time. A fourth group (16.6%) reported high levels of cardiac

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anxiety that decreased over time. Comparison of the two subgroups that started high in cardiac anxiety showed that patients with persistently high levels of cardiac anxiety were psychiatrically and somatically more compromised at baseline and had a lower quality of life at follow-up.

Conclusion: The CAQ is a reliable and valid instrument to assess cardiac anxiety in patients hospitalized with ACS. After an ACS a total of four trajectories can be identified; patients remaining high in cardiac anxiety might be hypothesized to be at higher risk of future cardiac events. Future studies should include measures of heart-focused anxiety, as well as better indicators of the severity of cardiac disease and life-style indicators.

S12-03

Validation of the informant questionnaire for anxiety in dementia in a memory clinic cohort

Gerard Byrne, *School of Medicine, University of Queensland, Australia*

The Australian National Survey of Mental Health and Wellbeing (NSMHWB) conducted in 2007 included 1,905 community-residing persons aged 65–85 years. It did not sample individuals in hospitals, nursing homes or caravan parks. This epidemiological survey generated DSM-IV and ICD-10 diagnoses based on the Composite International Diagnostic Interview (CIDI). The NSMHWB assessed generalized anxiety disorder, panic disorder, agoraphobia, social phobia, post-traumatic stress disorder, and obsessive-compulsive disorder. It did not assess simple phobia. Population weighted prevalence estimates were calculated using STATA/SE survey routines and individualized person weights. Estimates were standardized to the 2007 population using projections from the 2006 Australian census. Standard errors for confidence intervals were calculated using 60 delete-one jackknife repetitions.

Non-hierarchical DSM-IV 12-month prevalence estimates (%; 95% CI) for persons aged 65–85 years were as follows: generalized anxiety disorder 1.4 (0.8–1.9); panic disorder 0.5 (0.2–0.9); agoraphobia 0.3 (0.1–0.6); social phobia 1.0 (0.6–1.7); post-traumatic stress disorder 1.6 (1.1–2.2); obsessive-compulsive disorder 0.7 (0.4–1.1); and any anxiety disorder 4.3 (3.3–5.2). Use of ICD-10 criteria led to generally higher prevalence estimates: generalized anxiety disorder 1.5 (1.0–2.1); panic disorder 0.9 (0.5–1.4); agoraphobia 1.0 (0.6–1.5); social phobia 1.3 (0.8–1.8); post-traumatic stress disorder 2.5 (1.8–3.2); obsessive-compulsive disorder 0.7 (0.4–1.1); and any anxiety disorder 6.0 (4.9–7.1). The differences in prevalence estimates between the DSM-IV and ICD-10 nosological systems can be explained by differences in diagnostic criteria.

A significant proportion of older people with an anxiety disorder also met diagnostic criteria for another mental disorder. Of those with a DSM-IV 12-month anxiety disorder, 60% had a single anxiety disorder, 14% had at least one additional anxiety disorder, and 26% had at least one affective or substance use disorder. Similarly, of those with a 12-month anxiety disorder 78% had a comorbid physical disorder. Of those with a 12-month affective disorder, 45.4% had a comorbid anxiety disorder. Thus, anxiety disorders do occur in pure culture in community-residing older Australians.

The level of psychological distress associated with anxiety disorders can be estimated using the Kessler 10-item self-report scale (K-10). Of older people with any 12-month DSM-IV anxiety disorder, 30% had high or very high K-10 scores compared to 2.7% with no history of anxiety disorder. Of older people with a 12-month anxiety disorder, 6.2% reported that they had seriously thought about suicide during the past 12 months and 2.5% reported that they had attempted suicide during the past 12 months. Although this level of anxiety-related suicidality is less than that associated with affective disorder, it nevertheless underscores the severity of anxiety for some older people.

Anxiety disorders in older people are also associated with considerable disability in older people. Using the 12-item WHO Disability Assessment Schedule (WHODAS12), we found that older people with a 12-month history of any DSM-IV anxiety disorder had much higher levels of disability than those without a history of anxiety disorder [21.8 (SD 19.4) vs 10.7 (SD 14.1); $F(1, 1894) = 46.5$, $p < 0.0001$].

In summary, anxiety disorders are highly prevalent in older Australians and are associated with high levels of distress and disability.

SY13-01

Molecular neuroimaging biomarkers for amyloid and tau

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Modern molecular imaging has provided new exciting tools to investigate the brain and the understanding of functional disturbances and time course of different pathological changes. Several neurodegenerative brain disorders including Alzheimer´s disease (AD) are characterized by proteinpathies with extracellular and intracellular deposit of abnormal proteins. Molecular imaging has recently important insight into understanding of the role of various proteinpathies in dementia disorders.

AD has histopathologically been characterized by its classical hallmarks including deposition in brain of beta amyloid (Aß) in extracellular plaques and vascular walls as well as intracellular neurofibrillary tangles (NFT). The distribution of Aß differ from the distribution of NFT in AD brains. It is assumed that the Aß pathology precede the presence of NFT during the progression of AD. Interestingly enough the amount of neurofibrillary tangles is known to correlate with decline in cognitive function which suggest that the neurofibrillary tangles are more closer related to the synaptic functions in brain.

Several radioactive tracers have been developed for visualizing fibrillar Aß in brain by positron emission tomography (PET). The most investigated PET tracers for studying deposition of Aß plaques in human brain is the 11C-Pittsburgh compound B (11C-PIB) which has been followed by several 18F-labelled tracers such 18F-florbetapir, 18F-florbetaben, 18F-flumetamol, 18F-NAV4694. Since the 18F labelled Aß PET tracers have a longer half-life they most probably will be more suitable for clinical use. Deposition of fibrillar Aß plaques is detectable at very early stages of AD disease and longitudinal PET studies have demonstrated Aß deposition to reach a plateau at dementia symptoms. Patients with mild cognitive impairment (MCI) show either high or low amount of fibrillar Aß and the former group has a potential high risk to convert AD. A proportion of cognitive normal elderly also show presence of Aß plaques in brain. PET Aß imaging will be of importance in the future of evaluation of new drug targets.

There is therefore a great interest to develop specific PET tracers for imaging of tau. 18F-FDDNP was the first introduced PET Aß tracer which is followed more recently by several other PET tau tracers 18F-T-807, 18F-THK523, 18F-THK5105, 18F-AV680, 18F-PBD3 undergoing clinical testings. It is expected that the PET tau tracers will more closely reflect progression of disease in comparison to PET Aß tracers and important for studying different stages of disease as well as evaluating drug treatments. Further progress in molecular imaging will provide important insight and understanding of the complex pathophysiology processes in AD and other dementia disorders.

SY13-02

FDG PET in Alzheimer's disease subtypes

Karl Herholz, *University of Manchester, United Kingdom*

The majority of patients with Alzheimer's disease (AD) present with memory deficit as the earliest and most prominent symptom, but some patients present initially with other cognitive deficits, such as aphasia or apraxia, executive or visuo-spatial deficits, while memory impairment remains relatively mild until later stages. These variants of AD occur more frequently in patients with early-onset age and in non-carriers of the apolipoprotein E ε4 allele. Positron emission tomography with 18F-f-fluoro-2-deoxy-D-glucose (FDG PET) provides functional insight into the regional distribution of synaptic dysfunction in AD subtypes. This presentation will provide an overview on pertinent and recent findings.

The main finding on FDG PET in AD is the functional metabolic deficit in temporoparietal association areas, including posterior cingulate cortex and the precuneus. AD subtypes modify that pattern by also demonstrating metabolic impairment in the respective cortical areas that are associated with the leading neuropsychological deficits. Deficits in delayed recall, which is the core symptom in the amnestic subtype, are associated with hypometabolism in mesial temporal structures. On FDG PET scans, these can be masked by relatively low normal metabolism and significant atrophy in those areas. Language deficits, which can present as the clinical syndrome of anomic aphasia, are associated with metabolic reduction in the dominant temporal lobe, while dysexecutive symptoms are associated with frontal metabolic reduction. Language and executive function symptoms and their respective regional metabolic deficits overlap with frontotemporal dementia, which may cause diagnostic uncertainty. Prominent visuo-spatial deficits are typical for the AD subtype of Posterior Cortical Atrophy, which exhibits prominent regional metabolic impairment in parieto-occipital visual association cortices.

SY13-03

Understanding vascular contributions to Alzheimer's process using MRI and PET analyses

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Alzheimer's disease (AD) and vascular brain injury (VBI) are the two most common pathological changes seen in the aging brain. While they frequently co-occur, determining the combined impact on cognition during life has proven challenging. The advent of in vivo brain imaging of cerebral amyloid, the presumed first step of the AD pathological process, in combination with magnetic resonance imaging (MRI) of VBI, enables the examination—for the first time—of the independent and combined effects of these two pathological processes on brain structure and function during life.

I will present information from the Aging Brain Program Project, led by Dr. Helen Chui where we have studied 300 older non-demented individuals with various degrees of vascular risk factors. By combining advanced MRI techniques, positron emission tomography (PET) amyloid imaging and neuropsychological measures, we have examined the independent and combined effects of both amyloid and vascular measures on brain structure and function as well as the relationship between vascular risk factors, amyloid retention and VBI.

SY13-04

DTI approach to investigate white matter alterations in Alzheimer's disease

Dong Young Lee, *Seoul National University Hospital, Korea*

While structural magnetic resonance imaging (MRI) studies on Alzheimer's disease (AD) and mild cognitive impairment (MCI) have mainly focused on the atrophy of gray matter structures, relatively smaller numbers of studies have investigated the integrity of white matter in patients with AD or MCI. Diffusion tensor imaging (DTI) is a MRI technique that allows us to investigate the microstructural integrity of white matter. A series of DTI studies have identified decreased fractional anisotropy (FA), a quantitative measure for white matter microstructural integrity derived from DTI, in various white matter regions in AD and MCI. The white matter disruption in AD pathological process tends 1) to follow the pattern of an anterior to posterior gradient with greater damage noted in posterior brain regions and 2) to mainly involve highly-organized, long cortico-cortical association fibers, closely associated with the topographically corresponding gray matter degeneration. Etiologically, both degenerative and vascular disease processes contribute to the white matter disruption in clinically defined AD and MCI individuals, but the regional patterns of influence by each process is quite different from each other. FA or similar parameters derived from DTI could be applied to early detection and progression monitoring of AD-related pathophysiological processes.

SY14-01

Early onset dementia in Brazil: Still a hidden problem

Jerson Laks, M Borges, C Almeida, *Federal University of Rio de Janeiro, Brazil*

Objective: To present data on presenile dementia diagnosis at a university reference center in Brazil.
Method: A systematic review showed that prevalence of dementia in the 60–64 year-old Brazilians ranges from 1.1% to 44%. We examined files at the Center for Alzheimer´s disease of the Institute of Psychiatry (Federal University of Rio de Janeiro) from 1995 to 2001 and from 2010–2012 to look into dementia and early onset dementia diagnoses.
Results: In 1995–2001, 619 patients were examined and 28.6% were persons with presenile dementia. The presenile/senile rate was1:2.5. Data collected from 2010 to 2012 show that from the 583 patients during this time, 367 (63%) were diagnosed as dementia. Presenile dementia (n = 59) comprised 16.1% of the dementia cases.
Conclusion: Brazil is now a middle income country with many disparities with regard to education and economic situation of its population. Nevertheless, Brazil has experienced increasing aging of its population and increased life expectancy compared with developed countries. The overall life expectancy in 2008 was 72.7 years (men 69, women 76.6) and 73.5 in 2010. This trend entails a growing absolute number of diseases in older persons, mainly dementia and depression. The overall dementia prevalence rates in Brazil range from 2% to 49.6%. Despite the focus on dementia in the elderly, there is virtually no attention to presenile dementias in Brazil. A Medline search on the last five years with Brazilian data found only one study describing an outpatient sample from a university center. The prevalence of early-onset dementia is estimated to be 50:100,000 for patients aged 30–65 years. Considering persons with more than 60 years, however, this prevalence is higher and deserves more attention in Brazil, as well as in the other countries. As presenile dementias have extreme familial, legal, and socioeconomic consequences, these issues must be addressed.

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SY14-02

Care needs and the course of neuropsychiatric symptoms in young onset dementia: Findings from the (Dutch prospective) NeedYD-study

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Objective: Although attention is growing for people with young onset dementia (YOD), dementia health care services are still mainly targeting patients with late onset dementia (LOD). Specific knowledge on care needs of people with YOD and their families is necessary for the development of adequate health care services.
Method: In the Needs in Young onset Dementia (NeedYD)-study, assessments with 215 YOD patient-caregiver dyads were performed every six months during two years. Main outcomes were: (1) Care needs, as measured with the Camberwell Assessment of Need for the Elderly, and (2) neuropsychiatric symptoms (NPS) as measured with the Neuropsychiatric Inventory. For the results on NPS only people with Alzheimer's disease (AD) were selected and compared with data on late onset AD.
Results: At baseline almost 25% of all care needs of participants were unmet. Caregivers' reports showed highest proportions of unmet needs in areas such as daytime activities (45.5%), social company (37.8%), eyesight and hearing (37.3%), mobility (19.6%) and psychological distress (18.2%). Participants' self-reports revealed high proportions of unmet needs in areas such as information (23%) and intimate relationships (13.2%). A strong relationship between unmet needs and the course of NPS was found. The incidence, prevalence and persistence of NPS were in general lower in YO-AD than in LO-AD. Frequency of individual symptoms showed large variability and apathy was most prevalent in both groups.
Conclusion: Service provision in YOD is a challenge leading to high proportions of unmet care needs. NPS are less prevalent, but common in YO-AD and an issue of concern as the impact of these symptoms may be different in younger families. Given the adverse relationship between unmet needs and the course of NPS in YOD, health care providers should aim at the prevention of unmet care needs, by periodically investigating care needs and developing dedicated YOD services.

SY14-03

Experiences of younger persons with dementia in everyday life: A qualitative study

Aud Johannessen, *Hospital of Vestfold, Ageing and Health - Norwegian Centre for Research, Education and Service Development, Norway*
A Moller, *Ersta Skondal Hogskola, Bracke Diakoni, Sweden*

Background: The small number of existing studies confirms that younger people with dementia need special assistance from the beginning and as the disease progresses. There is a need to develop services to respond to the specific needs of younger persons with dementia.
Aim: To find out how younger people experience living with dementia, and to assess the implications for practice and the development of further services.
Method: Grounded theory, a qualitative method, with interviews of 20 informants (aged 54–67 years; 12 of them men) during 2010–2011.
Findings: One category, the process toward a dementia diagnosis, covered two subcategories describing changes and being diagnosed. Another category fighting for dignity describes how the informants try to maintain their quality of life, covering two subcategories; intrapsychic challenges and social challenges.
Conclusion: Health services should give younger persons with dementia the ability to maintain contact with society and their voices should not be overlooked.

SY14-04

Experiences of adult children of younger persons with dementia: A qualitative study

Maria Barca, K Engedal, P Haugen, A Johannessen, *National Center for Aging and Health, Norway*
K Thorsen, *Faculty of Health Science, University College of Burkerud, Norway*

Background: A small number of studies confirm that children of persons with young onset dementia need special assistance from the onset of the dementia disorder and as the disease progresses.
Aim: To explore how adult children of a parent with young-onset dementia have experienced the development of the dementia, what needs for

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assistance they have had, how they consider the assistance and information they eventually have received and what they see as beneficial support.
Method: Qualitative interviews with 14 informants (aged 20–37 years; 12 female, 2 men) during 2011 were conducted and analyzed thematically in a life course perspective, relating the experiences of the children to changed relations during the dementia process.
Findings: The adult children feel neglected during the dementia process. They emphasize a need to be seen as individuals, as children, with their experiences, feelings and personal needs for assistance. The family relations are often complex, and the stress experienced in the family seems to increase conflicts. The category "children of parents with young-onset dementia" masks the differences between the children, variations depending on age, gender, family structure and relations, responsibilities, personal relations to both parents, if there is an adult primary care-giver, and the periods of adolescence living together with the parent with the dementia.
Conclusion: The findings point at the importance of individualized support for the children, but also group support where they can identify with others in their situation. The implications for service development will be assessed.

SY15-01

Effect of a choir intervention on behaviour, sleep and social engagement of community-dwelling people with dementia

Elizabeth Beattie, J Mccrow, *Queensland University of Technology*, *Australia*
L Quinn, *University of South Australia*, *Australia*
C Doyle, *Australian Catholic University*, *Australia*
N Pachana, *University of Queensland*, *Australia*

Background: Memory for familiar music is retained in by people with dementia despite deteriorations in other areas of functioning and music-based interventions have achieved some success in elevating mood, decreasing BPSD and increasing engagement. Yet few studies of group singing to music have been reported in this population.
Purpose: This presentation provides an overview of the literature on singing-based interventions for people with dementia. It also reports on a recent pre and post repeated measures pilot study of the effect of choir participation on mood, engagement, BPSD and quality of life in participants from culturally and linguistically diverse backgrounds attending day respite but reported as difficult to engage in most activities.
Methods: Participants (n = 7, mean age = 78, 5 male, 1 female, 3 Greek and 3 Italian first generation bilingual immigrants) attended 8 weekly sessions of guitar-accompanied choir singing in English, Italian and Greek facilitated by a trained music therapist with dementia expertise. Measures (baseline, mid, immediate post and 4 weeks post) included cognitive status (baseline, 4 weeks post only), BPSD, social interaction, engagement mood/depression, sleep and quality of life. Carer measures were BPSD burden, sleep and mood. All participants were videotaped in a randomised schedule in each session for coding by two trained staff using Noldus Observer XT.
Results: Statistically significant improvements in mood, BPSD engagement and QoL from Baseline were found, retained one-month post intervention for mood and QoL. All participants were engaged more than 98% of the time they were singing, but showed greater positive affect during repetitive choruses or in songs sung in their own first language. Findings suggest a larger rigorous trial is warranted.

SY15-02

State of the science on non-pharmacological interventions for wandering of people with dementia

Jun-Ah Song, *Korea University, Korea*

Objective: Wandering of people with dementia (PWD) is not a simple behaviour and thus the reason why people wander remains unclear. Because the same behaviour or type of wandering might occur for different reasons in different individuals, it makes it hard to design appropriate intervention strategies for managing wandering. While there seems to be a consensus in the literature that non-pharmacological interventions offer the potential for safer alternatives to drug treatment, but little is known about their effectiveness. This presentation provides an overview of the international and domestic literature on non-pharmacological interventions for wandering. Emphasis is placed on the sensory stimulation-oriented approaches such as movement therapy and environmental modification. Results of a recent, domestic pilot study of a group walking program for PWD who wander are also reported.
Methods: Reports of systematic reviews that examined effects of non-pharmacological interventions for wandering were reviewed. Domestic studies on wandering and related intervention

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approaches were also analysed. Results were evaluated for concluding effectiveness of presented interventions.
Results: Studies suggested that there was no robust evidence to recommend any non-pharmacological intervention to reduce wandering in PWD, although exercise, music, aromatherapy, and multi-sensory environment were to some degree considered effective and acceptable. Moreover, too little studies were found to prove the effectiveness of non-pharmacological interventions for management of wandering in the domestic setting.
Conclusion: High-quality studies, preferably RCTs, to determine the clinical effectiveness of non-pharmacological interventions to reduce unsafe wandering are needed. Especially in domestic setting much more experimental studies on wandering are urgently needed. For such studies, there would be merit in considering the diversity of behaviours in the term of "wandering" and potential causes.

SY15-03

Physical activity as a non-pharmacological intervention for people with dementia

Christine Neville, *University of Queensland, Australia*

Background: Globally, dementia is a health priority. Associated with dementia are behavioural and psychological symptoms (BPSD) that cause great concern for people with dementia and their carers. Most people with dementia exhibit these symptoms at some time often warranting treatment to decrease distress and increase quality of life. Treatment with antipsychotic medication is common practice despite poor efficacy and problematic side-effects. Therefore, non-pharmacological approaches to reduce BPSD will contribute significantly to the quality of life for people with dementia. Recent studies suggest physical, psychological and behavioural improvements associated with exercise.
Objectives: To review the nursing evidence for the effectiveness of exercise interventions for people with dementia and then report on the effects of a dementia-specific, aquatic exercise intervention on BPSD in people with dementia.
Methods: A search of the literature was conducted to identify exercise intervention studies, including aquatic exercise, using a range of electronic and evidenced-based databases.
Results: Studies that involved swimming, walking, dance, tai chi, strength, balance and flexibility programs were identified. Most suggested physical, psychological and behavioural improvements for people with dementia. A more detailed account will be presented about a world-first, innovative, dementia-specific, aquatic exercise intervention that reduced BPSD and improved psychological and functional wellbeing in people with moderate to severe dementia.
Conclusions: These results provide evidence of the beneficial effects of exercise particularly aquatic exercise on the behavioural, functional and psychosocial aspects of the dementia syndrome. Recommendations on lessening the impact of BPSD on the person with dementia and their carers with exercise interventions are made. Future research investigating the effect of exercise including aquatic exercise and rigorous design of exercise interventions to achieve better outcomes and methodological quality are required.

SY15-04

Digital reminiscence for persons with dementia in nursing homes: Pilot study

Gwi-Ryung Son Hong, Y Lee, T Song, *Hanyang University, Korea*

Objective: Although Reminiscence Therapy (RT) as one of interventions, has been consistently reported the positive effects on mood in older people without dementia, only few studies conducted in older people with dementia, reporting some effects on mood, cognition, and behavioral function. Little information on the effects of RT exists among nursing home residing people with dementia. This pilot study will present an overview of the literature and theory on RT interventions for people with dementia and the feasibility of digital RT using culturally familiar photos, videos, and music.

Method: Study design was one group pre-post design in a nursing home in Seoul, Korea. A total of 12 older adults (6 male and 6 female) with dementia in a long-term care facility were conveniently selected. Inclusion criteria were age 65 or over, having a diagnosis of dementia, residence in a long-term care facility for more than a month, able to communicate, and agreement to participate in the study. Intervention sessions were conducted twice a week for 5weeks, each for about 60 minutes. Digital equipment (e.g., laptop, internet etc.) was utilized during RT to visualize past events and music that participants were mentioning during RT. Outcome variables included cognition and depression.

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Results: Mean age of the participants was 76.2 (SD = 6.93, range 68–89). Using paired t-test, although mean scores of post-test were higher than those of pretest, cognition ($t = -1.87$, $p = .08$) and depression ($t = .605$, $p < .56$) were not statistically significant. However, qualitative data from a field note strongly support the improvement in mood in study participants.
Conclusion: Although study limitations are identified such as small sample, non-random sampling and no control group, digital RT is feasible to use during RT in nursing homes. Furthermore, digital RT can be developed as one of interventions in nursing home residing people with dementia.

SY16-01

The concept of vascular depression and evidence from hospital and imaging studies

Alan Thomas, *Psychiatry, Newcastle University, United Kingdom*

Objective: Review the apparent conflict between findings from community based and hospital studies about the relationship of depression to vascular disease.
Method: Review and interpretation of relevant literature.
Results: It has long been recognized there is an association of vascular disease with depression. About 15 years ago the term 'vascular depression' was introduced to stimulate research into this relationship, though no criteria for any specific diagnostic subtype were formally proposed. A large amount of research from primary and secondary care studies has followed which has improved our understanding. Community based studies have usually failed to identify any clear relationship between depression (defined itself in different ways) and vascular diseases or risk factors. And many secondary care studies have also not reported an association between vascular risk factors and depression. These findings have led to criticisms of the 'vascular depression' concept. However, other secondary care studies, mainly neuroimaging and a few pathology reports examining white matter lesions, have reported a robust relationship between vascular brain disease and depression. In this presentation Dr Thomas will review this (superficially) conflicting literature and suggest that.
Conclusion: The 'vascular depression' construct is best focused on a subgroup of (older) people with major depressive illness whilst in other types of depression any impact of vascular disease cannot be distinguished from the range of other risk factors predisposing to and perpetuating depression.

SY16-02

Vascular risk factors and depression: Evidence from epidemiology

Robert Stewart, *Psychological Medicine, Institute of Psychiatry (King's College London), United Kingdom*

Objective: To evaluate the relationship between vascular risk factors and depression.
Method: Narrative literature review.
Results: Despite robust evidence that depression risk is substantially increased after a stroke, relationships with conventional risk factors for stroke have been more controversial. Where associations have been found, these have most often been with diabetes. However, this has numerous potential effects on the individual beyond increasing risk of cerebrovascular disease and it is not clear that diabetes has any effects on depression risk beyond other similarly impactful conditions. Other important risk factors for cerebrovascular disease such as hypertension, dyslipidaemia and smoking are not markedly associated with depression.
Conclusion: There is a lack of convincing evidence that risk factors for cerebrovascular disease are risk factors for depression. The wider relationship between vascular disease and depression is likely to be mediated through other causal pathways.

SY16-03

Genetic and epigenetic origins in the etiology of post-stroke depression

Jae-Min Kim, *Department of Psychiatry, Chonnam National University Medical School, Korea*

Depression is a common and significant complication following stroke. Recently genetic etiologies of post-stroke depression (PSD) have been suggested. The serotonergic genes and brain derived neurotrophic factor (BDNF) gene have received particular attention. Serotonergic expression is significantly regulated by genetic makeup including serotonin transporter and receptor polymorphisms and epigenetic chromatin remodeling, including DNA methylation of cytosines in cytosine-guanine (CpG) dinucleotides. BDNF secretion is influenced by genetic and epigenetic profiles in a similar manner. The genetic and epigenetic origins in the etiology of depression have been investigated in general populations. However, there has been

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no previous evaluation of in relation to PSD. Using data from a longitudinal study of a Korean post-stroke cohort, the role of serotonergic and BDNF genetic and epigenetic status in PSD was investigated. As results, the polymorphisms related to lower serotonergic and BDNF expression and higher methylation status were associated with PSD. Genetic origins of PSD were supported. In particular, serotonin and BDNF methylation profiles were supported as potential diagnostic and prognostic biomarkers for PSD; associations with these methylation statuses may represent a target for drug development.

SY16-04

Vascular Neuropathology and Depression

Ahmad Khundakar, *Institute for Ageing and Health, Newcastle University, United Kingdom*

Objective: The incidence of several vascular co-morbidities identified in patients with late-life depression, including increased incidence of stroke and myocardial infarction, culminated in the 'vascular depression' hypothesis, which suggested a vascular component in the events leading to pathological changes in brain circuitry associated with affective regulation. The purpose of this series of experiments was to examine neuron and glial cell density and neuron volume in the post-mortem tissue of late-life depressed patients, compared with age-matched controls.
Method: Post-mortem tissue was acquired from key areas in mood circuitry: the dorsolateral prefrontal (DLPFC), orbitofrontal (OFC) and anterior cingulate (ACC) cortices, and caudate nucleus from patients with depression and age-matched controls and analyzed using the optical disector and nucleator methods.
Results: The results acquired from these experiments revealed differential effects of late-life depression on neuronal morphology, depending on affective area examined. Significant reductions in pyramidal neuron volume in the DLPFC overall and in layers 3 and 5, and in neuronal density in both the dorsolateral and ventromedial aspects of the caudate nucleus, were found in patients with late-life depression; however, no neuronal changes were found in the OFC or ACC. No changes were found in glial cell populations in any area examined, contrasting with previous stereological studies in younger depressed patients.
Conclusion: The apparent disparity in cellular changes between younger and elderly patients suggests a differing pathological basis in depression, dependent on age, in accordance with the 'vascular depression' hypothesis.

S17-01

Translating evidence into practice through education and a focus on capabilities

Wendy Moyle, *Griffith Health Institute, Griffith University, Australia*

Objective: The aim of the study was to assess the effectiveness of the CMDC in assisting staff to improve quality of life (QOL) for individuals living with dementia in long-term care (LTC).
Method: A blinded non-randomised controlled trial implemented and evaluated the Capabilities Model of Dementia Care (CMDC) across three intervention sites and one comparison site in Queensland, Australia. Two onsite mentors were employed to implement the model and to conduct staff education and mentorship, and training of clinical mentors. The content and process of the education and training was aligned with Knowles Adult Education theory.
Results: Eighty one staff (intervention = 51; comparison = 30) were invited to participate in the study. Intervention site staff undertook 12 hours of education and they were mentored for 8 months. The vast majority of workshop participants (91%) were positive in their evaluation of the education and training. The mentors identified positive changes in particular in relation to documentation and carry through of care. The Capabilities Model of Dementia Care had a positive impact on staff experiences and at twelve months a significant difference emerged ($p = .005$) such that staff in the comparison group reported lower SEWDR scores than staff in the intervention group.
Conclusion: Onsite mentors play a significant role in education and maintaining change within the long-term care environment. Their role in helping to improve staff experience of working with people with dementia has the potential to impact on staff recruitment and retention as well as to improve quality of life and care of the person with dementia.

SY17-02

Developing capacity for quality care improvement: Experiences from the Norwegian teaching nursing home program

Marit Kirkevold, *Nursing Science, University of Oslo, Norway*

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Background: In the mid-1990s, there was persistent critique of the quality of care provided in residential aged care facilities in Norway, in line with similar concerns internationally. The Norwegian teaching nursing home (NTNH) program was launched in 1996 to address these issues.
Aim: To contribute to quality of care of frail older persons by improving the competence of staff, the prestige of working with older people, stimulating development of services, facilitating research into the care of older persons, and developing good learning environments for students.
Method: The NTNH program was developed over a period of seven years (1996–2003), applying a participatory action research design, in a close collaboration between selected nursing homes, universities and colleges involved in care, education, research and service development.
Findings: The program increased formal and informal competence among staff. Many practice development projects contributed to increased quality of care in selected problem areas. Learning conditions for students were improved. TNHs were established permanently in 2004. In 2008, 20 TNHs were part of the NTNH program. In 2009, similar organisations were established in the home care sector. These organisations are expected support the further development of quality of care through continued education, competence development, support research and participate in developing new models of care. The Norwegian TNH program continues to work closely with educators and researchers to facilitate capacity building for quality care improvement.
Conclusion: The original NTNH program led to the permanent establishment of a series of TNHs which continue to be active partners in developing and testing new models aimed at improving education, staff development and quality care as well as supporting elderly care research.

SY17-03

The wicking teaching aged care facility program: Overview

Andrew Robinson, *School of Nursing and Midwifery & Wicking Dementia Research and Education Centre, University of Tasmania, Australia*

Background: Australia currently faces multiple challenges in providing high quality care in residential aged care facilities (RACFs), where round 60% of residents have dementia. However, problems exist with recruitment and retention of staff, compounded by their unpopularity as sites for clinical training.
Aim: The Wicking Centre (WDREC) has prototyped Teaching Aged Care Facilities (TACFs) in two RACFs in Tasmania; a program now expanded into aged care facilities in two additional Australian States. The Wicking TACF program aims to: provide students with improved inter-professional clinical learning to deliver a positive placement experience; build organisational and leadership capability to support professional education and drive high performance; and, create a nexus between teaching, research and practice.
Method: The TACF program involves implementing two concurrent research streams to drive whole of organization change. (i) The Clinical Research Stream implements quality inter-professional clinical placements, informed by the Evidence-Based Best Practice Placement Model - the focus is on supporting teaching and learning around dementia palliative care the 'clinical hook' which underpins student placements. (ii) The Organisational Research Stream implements a process of organisational review and redesign to develop capability as a learning organisation. The program streams are implemented in 5 stages: (1) Discovery and capacity building; (2) 'Run-In' - first student placements; (3) 'Run-In' evaluation; (4) Trial - second student placements; (5) Evaluation and Reporting.
Findings: The Wicking program has facilitated an annual increase of 1300% in student inter-professional clinical placements in the two prototype RACFs, with an associated increase in leadership capability across the organizations. Nursing, medical and paramedic students now engage in inter-professional aged care placements, which focus on dementia. The program has now expanded to include a range of allied health disciplines and includes corporate aged care providers in three Australian States.
Conclusion: Wicking TACF program has applicability across the residential aged care sector in Australia.

SY17-04

Development of "Centres for Learning, Research and Innovation in Long-term Care" in Ontario, Canada

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Objective: Although a small number of Long-Term Care (LTC) Homes in Canada are linked to

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Academic Health Science Centres there has been limited focus on the development of educational programs and research in these settings. The Government of Ontario, Canada recently provided funding for 3 Centres of Learning, Research and Innovation in Long-Term Care. This paper will describe the initial development of these Centres with a particular focus on Baycrest Centre in Toronto. The other 2 sites are Bruyere Continuing Care in Ottawa and Schlegel Villages in Waterloo.
Method: Baycrest is a large multi-level Geriatric Centre, which is fully affiliated with the University of Toronto. A Steering Committee and External Advisory Board have been established to provide oversight for the new Centre.
Results: The presentation will focus on the initial goals for the 3 Centres and will outline the main initiatives which are underway in the Centre at Baycrest. One major focus is on the development of an Interprofessional Learning Unit on 2 floors of our 472 bed LTC Home. The Unit will also be a resource for other Homes in the region. Training courses will focus on a) Management of the Behavioural and Psychological Symptoms of Dementia (BPSD), b) Interprofessional Competencies and c) Assessment of Acute Clinical Changes. Other program components include an interprofessional summer internship, an annual conference and a mentorship program. Initial research projects include studies of the introduction of a Montessori-based dementia program and the use of Arts-Based learning.
Conclusion: The Government of Ontario has recently provided funding for academic centres within 3 well established multi-level LTC organizations, with existing University affiliations. It is hoped that this will be a first step towards the development of increased educational and research capacity within our LTC system.

SY18-01

The Sydney multisite intervention of laughterbosses and elderclowns (SMILE) study an overview of results and reflection on the components of the intervention

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R Fleming, *University of Wollongong, Australia*
P Spitzer, *The Humour Foundation, Australia*
J Bell, *Arts Health Institute, Australia*

Objective: To determine whether humour therapy reduces depression (primary outcome), agitation, and behavioural disturbances and improves social engagement and quality of life in nursing home residents.
Method: Cluster randomized controlled trial involving 17 nursing homes (189 residents) randomized to intervention and 18 homes (209 residents) randomized to usual care.
Intervention: 9–12 weekly visits by an Elderclown, a professional performer who worked in partnership with a LaughterBoss, a staff member trained in humour delivery.
Outcome measures: Cornell Scale for Depression in Dementia (depression); Cohen-Mansfield Agitation Inventory (agitation); Neuropsychiatric Inventory (behavioural disturbance); Multidimensional Observation Scale for Elderly Subjects withdrawal subscale (social engagement); and DEMQoL and DEMQoL Proxy(self and proxy rated quality of life). All outcomes were measured at the participant level by researchers blind to group assignment at baseline, 13 weeks and 26 weeks.
Results: Groups did not differ significantly over time on the primary outcome of depression, or on behavioural disturbances other than agitation, social engagement and quality of life. The secondary outcome of agitation was significantly reduced in the intervention group compared with controls over 26 weeks (time by group interaction adjusted for covariates: $P = 0.011$). In the intervention group, management support and LaughterBoss commitment influenced how much residents were engaged during sessions, which in turn was associated with greater improvement on mood and agitation.
Conclusions: Humour therapy did not significantly reduce depression but significantly reduced agitation. Management support of staff's engagement in play activities during routine care is an important element in lifting resident mood and reducing agitation.

SY18-02

Personalized activities as a treatment of agitated behaviours in dementia

Daniel O'Connor, *Aged Mental Health Research Unit, Monash University, Australia*

Nursing home residents with advanced dementia and agitated behaviours respond positively to personalized activities. While much of this improvement can be attributed to the non-specific benefits of one-to-one social interaction, personalised activities based on Montessori educational principles conferred significant additional benefits.

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These benefits were especially striking for people from non-English speaking backgrounds, perhaps because activities can be presented non-verbally. Because nursing home staff members have limited time, we are testing the activities of treatments administered by family members and volunteers.

SY18-03

Volunteers adding life in dementia: A volunteer-led intervention for neuropsychiatric symptoms of dementia in long-term care

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S Gill, *Department of Medicine, Queen's University, Canada*

Background: Neuropsychiatric symptoms (NPS) are common among older adults with dementia in long-term care (LTC) settings. Nonpharmacological interventions are safe and effective treatments for NPS although LTC staff have limited time to implement these activities. The use of volunteers may be one to increase utilization of these strategies in LTC.
Methods: We conducted a systematic review of nonpharmacological interventions for NPS in LTC and designed a training program for volunteers to implement these strategies with older adults in a LTC home in Kingston. Volunteers were recruited using social media, online and print advertisements and trained in the Volunteers Adding Life in Dementia (VALID) program.
Results: A total of 10 community volunteers were recruited and completed the VALID orientation and training in the first phase of the pilot study. Ten older adults with dementia and NPS were enrolled from LTC. Each LTC resident with dementia was provided with up to 3 - 30 minute visits per week and each volunteer provided 3 hours weekly as part of the VALID program. Initial results from the first 10 patients enrolled in the program suggest that the program has been beneficial for volunteers, older adults with dementia, and LTC nursing staff.
Conclusion: The VALID program is a novel approach to providing enjoying activities for older adults with NPS in LTC. This program appears to be feasible and enjoyed by older adults with dementia and volunteers. The effect of the VALID program on NPS symptoms, nursing stress and volunteers will continue to be evaluated in this pilot project.

SY19-01

Patterns of cortical thinning in dementia with Lewy bodies and Alzheimer's disease

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S Colloby, *Institute for Ageing and Health, Newcastle University, United Kingdom*
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J O'Brien, *Institute for Ageing and Health, Newcastle University, United Kingdom, Department of Psychiatry, University of Cambridge, United Kingdom*

Objective: To compare MRI patterns of cortical thinning in subjects with dementia with Lewy bodies (DLB), Alzheimer's disease (AD) and normal ageing and explore the diagnostic utility.
Methods: One hundred and six subjects (31 probable dementia with Lewy bodies, 30 probable Alzheimer's disease and 33 healthy controls) underwent 3 Tesla T1 MR imaging and completed clinical and cognitive assessments. We used Freesurfer to measure cortical thickness and investigate the patterns of cortical thinning across groups.
Results: Cortical thinning in AD was found predominantly in the temporal and parietal areas as well as frontal areas. In DLB, cortical thinning was less diffuse with focal areas of cortical change predominantly affecting posterior structures (inferior parietal, posterior cingulate and fusiform gyrus). A stepwise linear discriminant analysis of regional cortical thickness variables revealed a classification accuracy of 98.4% (DLB sensitivity 97% and AD specificity 100%).
Conclusion: The patterns of cortical thinning differed between AD and DLB. There was generally less cortical thinning in DLB and the areas that were involved were smaller foci, suggesting differing pathological mechanisms between the groups. Cortical thickness may be a sensitive measure for characterising grey matter loss in DLB and shows promise as a diagnostic technique.

SY19-02

Amyloid PET imaging across the AD spectrum

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Alzheimer's disease (AD) develops slowly from a preclinical phase into a fully expressed clinical syndrome. Imaging of AD-pathology in vivo was first performed in humans in 2002. We have used longitudinal data collected since 2004 to characterize dynamic trajectories of amyloid β (Aβ) deposition, cerebral atrophy, and cognitive decline in vivo.

In-human studies have also recently been conducted using novel tracers targeting nigrostriatal dopaminergic integrity, including 18F-AV133, a radioligand with high affinity for the vesicular monoamine transporter type 2 (VMAT2).

In the first study, 145 Healthy Controls (HC), 36 MCI, and 19 AD were assessed at enrolment and every 18 months, with neuropsychological examination, MRI, and 11C-PiB PET scan, for a mean follow-up of 3.8 (95% CI3.6–3.9) years. Aβ-burden was expressed as 11C-PiB standardised uptake value ratio (SUVR) normalized to cerebellar cortex, threshold SUVR of 1.5 for high Aβ-burden. Rates of change were estimated using regression plots for Aβ deposition, MRI volumetrics, and cognition.

At baseline, significantly higher Aβ-burden was noted in AD (2.27 $\pm$ 0.43) and MCI (1.94 $\pm$ 0.64) than HC (1.38 $\pm$ 0.39). Our projections suggested a prolonged preclinical phase of AD in which Aβ deposition reaches the threshold of positivity at 17.0y (95% CI 14.9–19.9), hippocampal atrophy at 4.2y (3.6–5.1), and memory impairment at 3.3y (2.5–4.5) before dementia onset (CDR = 1).

In the second study, 18F-AV133 PET were performed in 50 participants (9 Dementia with Lewy Bodies (DLB), 11 AD, 20 Parkinson's disease (PD) and 10 HC). 20 participants also underwent amyloid imaging.

Significantly lower striatal VMAT2 densities were observed in DLB and PD when compared to AD and HC. Of participants with Aβ-imaging, 5/5 AD and 2/7 DLB showed high Aβ burden. Molecular imaging is shedding new light on preclinical trajectories in AD and other neurodegenerative diseases. Prediction of rates of preclinical changes will facilitate the design and timing of therapeutic interventions.

SY19-03

Neuroimaging and neurophysiological insights in the core symptoms of DLB

John-Paul Taylor, *Institute for Ageing and Health, Newcastle University, United Kingdom*

Objective and Method: The core symptoms of DLB include complex recurrent visual hallucinations, cognitive and attentional fluctuations as well as parkinsonism. However the aetiology of these symptoms is poorly understood. In this presentation I will summarise a range of findings, from our group, made using neuroimaging and neurophysiological approaches, which may help us understand the mechanisms which give rise to these distressing symptoms.

Results: We demonstrate that the occurrence and severity of visual hallucinations in DLB associate with changes in the functional activity of the visual system as measured using BOLD fMRI, arterial spin labelling MR and occipital transcranial magnetic stimulation both within early visual areas and dorsal visual stream. In contrast, rather than specific brain regions, we find that cognitive fluctuations and attentional dysfunction in DLB appear to relate more to functional alterations in distributed brain networks including motor and non-motor networks as well as possibly dysfunctional transitions between attentional task and default mode brain states. Parkinsonism in DLB is associated with dopamine transporter loss and neuropathologically we show that such changes are influenced by nigro-striatal neuronal dysfunction or loss rather than the presence of pathological lesions. Finally I describe data from our group which demonstrates that variances in motor network activities as measured using combined electroencephalography and electromyography may also relate to cognitive function.

Conclusion: Touching upon range of studies, this presentation highlights how multi-modal investigative approaches can shed new light on the biological underpinnings of the core symptoms of DLB.

SY19-04

Multimodal imaging techniques and their utility in monitoring treatment response in AD and DLB

Kejal Kantarci, *Department of Radiology, Mayo Clinic, United States*

The challenge of differential diagnosis of patients with Alzheimer's disease (AD) dementia and dementia with Lewy bodies (DLB) is that the underlying pathology is frequently complex with contribution from both AD and Lewy body disease pathologies. The potential for disease-modifying treatments for AD, as well as the responsiveness to cholinesterase inhibitor treatment and marked neuroleptic sensitivity of DLB patients generate

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a need for surrogate markers for AD and Lewy body disease pathologies. Whereas amyloid PET and structural MRI may be useful in detecting the pathologic features of AD, patients with DLB are characterized by hypometabolism in the parietal and occipital cortex on 18F-FDG PET images. The metabolic impairment in the occipital lobe responds to cholinesterase treatment, suggesting a link between cholinergic dysfunction and hypometabolism in DLB. Imaging modalities that are sensitive to different pathologic components of the disease process may provide complementary information for characterizing patients with DLB and differentiating the contributing pathologies to the dementia syndrome. Furthermore, both DLB and AD patients are frequently treated with acetylcholinesterase inhibitors to improve cognitive function. Similarly, both disorders demonstrate loss of cholinergic neurons in the nucleus basalis of Meynert, but the loss appears to occur earlier in DLB and is far greater than in AD. Thus patients with DLB would be expected to respond better to acetylcholinesterase inhibitors than AD. This raises the possibility that neuroimaging markers of AD and Lewy body related pathology may be associated with response to acetylcholinesterase inhibitor treatment and be used in predicting treatment response. Multimodality imaging characteristics of AD and DLB will be discussed along with the potential to use these multimodality imaging markers for predicting treatment response in AD and DLB.

SY20-01

FTLD in Asia—Overview

Manabu Ikeda, *Department of Neuropsychiatry, Faculty of Lifesciences, Kumamoto University, Japan*

Fronto-temporal dementia (FTD or bv FTD) is included in more the comprehensive construct, Frontotemporal lobar degeneration (FTLD), that comprises frontal type dementia, with other subtypes such as semantic dementia (SD) and progressive non-fluent aphasia (PA). In spite of the possibility that FTLD has been under-recognized clinically it is thought to account for up to 20% of presenile dementia. In Western countries, about 30% of FTLD cases had positive family history while familial case was very rare in Japan. It is very important to pay attention to distinctive unusual behaviors and cognitive impairments of FTLD, such as disinhibition, loss of social awareness, overeating, perseverative and stereotyped behavior, impulsivity, and progressive aphasias for early and accurate diagnosis. However, behaviors and aphasias are modulated by many factors including personal habits, ethnic culture, and language systems. To investigate the difference of heritability, subtypes ratio, and clinical symptoms between Western and Asian countries, we conducted international multi-center survey.

SY20-02

FTD in India—Distinctive behaviours and a florid disease

Amitabha Ghosh, *Department of Neurology, Cognitive Neurology Unit, Apollo Gleneagles Hospitals, India*

Objective: Recent studies have suggested the presence of distinctive clinical features in Indian patients with behavioural variant frontotemporal dementia (bvFTD). In this symposium, we will review the current data on these features and see if they represent a peculiarly Asian pattern as opposed to that seen in western European and North American patients. Particular attention will be given to environmental dependency behaviours, especially utilization behaviour (UB) and imitation behaviour (IB), both of which are frequently seen in Indian FTD patients Methods that improve the detection of UB and IB will be discussed. Comments will also be made on abnormal eating behaviour in our patients and how they differ from eating behavioural abnormalities in other regions of the world.

SY20-03

Neuroimaging and genetic studies of FTLD in Taiwan

Jong-Ling Fuh, *Department of Neurology, Taipei Veterans General Hospital, Taiwan*
Y Liu, *Neurological Center, Cardinal Tien Hospital, Taiwan*

Frontotemporal dementia (FTD) is a group of neurodegenerative disorders characterized by atrophy of the frontal and temporal lobes (1). The typical clinical presentations of FTD comprise a behavioural syndrome (behavioural variant FTD, bvFTD) and at least two language syndromes, semantic dementia (SD) and progressive nonfluent aphasia (PNFA). However, these presentations overlap with motor neuron disease/amyotrophic lateral sclerosis (FTD-MND/ALS) and with the atypical parkinsonian disorders corticobasal syndrome (CBS) and progressive supranuclear palsy (PSP).

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From 2003 to 2012, we retrospectively reviewed 27 cases been diagnosed as FTLD in 2 neurological centers in Taiwan. Their average onset age was 63 years old. Only 2 of them have family history of dementia including one diagnosed as FTD-MND. Eleven patients (40.7%) received the genetic study and 2 of them had C9ORF72 mutations. Regarding the subtypes of FTLD, SD accounted for 40.7% of all diagnoses (n = 11), followed by bvFTD (n = 7), PNFA (n = 8) and FTD-MND (n = 1). The neuroimaging study of our cases revealed consistent finding of left temporal lobe atrophy, including 4 (50%) in PNFA cases and 6 (54%) in SD cases. In contrast, only one case of bvFTD show right temporal lobe atrophy.

SY20-04

FTLD in Asia—From the results of an international multicenter-study

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Frontotemporal lobar degeneration (FTLD) is the second most common cause of early-onset dementia after Alzheimer's disease. FTLD includes three clinical subtypes: frontotemporal dementia (FTD), semantic dementia (SD) and progressive non-fluent aphasia (PA) (Neary *et al.*, 1998). Researches in western countries report a strong family history in FTLD patients. In a community-based study by the Cambridge Group, almost one third of cases (29%) with FTLD had a positive family history (Ratnavalli *et al.*, 2002). In a nationwide survey in the Netherlands, 38% of FTD patients had one or more first-degree relatives with dementia before the age of 80 years compared with 15% of the control subjects (Stevens *et al.*, 1998). In a hospital-based study by the Manchester group (Snowden *et al.*, 1996), a family history was seen in all subtypes of FTLD. Fifty percent of their FTD patients had a positive family history, similar to the findings in a Swedish series (Gustafson, 1987). On the other hand, there are only few studies on heredity in Asian FTLD patients. In two clinic-based studies from Japan, family history was either absent (Ikeda *et al.*, 2000) or reported in less than 5% of FTLD patients (Wada-Isoe *et al.*, 2012). In a study from India, only 8.3% of FTD patients had a first-degree relative affected with a FTLD spectrum disorder. (Ghosh *et al.*, 2013) The authors of the study also suggested that there could be distinctive behavioral patterns in Asian patients with FTD.

As advances in genetics and molecular pathology usher in clinical trials with biologically driven, disease-specific therapies for individual FTLD subtypes, it becomes essential to ensure that cross-cultural clinical and genetic differences in FTLD and its related disorders are clearly recognized. With this in mind, the present study aims to look at the family history in the different FTLD spectrum disorders in Asia.

SY21-01

A comprehensive assessment and intervention program for dementia in a community-based integrated care system in Japan

Shuichi Awata, *Tokyo Metropolitan Institute of Gerontology, Japan*

The Japanese Ministry of Health, Labor, and Welfare released the Direction of the National Dementia Strategy on 18th June 2012 and the Five Year's Plan for Promoting Dementia Strategy (Orange Plan) in 5th on September 2012. These are regarded as the national plan for establishment of community-based integrated care systems supporting the lives of people with dementia and their families at this stage. In the context of community-based integrated care systems, it is especially important to establish the early diagnosis and intervention system through addressing prejudice against dementia among general population, strengthening the function of the community-based integrated support centers, promoting the capacity of primary care physicians, placing adequate number of the dementia medical centers and the dementia support clinics, and creating the local strategy for integration of community care. As a strategy for integration of community care for dementia, the deployment of teams of experts to facilities such as CISCs is planned so that a comprehensive assessment and intervention are provided in an integrated fashion within the community at the stage where dementia is first recognized. The teams, called "the Early Intensive Support Team for Dementia", will perform the following duties: (1) collect, organize, analyze, and share information regarding the individual with dementia; (2) cooperate with

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medical personnel in diagnosing dementia; (3) support family members who will care for the individual with dementia; (4) prepare an action plan for problem-solving according to the individual case; and (5) implement problem-solving process by providing appropriate services in an integrated fashion. In 2013, model projects are to be undertaken at 10 locations throughout the country. The current status of this strategy will be discussed.

SY21-02

Anemia and risk of dementia in older adults: Findings from the health ABC study

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Objective: To determine if anemia is associated with incident dementia in older adults.
Methods: We studied 2,552 older adults (mean age 76.1 years; 38.9% black; 51.8% female) participating in the Health Aging and Body Composition study and free of dementia at baseline. We defined anemia using the World Health Organization (WHO) criteria (hemoglobin concentration; <13g/dl for men and <12 g/dl for women). Dementia diagnosis was determined by dementia medication use, hospital records, or a change in the Modified Mini-Mental State (3MS) score of more than 1.5 SD from mean. Discrete time Cox proportional hazard regression models were used to examine the hazard for developing dementia associated with anemia.
Results: Of 2,552 participants, 392 (15.4%) older adults had anemia at baseline. Over 11 years of follow-up, 455 (17.8%) participants developed dementia. In the unadjusted model, those with baseline anemia had an increased risk of dementia (23% vs 17%, HR = 1.64; 95% CI 1.30, 2.07) compared to those without anemia. The association remained significant after adjusting for demographics, Apolipoprotein E $\varepsilon 4$, baseline 3MS score, comorbidities and renal function. Additional adjustment for other anemia parameters (mean corpuscular volume, red cell distribution width), erythropoietin, and C-reactive protein (CRP) did not appreciably change the results. There was no interaction by sex and race on risk of developing dementia.
Conclusion: Among older adults, anemia is associated with an increased risk of developing dementia. Findings suggest that further study of anemia as a risk factor for dementia and a target for intervention for cognitive health is warranted.

SY21-03

Course of neuropsychiatric symptoms in Alzheimer's disease

Seung-Ho Ryu, *Department of Psychiatry, Konkuk University School of Medicine, Konkuk Univ. Medical Center, Korea*

Neuropsychiatric symptoms (NPS) are common in Alzheimer's disease (AD). They are consistently associated with increased caregiver burden and diminished quality of life for both patient and caregiver, and more rapid cognitive decline, premature institutionalization. Mild cognitive impairment (MCI) is thought to be the transitional state between normal aging and AD, although not everyone with MCI will develop AD. Several studies have reported the frequency and the prevalence of NPS in MCI and they showed that those symptoms are common. NPS in MCI are associated with cognitive and functional decline and might be a predictor of progression to AD. It is important that in terms of management and prevention to know their natural course and effects in AD, even in MCI as well.

NPS in patients with AD and MCI were chronic and persistent in community-dwelling older people. Many individuals became better or worse. Those with persistent symptoms had more severe baseline symptoms. Both patients and caregivers had a poorer quality of life when the patient had at least one clinically significant symptom. Clinically significant levels of NPS were associated with greater costs of care in patients with AD. Patients with MCI who have converted to AD might have different profile in NPS compared to those who have not.

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NPS might be highly persistent overall in patients with AD and MCI. NPS tend to be changeable and chronically persistent irrespective of dementia severity. Active approaches will be appropriate for patients with AD and even MCI due to their impact on both patients and caregivers.

SY21-04

Spatial navigation impairment as a behavioral marker for Alzheimer's disease

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Background: Human spatial navigation involves landmark recognition, egocentric route following, directional sense, cognitive mapping, path integration, and problem solving ability. Impairment of any of the mentioned abilities will result in way-finding difficulty or even getting lost. From clinical viewpoint, spatial navigation impairment (SNI) may occur in people with Alzheimer disease (PwAD) in the very early stage or in places they know very well such as their own neighborhoods or community. More often than not, it can be one of the incipient symptoms of AD which occurs months or years before the emergence of other cognitive deficits.
Aim: In this talk, the presenter will introduce several unique findings observed by our research team regarding the mechanisms of spatial navigation impairment in PwAD (mild).
Method and findings: These patients, in fact, have normal abilities to produce and use personally familiar cognitive maps when assessed by virtual reality arena. They are, however, impaired in the recognition of familiar landmarks of theirs, in particular in a twilight or blurred condition. Moreover, young onset PwAD have more difficulties choosing direction in the crossroads. The under-appraisal or poor awareness of the SNI in PwAD may result in their repetitive getting lost. We have developed a questionnaire to assess everyday navigational ability (QuENA). A two and half-year follow-up study to predict incidence and recurrence of getting lost in a group of community dwelling PwAD will be reported. To improve traffic safety and quality of life of the PwAD, all health providers are welcome to apply the QuENA onto their patients. The QuENA is upon request at pair@mail.ncku.edu.tw.
Conclusion: The mechanisms for SNI are complex. The impairment in early visuoperceptual processes might play a critical role and the association between landmarks and the destination may also be disrupted. Based on the brain-behavioral relationship, the role of SNI as a marker for AD is promising.

SY22-01

Epidemiology of anxiety disorders in older people in Australia

Gerard Byrne, *Department of Psychiatry, School of Medicine, University of Queensland, Australia*

The Australian National Survey of Mental Health and Wellbeing (NSMHWB) conducted in 2007 included 1,905 community-residing persons aged 65–85 years. It did not sample individuals in hospitals, nursing homes or caravan parks. This epidemiological survey generated DSM-IV and ICD-10 diagnoses based on the Composite International Diagnostic Interview (CIDI). The NSMHWB assessed generalized anxiety disorder, panic disorder, agoraphobia, social phobia, post-traumatic stress disorder, and obsessive-compulsive disorder. It did not assess simple phobia. Population weighted prevalence estimates were calculated using STATA/SE survey routines and individualised person weights. Estimates were standardized to the 2007 population using projections from the 2006 Australian census. Standard errors for confidence intervals were calculated using 60 delete-one jackknife repetitions.

Non-hierarchical DSM-IV 12-month prevalence estimates (%; 95% CI) for persons aged 65–85 years were as follows: generalized anxiety disorder 1.4 (0.8–1.9); panic disorder 0.5 (0.2–0.9); agoraphobia 0.3 (0.1–0.6); social phobia 1.0 (0.6–1.7); post-traumatic stress disorder 1.6 (1.1–2.2); obsessive-compulsive disorder 0.7 (0.4–1.1); and any anxiety disorder 4.3 (3.3–5.2). Use of ICD-10 criteria led to generally higher prevalence estimates: generalized anxiety disorder 1.5 (1.0–2.1); panic disorder 0.9 (0.5–1.4); agoraphobia 1.0 (0.6–1.5); social phobia 1.3 (0.8–1.8); post-traumatic stress disorder 2.5 (1.8–3.2); obsessive-compulsive disorder 0.7 (0.4–1.1); and any anxiety disorder 6.0 (4.9–7.1). The differences in prevalence estimates between the DSM-IV and ICD-10 nosological systems can be explained by differences in diagnostic criteria.

A significant proportion of older people with an anxiety disorder also met diagnostic criteria for another mental disorder. Of those with a DSM-IV 12-month anxiety disorder, 60% had a single anxiety disorder, 14% had at least one additional anxiety disorder, and 26% had at least one affective

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or substance use disorder. Similarly, of those with a 12-month anxiety disorder 78% had a comorbid physical disorder. Of those with a 12-month affective disorder, 45.4% had a comorbid anxiety disorder. Thus, anxiety disorders do occur in pure culture in community-residing older Australians.

The level of psychological distress associated with anxiety disorders can be estimated using the Kessler 10-item self-report scale (K-10). Of older people with any 12-month DSM-IV anxiety disorder, 30% had high or very high K-10 scores compared to 2.7% with no history of anxiety disorder. Of older people with a 12-month anxiety disorder, 6.2% reported that they had seriously thought about suicide during the past 12 months and 2.5% reported that they had attempted suicide during the past 12 months. Although this level of anxiety-related suicidality is less than that associated with affective disorder, it nevertheless underscores the severity of anxiety for some older people.

Anxiety disorders in older people are also associated with considerable disability in older people. Using the 12-item WHO Disability Assessment Schedule (WHODAS12), we found that older people with a 12-month history of any DSM-IV anxiety disorder had much higher levels of disability than those without a history of anxiety disorder [21.8 (SD 19.4) vs 10.7 (SD 14.1); $F(1, 1894) = 46.5$, $p < 0.0001$].

In summary, anxiety disorders are highly prevalent in older Australians and are associated with high levels of distress and disability.

SY22-03

Epidemiology and treatment of late life anxiety disorders in Japan

Jin Narumoto, *Department of Psychiatry, Kyoto Prefectural University of Medicine, Graduate School of Medical Sciences, Japan*

Objective: Late life anxiety disorders have been unrecognized in Japan compared with dementia and depression. However, the disorders are associated with a significant decrement in QOL and deserve more attention. The objective of this presentation is to provide a current review of epidemiology and treatment of late life anxiety disorders in Japan.
Method: We searched Medline and Japan Medical Abstracts Society for epidemiologic studies of late life anxiety disorders in Japan. We also searched data available from the website of Japanese Ministry of Health, Labour and Welfare.
Results: There were only a few studies reported about this topic. The prevalence of anxiety disorder was reported to be 0.7% for panic disorder, 1.1 for general anxiety disorder and 1.8 for any anxiety disorder among 2012 subjects randomly selected from residents in an urban community. The prevalence was less in people aged over 65 compared with younger people. The total estimated number of patients with anxiety disorders aged over 65 who were receiving treatment was 12,300 while 19,100 for patients with depression in the survey performed by Japanese Ministry of Health, Labour and Welfare Regarding treatment in 2011. One large cross-sectional review of psychotropic prescriptions in 796 patients reported high use of anxiolytics in older adults in the absence of concomitant antidepressant use.
Conclusion: Epidemiology of late life anxiety disorder is less investigated although the number of patients is comparable to late life depression. From the limited evidence, the number of patients with late life anxiety disorder seems to be large enough to develop specialized program. Further studies of epidemiology are needed to provide better treatment and care for the patients with late life anxiety disorders.

SY23-01

Gender specific predictors of Alzheimer's disease in subjects with MCI: A credos study

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S Choi, *Inha University Hospital, Korea*
S Kim, J Lee, *Asan Medical Center, Korea*
J Ha, *Lohas Dong Seoul Hospital, Korea*

Objective: Alzheimer's disease (AD) disproportionately affects women in prevalence. Although it is partly explained by longevity of females, the biological mechanism underlying gender difference regarding disease etiology still needs clarification. Risk factors associated with AD conversion from MCI are evaluated with additional emphasis on gender difference in this study.
Methods: This study was part of the Clinical Research Center for Dementia of South Korea (CREDOS) study: a 6-year, prospective, nation-wide multicenter study designed to assess the occurrence and risk factors of cognitive disorders. Participants 60 or older and diagnosed either MCI or vascular cognitive impairment (VCI) at baseline with at least one follow-up visit were included in this study. Participants underwent laboratory study including APOE genotyping and Brain MRI. White matter lesions (WML) on MRI were quantified with visual rating scale developed for the CREDOS.

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Neuropsychological tests and clinical evaluations were implemented at each visit.
Results: A total of 294 subjects with MCI were included for the analysis, of which 67 (23%) converted to Alzheimer's disease (AD) during a period of 3 years. Using cox proportional hazards model, periventricular WML severity and time interaction term of depression predicted progression to AD controlling for age, sex, education, Hachinski ischemic score (HIS), various vascular risk factors, baseline global cognitive function, disease severity and APOE genotype. Stratification by sex revealed that the association differed by sex. Depression and e4 allele carriership remained significant predictors of AD only in females while severe periventricular WML predicted AD only in male counterparts.
Conclusions: Risk factors related with progression to AD differed by sex. Depression and APOE genotype predicted AD in females while periventricular WML severity predicted AD in male counterparts.

SY23-02

The characteristics of basic communication deficits of Alzheimer's disease and support strategies

Kiyoko Iiboshi, *Shigakukan Unuversity, Japan*
M Mimura, *Keio University School of Medicine, Japan*

Objective: To discuss clinically useful classification of individuals with Alzheimer's disease (AD) based on their communication deficits. In addition, support strategies for the communicative problems of AD are proposed according to the level of hearing difficulty.

1. Clinical classification of AD based on communication deficits Seventy eight individuals with probable AD received pure tone auditory test (PTA), Mini Mental State Examination (MMSE), and language and articulation screening test as an index for basic components of communication. Cluster analysis revealed five types of communication disabilities of AD; generally preserved, with hearing difficulty, with cognitive deficits, with articulatory difficulty, and generally impaired.

2. Support strategies for communicative problems of AD individuals with hearing difficulty

1) Factors determining application of a hearing aid

Fifty one individuals with probable AD who were using a hearing aid received PTA, MMSE, word recognition test (WRT), and Hearing Handicap Inventory for Elderly. Factors determining the application of a hearing aid included preserved auditory word recognition and attention. Factors for discontinuation of a hearing aid included incomprehension for hearing aid, discomfort of sound or noise, and psychological symptoms such as anxiety, angry and delusions.

2) Effect of watching mouth movements

Eighty individuals with probable AD received PTA, MMSE, and WRT. Each participant listened to the words in two different ways, with or without watching mouth movements. Watching mouth movements significantly improved overall auditory word recognition. In addition, benefit of watching mouth movements was more remarkable for those whose level of hearing difficulty was moderate or severe, irrespective of cognitive status.

SY23-03

Wisdom: Do we need to reach the summit or is it about the journey?

Leander Mitchell, *University of Queensland, Australia*

Objective: This presentation will compare and contrast how Australians, from a variety of multicultural backgrounds, characterize a wise person.
Method: Australians aged 50 years and over completed a questionnaire looking to characterize a wise person in two ways. First, participants were invited via an open-ended question to ascertain how they would describe a wise person; second, these same participants were asked to rate a list of characteristics commonly associated with wise people.
Results: Analysis of the open-ended responses revealed three key concepts or themes: life; knowledge; and experience. A quantitative analysis of the ratings of wise descriptors identified the following broad categories as being most descriptive of a wise person: deeper levels of understanding; good judgment; and communication skills. Of particular interest with regards the descriptor ratings was that participants endorsed life experience, but not knowledgeable, as being associated with wisdom, despite the results of the qualitative analysis. Descriptors thought least applicable included 'conservative'; 'older'; 'educated'; 'successful'; and 'quiet'.
Conclusion: A wise person, as described by an Australian 50+ population, is understood at the broadest level to be someone who has lived

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life, gained from experiences, and developed their knowledge. A further and interesting result of the analysis was the identification of a discrepancy between the themes identified within the qualitative analysis and those within the quantitative analysis. Specifically, while knowledge appeared as a quality of wisdom when participants were asked to provide open-ended responses, it was not highly endorsed when participants were asked to rate it as something of a common descriptor of a wise person. The results of this study suggest that, in the case of Australians at least, a wise person is the product of their lived life, allowing for deeper levels of understanding of situations, applying good judgment, and being able to communicate decisions well.

SY23-04

Differential impacts of social supports on the caregiver burden in dementia

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D Lee, *Inje University Sanggye Paik Hospital, Korea*
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J Kim, *Chungnam National University Hospital, Korea*
S Lee, *Dankook University Hospital, Korea*
J Lee, *Kyungbook National University Hospital*
K Kwak, *Dongguk Medical Center, Korea*
B Kim, *Gyeongsang National University Hospital, Korea*
J Park, *Jeju National University Hospital, Korea*

Background: As the prevalence of dementia increases rapidly, care burden of dementia has been main issue in the global society. There have been variable psychosocial interventions for reduction of caregiver burden, the systematic research about determinants of care burden or mechanism of social intervention has not been accomplished yet. We aimed to establish evidences for designing effective psychosocial intervention for dementia care burden by classifying care burden into psychological and non-psychological burden and identifying specific type of social supports influencing each burden and mechanism of each support.

Methods: We evaluated 731 community-dwelling dementia patients by comprehensive diagnostic protocol and caregiver burden of their caregivers from the National Survey of Dementia Care in Korea (NaSDeCK). We used the center for epidemiologic studies depression scale-short form (CES-D10) as a measure of psychological burden. We developed the measure of non-psychological burden by factor analysis of Zarit burden inventory-short form (np-ZBI-s). To identify specific type of social supports influencing on each burden, we employed stepwise multiple regression analysis. To explore the mechanism of specific type of social support on each burden, the direct and indirect effect of social support were obtained using path analysis.
Results: Among the types of social supports, positive social interaction and affectionate support reduced psychological burden via direct and indirect paths. Tangible support reduced the non-psychological burden via direct and indirect paths. About maximum 20% of psychological burden could be changed by positive social interaction, 10.3% by affectionate support. Tangible support brought maximal change of the non-psychological burden by 15.1%.
Conclusions: In order to reduce caregiver burden in dementia effectively, the tailored intervention reflecting differential impacts of social supports on specific domain of care burden would be necessary.

SY24-01

The interaction of stress, psychiatric disorders and personality in the development of suicidal behaviour in later life

Brian Draper, *School of Psychiatry, University of NSW, Australia*
J Snowdon, *Discipline of Psychiatry, University of Sydney, Australia*
D Leo, K Kolves, *Australian Institute for Suicide Research and Prevention, Griffith University, Australia*

Background: Risk factors for suicidal behaviour in late life include depression and other psychiatric disorders, life stress and personality factors but little is known about the interaction of these factors.
Aims: To examine the interaction of psychosocial stressors, psychiatric disorders and personality factors in older people with suicidal behaviour.
Method: A controlled psychological autopsy of suicide in mid to late life that involved interviews with next-of-kin included data on NEO-FFI personality traits, psychiatric disorder, life events and social support (Bille-Brahe Scale).

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Results: Of 259 suicide deaths, 65 (24.9%) had no detectable psychiatric disorder; of 181 sudden death controls, 116 (63.7%) had no psychiatric disorder. Personality traits of suicide cases differed significantly from those of controls, and this finding varied with the presence of psychiatric disorder and age. Suicide cases with a psychiatric disorder differed from suicide cases without a psychiatric disorder on four NEO-FFI-R personality traits having higher Neuroticism and Openness scores and lower Agreeableness and Conscientiousness scores. Older suicide cases without a psychiatric disorder had higher Conscientiousness scores than younger suicide cases without a psychiatric disorder. Similarly, suicide cases with psychiatric disorders experienced more negative life events, needed more social support and received less social support from family and friends compared with suicide cases without psychiatric disorders and the controls.
Conclusion: Risk factors for suicide interact and vary by age, presence of psychiatric disorder and personality traits.

SY24-02

Is ECT effective when used in cases of vascular depression?

John Snowdon, *Sydney Local Health District, Concord Hospital, Australia*

Objective: Various research studies have shown an association between brain white matter hyperintensities (WMHs) and poor response to antidepressant medication. WMHs are believed to result from vascular damage or ischaemia. Older people with late-onset depression show more evidence of white matter changes than age-matched persons whose depression onset was in early or middle age, and it is said that the outcome of treating vascular depression in old age is less favourable than that observed in "non-vascular" cases (in which vascular changes are not thought to have been factors in causation). Thus treatment resistance in cases of late-life depression is commonly attributed to underlying vascular problems. Outcome studies have shown response rates of about 60% after treating late-life depression with adequate doses of a first and then a second antidepressant. However, subsequent treatment with ECT may lift the response rate to 80%. Why does ECT work when placebo and antidepressants don't? Is it as effective in vascular depression as it is in non-vascular cases? To date there has been little in the literature to show whether there are differences in response to ECT in vascular and non-vascular depression cases, nor whether the course is more likely to be prolonged, bilateral, with cognitive deterioration, or followed by maintenance ECT.
Method: A pilot study to examine the feasibility of conducting a study to answer these questions has been conducted in Sydney.
Conclusion: One of the difficulties has been in establishing reliability in classifying episodes of depression as "vascular" and "late-onset".

SY24-03

Depression and suicide behaviour in later life: Pathways to illness, management and prevention

Osvaldo Almeida, *WA Centre for Health & Ageing, University of Western Australia, Australia*

Depression is a common and disabling disorder that affects people of all ages. The causes of depression are not well understood, but consistent information about risk factors is available. These include familial predisposition, certain lifestyle choices, clinical morbidities and exposure to various forms of stress. Stepped care programs have succeeded in reducing the prevalence of depression in people with depressive disorders, as well as the incidence of depression in people with subthreshold depressive symptoms. However, despite their established efficacy, they have not been adopted widely into clinical practice because of policy and financial constraints. Recent epidemiological evidence indicates that a more systematic approach to the management of risk factors might be a practical and effective strategy to reduce the prevalence of depression in the community, but trial data are not yet available. This presentation will discuss the methods that underpin the development of risk models for depression and how these can be used in clinical practice to decrease the prevalence of depression in the community.

SY25-01

The IPA taskforce on capacity presents: Complex clinical conundrums in capacity

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S Finkel, *University of Chicago Medical School, University of Chicago, United States*

In this sixth symposium presented by the IPA Capacity Taskforce (formerly the Testamentary Capacity and Undue Influence Taskforce), we present a series of choice cases highlighting complex clinical and ethical issues in capacity, presented to our international, cross disciplinary panel of experts. The issue of capacity (or decision-making ability) has evolved from a very narrow concept, once considered only relevant to medicolegal contexts and to those acting as expert witnesses, to a broad and far-reaching concept with ethical and human rights implications and relevance to our everyday clinical work in old age psychiatry, and of interest to all working with older people with mental disorder. Contemporary debate about capacity and human rights has elucidated a more nuanced, dimensional concept of task-specific capacity, rather than a global, or diagnosis-bound notion of capacity. Thus, we no longer equate presence of mental disorder with loss of capacity, and we no longer opine that someone "lacks capacity", but rather, that they "lack capacity to do X". Moreover, shared decision-making provides an important option between autonomous decision making at one extreme, and proxy decision making at another. Cases will be presented which will reflect some of the common, but complex clinical situations where clinicians are asked to assess capacity, such as capacity to give consent to treatment in residential care facilities or at the end of life, or to give consent to intimate relationships, or, in certain jurisdictions, to request euthanasia. We will present complex issues around will-making, and explore cases where personality may impact on decisional ability and discuss the ethical implications of invoking personality in capacity assessments.

SY26-01

Mild cognitive impairment in late-life depression

Cheng-Sheng Chen, *Psychiatry, Kaohsiung Medical University Hospital, Taiwan*

Cognitive impairment in remitted late-life depression varies and might be associated with greater risk of dementia in some individuals. This study aimed to classify the subtypes of mild cognitive impairment (MCI) in late-life major depressive disorder in remission and to examine their clinical correlates and structural magnetic resonance imaging (MRI) features.

Elderly patients with major depressive disorder in remission and elderly comparisons were examined by a comprehensive battery of cognitive tasks. Proposed diagnostic criteria were used for MCI classification, and the degree of brain atrophy and white matter hyperintensity on MRI were evaluated.

We found information-processing speed and memory were independent cognitive domains associated with late-life remitted major depressive disorder. Of the study cohort, 52.3% met the definition of MCI, including 28.5% with amnestic MCI (aMCI) and 23.8% with non-amnestic MCI (naMCI). A clinical correlate of aMCI was the late-onset of disorder (OR = 4.76; 95% CI = 1.57, 14.40) and of naMCI was a higher score on the Framingham stroke risk scale (OR = 1.39; 95% CI = 1.12, 1.72). The odds ratio of highest quartile of ventricular atrophy for aMCI compared to the comparisons was 3.65 (95% CI = 1.22, 10.96).

The central cognitive impairments among the elderly with major depressive disorder in remission were memory and information-processing speed, and over half of the subjects met the MCI diagnostic criteria. Different risk factors existed for the subtypes of aMCI and naMCI. Later-age onset of first episode and ventricular atrophy were associated with aMCI, whereas vascular risk factor for naMCI. We suggest there were different pathogeneses between aMCI and naMCI in late-life major depressive disorder.

SY26-02

The role of nutrition in late-life depression

Chih-Chiang Chiu, *Department Of Psychiatry, Taipei City Psychiatric Center, Taipei City Hospital, Songde Branch, Taiwan*

Depression in late life severely affects the quality of life in older people and their careres. However, they are often underdiagnosed and undertreatment. Older people with late-life depression have higher risk of cognitive impairment and further dementia. Several factors have been investigated in their relationship with the etiology or outcome of depression. Among them, nutritional factors, such as omega-3 polyunsaturated fatty acids (PUFAs), vitamin B12, folate, and obesity, may have

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a potential role in depression and cognitive impairment in this population; however, it has not been adequately studied.

In this presentation, I would like focus on only a few nutritional factors, vitamin B12, folate, and omega-3 polyunsaturated fatty acids (PUFAs). In terms of omega-3 PUFAs, increased fish consumption has been found to be associated with lower likelihood of depression in older people. Plasma omega-3/omega-6 PUFA ratio has been reported to be lower in older people with depressive disorders. In addition, plasma EPA may be negatively associated with the severity of depressive symptoms in this group. In older people with late-life depression, erythrocyte total n-3 PUFA levels are positively associated with cognitive function, particularly immediate recall, in older people with previous depression.

Lower concentration of folate or vitamin B12 and higher homocysteine concentration have been reported to be associated with depression of older people in cross-sectional and prospective studies in spite of inconsistent results. The results of investigating their relationships with cognitive impairment seem to be less evident.

The possible role of these nutrition factors in people with late-life depression will be presented in this review. The possible clinical application and further study direction will be addressed.

SY26-03

Suicidal ideation in Korean elders

Hee-Ju Kang, J Kim, *Chonnam National University Medical School, Korea*

The suicidal rate is disproportionally higher in older adults than in the general population. The spectrum of suicidal behavior ranges from suicidal ideation to actual attempts and finally to completion. Suicidal ideation (SI) is closely related to more severe suicidal behavior and is an important predictor of suicide attempt and completion. Therefore, from a public health perspective, understanding the epidemiology and etiology of SI is an important step towards developing and evaluating suicide prevention strategies. Using data from a longitudinal community study of an older Korean population, this study aimed to estimate the prevalence, incidence, and persistence rates of SI over a two year period; and to investigate various factors associated with these. Baseline SI prevalence, and follow-up incidence and persistence were 11.5%, 9.6%, and 36.5%, respectively. Baseline SI was independently associated with urban residence, no current employment, stressful life events, more severe pain, presence of disability, and depression. Incident SI was independently predicted by baseline unmarried status, social support deficit, and severe pain. Persistent SI was independently predicted by baseline stressful life events and depression. Additionally both high and low total and LDL cholesterol levels at baseline and a decline in total cholesterol levels over the follow-up period predicted an increased incidence of SI at follow-up independent of sociodemographic and clinical covariates. In respect with gene-environment interactions, significant interactions were observed between 5-HTTLPR genotype, stressful life event(SLE)s and social support deficit(SSD)s on the prevalence and incidence of SI after adjustment for covariates. The associations of SLEs and SSDs with SI were strengthened with the increasing number of the s allele, and were statistically significant in the presence of the s/s genotype. A significant three-way interaction between 5-HTTLPR genotype, SLEs and SSDs was also found. Not only the significant association with factors such as depression, social support deficit, stressful life event, cholesterol level but also gene-environment interactions on SI in later life were found. A biopsychosocial approach to evaluating the SI in late-life is heuristically valuable.

SY26-04

Research in late life depression: Where do we head next?

Ranga R. Krishnan, Duke-NUS Graduate Medical School, Singapore

In the last decade we have made enormous progress in understanding late life depression. We have shown that it is linked to vascular disease and that the risk factors are different from depression at a young age. We have also shown that this type of depression is a risk for dementia. But our understanding on how to treat is limited. Preliminary studies suggest that nimodipine could be useful and that carotid stents may also help. But definitive studies are lacking and these should be a priority.

SY27-01

Cognition and gait: Why do people with cognitive impairment fall?

Amer Burhan, *SJHC-London and Schulich Medical School/Western University, Canada*

Until recently cognitive impairment and falls where thought to be separate problems in old age. Older adults with dementia are more likely to have gait impairment and falls than those without dementia.

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Falls are associated with significant increase in mortality and morbidity in patients with dementia, an increase in patients suffering, caregiver burden and health care utilization.

Community dwelling older adults with subtle executive deficits are more likely to fall and to sustain significant injury as a result of falls. Slowness of gait was found to co-exist or precede the onset of cognitive impairment in older adults. Patients with mild cognitive impairment (MCI), a transitional stage between cognitive aging and dementia, tend to have gait impairment, which puts them at risk of future falls. The relationship between gait and cognition is a complex one. For a long time, walking was thought to be an automatic motor program with little involvement of higher cognitive networks, but recent evidence suggests that walking in natural environment require attentional resources to adjust for environmental variability. The classic "stop walking while talking" study demonstrated that this phenomenon predict future falls in nursing home residents. Dual task paradigm, where participants perform attention-demanding task while walking is based on the hypothesis that walking requires attentional resources and when there is a cognitive task competing for attentional resources, gait parameters change. In addition to gait velocity, other gait parameters such as gait variability such as stride time have received attention in recent years. High gait variability is associated with future falls. This presentation will discuss the literature on the association of gait changes at different stages of cognitive impairment in old age based on recently published evidence-based reviews and the implications of this association on assessment and care of patients presenting with cognitive impairment in old age.

SY27-02

Falls in dementia patients: Implications for care in the patient and beyond

Hae-Ryun Park, *Geriatric Psychiatry, University of Western Ontario, Canada*

Dementia affects 5–7 % of the population over 60 years of age, and 60% of this population falls each year. Dementia is identified as an independent risk factor for falls. Older adults with dementia fall twice more often than that of cognitively intact, and are at high risk of recurrent falls and sustaining injuries.

A history of falls or recurrent falls in the previous 12 months, activities of daily living limitations, symptomatic orthostatic hypotension, abnormal gait or balance score, impaired vision and depression score are among the known risk factors for falls in older adults. The use of psychotropic and multiple medications has consistently been found to be associated with falls. Falls are often multifactorial in origin. The assessment of falls requires comprehensive and multifactorial approaches. Drug use is one of the most modifiable risk factors for falls and falls-related injuries. Although several classes of medications are implicated, psychotropic and benzodiazepine drug use is most consistently associated with falls. One study reported a 66 % reduction in falls after reducing psychotropic medication use. The risk of falling for people with dementia is especially high shortly after admission and after transfer to other hospital units. A Cochrane systematic review of clinical trials of studies to reduce falls in older residents of long-term care facilities and hospitals, Cameron *et al* (2010) concluded that the overall effect of multifactorial interventions on fall reduction was inconclusive but was more successful when implemented by a multidisciplinary team.

At the Geriatric Psychiatry Program, we have an inpatient unit devoted for the care of older adults with behavioral and psychological symptoms of dementia. This population is particularly vulnerable to falls due to their advanced dementia, the use of psychotropic medications and a host of other medical and psychiatric co-morbidities. In this interactive presentation we will present cases.

SY27-03

Experience with clinical fall monitoring in psychogeriatric inpatients

Tom Ross, *SJHC-London, Canada*

Up to 36% of psychiatric inpatients experience one or more falls and up to 78% of falls could be anticipated based on patient's physiological state and therefore the risk for these falls could be modified.

At our psychogeriatric inpatient Program "risk events" including aggression, falls and others are recorded and entered into an electronic database to allow analysis of data, which help understanding predictive factors for these events. From the year 2000–2008 a total of 5,614 risk events were recorded, of which falls represented 27%. Falls were more common in patients diagnosed with dementia and they happened more frequently in patient's bedroom, often un-witnessed, resulting in harm up to 35% of the time. A multi-disciplinary fall prevention group was formed and the Falls Risk Assessment Tool (FRAT) was developed as an adaptation from

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the Morse Fall Scale and the RAFT (Risk Assessment Falls Tool) to better measure the risk factors associated with falls in our population. The rater-administered FRAT includes ten assessment items and generates a total score and places an individual in a low, medium or high risk range. A series of 30-minute group education sessions on administering the FRAT were provided to nursing staff prior to its implementation. The FRAT was completed on 172 consecutively admitted patients (52% males) over the first five months of the falls prevention initiative. Actual falls were recorded in the Patient Safety and Reporting System. In addition to the FRAT, five domains including activities of daily living (ADL), cognitive function, pain, aggression and case mix index were examined in the present study to assess predictive value for falls in our patient population. The results indicate that FRAT can predict falls moderately and a combination of FRAT, cognitive function and activity of daily living improves the predictive value of this tool.

SY27-04

Implementation of intelligent fall detection and personal emergency response system in psychogeriatric inpatient units

Amer Burhan, *Schulich Medical School/Western University, Canada*

Seniors are at high risk of falls in all setting and cognitive impairment increases that risk significantly. Significant injury can result from falls and delayed fall detection may result in more complications. At the psychogeriatric inpatient Program at St. Joseph's Health Care in London Ontario Canada, we used clinical data collected over time to profile various risk events including falls. We identified patients with dementia as having a higher risk of falls and that these falls tend to happen with high frequency in patient's own bedroom, often un-witnessed. A confused demented patient who falls in his/her bedroom will likely sustain significant complications from falls.

Several Personal Emergency Response Systems (PERS) and devices have been developed to assist in alerting the medical system of falls in at-risk populations including seniors with or without dementia. This includes wearable devices that have a button the person has to press, bed alarms, direct observation of the person and the like. These methods are helpful but include significant burden on the person and/or the system of care. The Health Evaluation Logging Personal Emergency Response (HELPER) was developed to provide automatic response to falls with minimum burden in the patient or the system. It offers automatic detection of falls and is meant to be a Zero Effort Technology (ZET), i.e. it is unobstructive and does not require any task from the person who falls.

Because we recognize that patients with dementia in our inpatient unit fall at high frequency, often in their own bedroom and un-witnessed, we decided to implement the HELPER system to detect and attend to falls in a timely fashion.

A video illustration of the HELPER and challenges and opportunities related to the implementation of the system will be discussed.

SY28-01

ADHD symptoms across the lifespan in a population-based Swedish sample aged 65 to 80

Taina Guldberg-Kjar, B Johansson, *Department of Psychology, University of Gothenburg, Sweden*

Our knowledge is still sparse about the life course manifestations of ADHD symptoms, particularly in later life and whether elderly who once presented childhood ADHD symptoms can be identified. Results are presented from our first population-based study with the aim of exploring the occurrence to which elderly individuals retrospectively report symptoms that indicate childhood ADHD. We found a prevalence rate of about 3% in this Swedish population aged 65–80. The purpose of our follow-up study was to examine the ADHD symptomatology across the lifespan by comparing older individuals' self-reports about current ADHD symptoms and symptoms in childhood. Our main finding was that higher amount self-reported childhood ADHD symptoms were significantly related to higher amount self-reported ADHD symptoms in old age. Our findings support the idea of a significant persistence of ADHD symptoms from childhood to old age, over the whole lifespan. The results encourage studies of ADHD using a lifespan perspective, particularly in examining ADHD symptoms in old age also concerning the life conditions and treatment potentials in a person first identified with ADHD in old age.

SY28-02

ADHD burden of illness in older adults: A life course perspective in the US

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Background: While it has been suggested that older ADHD patients suffer from the cumulative consequences of ADHD and despite the fact that the number of older ADHD adults will likely increase as the elderly population grows, knowledge regarding the burden of disease on patient functioning, well-being, HRQoL, and disease management is limited.
Methods: Individual telephone interviews were conducted with older ADHD adult participants. Transcripts were qualitatively analyzed following a grounded theory principles to assess convergent and divergent themes.
Results: Mean age of participants (N = 24) was 66 years; mean age at diagnosis was 57 years; 68% were men and 63% reported other comorbid mental health conditions. The majority of participants (63%) experienced an accumulated lifetime burden of illness and reported being financially less-well-off, had lower educational achievement, job performance, and greater social isolation due to their ADHD. Older adults reported significantly greater impairments in productivity (P = 0.02) and a better life outlook (P = 0.05) than younger ADHD adults. Participants found that the stress of ADHD compounded existing stressors in their lives, but none suggested that ADHD symptoms became worse with aging and in some cases, ADHD symptoms were mistaken for signs of dementia. Most subjects (83%) wanted their ADHD "cured", however nearly half of the subjects (46%) identified positive aspects of ADHD including being more creative and enthusiastic, aware of the multiplicity of things, and able to be hyper-focused and multitask when interested in a topic.
Conclusions: Older adults' HRQoL suffers from the accumulative negative impact of ADHD symptoms and impairments. ADHD symptoms in older adults are seldom identified and treated, but our study suggests that identification, treatment, and behavioral strategies improve patients' abilities to cope with the symptoms and clinical services should consider ADHD assessments independent of patients' age if patients' complaints suggest potential ADHD symptoms.

SY28-03

Cognitive functioning and physical health in older adults with ADHD aged 61–94 years

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H Comijs, M Michielsen, A Beekman, *Department of Psychiatry, The Netherlands EMGO Institute for Health and Care Research, VU University Medical Center, The Netherlands*
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Objectives: An emerging body of research shows cognitive deficits in children and younger adults with Attention-Deficit/Hyperactivity Disorder (ADHD). To our knowledge no studies have focused on cognitive functioning in older adults with ADHD. Therefore the present study investigates the association between ADHD and cognitive functioning in older adults.
Method: Data were collected in a two-phase sampling side-study (2008–2009) in the Longitudinal Aging Study Amsterdam.

Data on ADHD symptoms and cognitive functioning was collected from two hundred twenty three randomly selected LASA respondents aged 61 to 94 years during home visits. ADHD symptoms and ADHD diagnosis were assessed with the DIVA 2.0. Cognitive functioning was assessed with tests in the domains of executive functioning, information processing speed, memory, and attention/working memory.
Results: Regression analyses show that ADHD diagnosis (B = −0.45, p = 0.02) and ADHD severity (B = −0.02, p = 0.04) were negatively associated with cognitive functioning in the attention/working memory domain, but not with other cognitive domains. When adjusting for depression these associations were no longer significant (B = −0.32, p = 0.11 respectively B = −0.01, p = 0.25).
Conclusion: The study shows that ADHD in older adults is associated with poorer cognitive functioning in the attention/working memory domain. However, this association was partly explained by depressive symptoms.

SY28-04

Personality characteristics and comorbid anxiety and depression symptoms among older adults with ADHD

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Objective: Both comorbidity between ADHD and depression and anxiety and the relationship between ADHD and personality characteristics such as low self-esteem en Neuroticism have been well documented in children and young to middle-aged adults with ADHD. Yet, little is known about these relationships in older adults with ADHD. In this presentation two studies will be discussed. The first study examined the comorbidity of anxiety and depressive symptoms among older adults with ADHD. This was examined both using cross-sectional and longitudinal data. The other study examined the association between ADHD and personality characteristics and the possible mediating role of personality characteristics between ADHD and depressive symptoms in older adults.
Method: Data were used from the Longitudinal Aging Study Amsterdam (LASA). In the first study participants were examined in three measurement cycles, covering six years. They were asked about depressive and anxiety symptoms. In the second study personality characteristics were examined cross-sectionally. To diagnose ADHD, the DIVA 2.0, a diagnostic interview was administered among a subsample (N = 231, age 60–94). Data were analyzed by means of linear regression analyses and linear mixed models.
Results: Study 1: ADHD diagnosis was associated with more anxiety and depressive symptoms, cross-sectionally as well as longitudinally. Study 2: preliminary results show that older adults with ADHD have low self-esteem, low self-efficacy, low sense of mastery and high levels of Neuroticism and Social Inadequacy. The relationship between ADHD and depressive symptoms seems to be partly mediated by mastery, Neuroticism and Social Inadequacy.
Conclusion: It appears that the association between ADHD and anxiety/depression remains in place with aging. In addition, the relationship between ADHD and depression is partly mediated by mastery, Neuroticism and Social Inadequacy. This suggests that, in clinical practice, directing attention to ADHD, personality characteristics and comorbid disorders may be fruitful.

SY29-01

Screening of personality disorders in older adults in general medical practice: A study of the diagnostic accuracy of the gerontological personality disorder scale (GPS)

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Objective: A growing body of literature supports the clinical importance of screening personality disorders (PD's) in older adults (e.g. Oltmanns & Balsis, 2011; Segal, Coolidge & Rosowsky, 2006). This is in contrast to a lack of age-specific and validated screening measurements, including those that could be used in general medical practice. This study reports the validation of a brief screening instrument (GPS; van Alphen *et al.*, 2006) for PDs in older adults in general medical practice.
Method: 162 men and 186 women (≥60 yrs.) without severe psychiatric disorders or somatic condition that may cause response bias were included from 5 general medical practices in the south of the Netherlands. In addition, 348 informants were included as well. All subjects completed either the GPS-patient version (pv) or the GPS-informant version (iv). An informant personality questionnaire, named the Hetero-Ananmestic Personality Questionnaire (HAP) (Barendse *et al.*, 2013), served as the gold standard.
Results: The internal consistency of the GPS was limited (GPS-pv: α 0.45; GPS-iv: α 0.47). The test-retest reliability was good (GPS-pv: ICC 0.76; GPS-iv: ICC 0.71) as was the inter-rater reliability (ICC 0.62). The sensitivity and specificity of the GPS-pv, with 1 as cut-off, were 85% and 23% respectively (AUC 0.61, ρ. 0.07). For the GPS-iv, the sensitivity was 85% and the specificity was 61% (AUC 0.78, ρ. 0.00) with a cut-off of 3.
Conclusion: These findings suggest that the GPS has acceptable psychometric properties to serve as a brief screening instrument in general medical practice to guide specific interventions for older adults with PDs.

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SY29-02

Age neutrality of the trait facets of the personality inventory for DSM-5

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Objective: In this study the age-neutrality of the Personality Inventory for DSM-5 (PID-5) was investigated. The PID-5 was developed to operationalize 25 traits proposed for section 3 in DSM-5, organized by 5 higher order dimensions: Negative Affect, Detachment, Antagonism, Disinhibition and Psychoticism. Unfortunately the presentation of later life was not explicitly considered in the construction of the PID-5 and thus remains to be empirically evaluated.

Method: In nonclinical samples potential Differential Item Functioning (DIF) in older (N = 176, mean age = 72.3, age range 61–99, 40% male) versus younger adults (N = 288, mean age = 21.05, age range 17–40, 27% male) for the 25 PID-5 proposed trait facets to measure personality pathology were examined. In this way we evaluated if the PID-5 measures the personality traits of interest differently in younger versus older adults after controlling for the overall level of the underlying trait between both age groups.

Results: Overall, 33 (out of 220) items displayed DIF, according to the adjusted Bonferroni corrected cutoffs. In a next step, Differential Test Functioning (DTF) analyses were carried out to examine implications of item level DIF at the scale (i.e., facet) level. These analyses revealed large DTF for four of the 25 PID-5 facets (i.e., Withdrawal, Attention Seeking, Rigid Perfectionism and Unusual Beliefs).

Conclusion: Despite not having explicitly considered the later life context during the development of the PID-5, the results largely corroborate the age-neutrality of the maladaptive personality trait facets proposed to measure personality pathology in the upcoming DSM-5 section 3 in a dimensional way. However, additional research is certainly needed to make the instrument entirely age-neutral.

SY29-03

The interaction of neuroticism with vascular disease burden in late life depression

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The vascular depression hypothesis has stimulated research into the biological predictors of late-life depression, thereby often paying less attention to other theories of depression (Sneed *et al*, 2011). Personality characteristics, especially neuroticism, are strongly related to depression (Kendler *et al*, 2006). Unfortunately, limited data are available with respect to middle aged and older people (Steunenberg *et al*, 2005). Within two different population cohorts (cohort 1, aged 70–90 years old, n = 1396; cohort 2, aged 50–70 years old, n = 1250), we have shown that neuroticism is strongly associated with depressive symptoms. Moreover, depressive symptoms were more strongly associated with neuroticism than with vascular disease, in cohort 1 based on self-report vascular events, in cohort 2 measured by the Intima-Media Thickness (IMT) as measure for subclinical atherosclerotic disease burden. These basic findings are in line with the assumption that neuroticism and cardiovascular disease are vulnerability factors for late-life depression. As the stress-vulnerability model of depression states that stressors may lead to depression, especially in the presence of a long-standing vulnerability, we initially hypothesized that neuroticism and vascular disease may interact with each other and increase the risk by more than the sum of both effects independently. Interestingly, we found opposite effects in both cohorts, i.e., the effect of neuroticism was dampened in the presence of more severe vascular disease burden.

SY29-04

The management of personality disorders in long term care settings

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The presentation on "the management of personality disorders (PDs) in long term care settings" will address three major areas: 1) Reasons for mental health consultation; 2) Goals of treatment; and 3) Principles of clinical management. Reasons for mental health consultation in long term care settings for those with PDs often include increases in maladaptive behavioral patterns due to losses of aging; decrease in already limited social support; and forced contact with institutional systems. Goals for treatment include: contain & limit pathological behavior; establish working alliance with patients, family, and staff; maintain supportive environment; and teach them to better manage inner tension & interpersonal stress (perhaps via mindfulness training). Principles of clinical management include providing conditional acceptance (accepting the person but instituting negative consequences for the behavior), setting limits, consistency, employing counter-transference therapeutically, soliciting family support, and a coordinated team approach.

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