



# Book of Abstracts

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# Keynote Lecture

**Creating or Awaiting Disruptive Innovation – the coming new age of seniors care**

William Reichman

## Plenary Sessions

### **Plenary Session I**

**Prevention of Dementia – a realistic prospect?**

Mary Sano

**Cognitive testing in Latin America and the Caribbean-does culture matter?**

Daisy Acosta

### **Plenary Session II**

**Schizophrenia and Aging: Bad News and Good News**

Dilip Jeste

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**Neuropsychiatric changes in early Alzheimer's Disease**

Jeffrey Cummings

### **Plenary Session IV**

**Deep brain stimulation as a treatment for neurodegenerative disease**

Gwenn Smith

**Can we aspire to live to 150?**

Perminder Sachdev

### **Plenary Session V**

**Evidence based approaches to supporting carers and improving services**

Laura Gitlin

**Meeting the urgent need for Integrated Mental Healthcare for Older Adults in Low and Middle Income Countries**

Martin Prince



# Symposia

## S2: Late Life Loneliness: from private condition to social emergency

### Loneliness and disconnection in self-harm in older adults

Anne Wand

Loneliness and feeling disconnected have been identified as important contributing factors to self-harm in late life in epidemiological studies and are key components of Joiner's interpersonal theory of suicide. However, there have been few qualitative studies examining how loneliness (and other underlying constructs) may play a role in self-harm and what happens over time to such perceptions in older people who have self-harmed, as well as their outcomes.

**Objectives:** To qualitatively follow-up a cohort of older people who had self-harmed, their carer and general practitioner one year later to examine their reflections on self-harm, experiences of clinical care and outcomes.

**Methods:** A qualitative study involving in-depth interviews of older individuals (80+) who had recently harmed themselves and their carers was conducted. A narrative inquiry approach was taken. Medical records were also reviewed to evaluate outcomes.

Questionnaires were sent to the older person's general practitioner to evaluate their perspectives. Interviews were audio-recorded, transcribed and thematically analysed using NVIVO.

**Findings:** Nineteen patients (63% of the baseline sample), 29 carers (90.6%) and 11 GPs (26.7%) were available at follow-up. Over 50% of patients were living in a nursing home. Themes which emerged from patient interviews included 'more invalidation', 'being heard', 'endless suffering', 'denial and secrets', and 'miserable in care'. Themes from carer responses were 'abandonment by clinicians', 'denial and secrets', 'patient's persistent wish to die', 'unending burden for the carer' and 'distress regarding placement'. By contrast, GP themes were 'the troops have arrived', 'the problem is fixed' and 'I understand'.

**Conclusions:** There was synergy between patient and carer perspectives, with many of the factors contributing to self-harm persisting at one year follow-up. Patients continued to feel rejected by their carers and clinicians alike, resulting in ongoing alienation, which their carers experienced too as abandonment. Suicidal secrets further isolate patients. Moving to a nursing home- which for 1/3 was a consequence of self-harm- was perceived as further invalidation, amplifying feelings of isolation. How the system of the older person-carers, general practitioners, and mental health professionals- responds to self-harm may either reinforce or attenuate underlying reasons for self-harm; with clear implications for intervention

### Loneliness: a multifaceted phenomenon

Gabriela Stoppe

Loneliness is the agonizing human experience of separation from other people or communities. Unlike the concept of social integration, loneliness cannot be quantified. Nevertheless, like other psychological phenomena, loneliness can be measured with scales.

Loneliness seems to take a two-pronged course with peaks in youth and old age. Women are more often lonely than men. The causes of loneliness are manifold; they can lie in illnesses and disabilities, but also in the personality structure.

In recent years, loneliness has been described as a risk factor for increased morbidity and mortality. However, it is becoming more and more apparent that loneliness is less of a cause than the associated depression. Loneliness may also be a risk factor for the development of depression, psychosis and possibly dementia.

Loneliness can also have a positive connotation, in the sense of self-chosen and, for example, spiritually understood isolation.

In some Western societies, loneliness is seen as a threatening phenomenon, while in some cases programmes and ministries are set up against it. Today's digitalisation is also intended to open up opportunities for participation beyond physical boundaries.

*Lara E, et al. Does loneliness contribute to mild cognitive impairment and dementia? A systematic review and meta-analysis of longitudinal studies. Ageing Res Rev. 2019;52:7-16.*

*Campagne DM. Stress and perceived social isolation (loneliness). Arch Gerontol Geriatr. 2019;82:192-199.*

*Calati R, et al.: Suicidal thoughts and behaviors and social isolation: A narrative review of the literature. J Affect Disord. 2019;245:653-667.*

## **Loneliness: The Loss of Contact with Oneself**

Carlos De Mendonça-Lima

Research seems to support loneliness as a risk factor for mental health problems in the elderly. Most studies analyzing the effects of loneliness on older adults' mental health have relied on convenience samples. In this study, the prevalence and predictors of feelings of loneliness were studied in a representative sample of 272 community-dwelling Spanish older adults. The potential of feelings of loneliness to significantly contribute to the explanation of mental health of the elderly was also explored. The percentage of people. The preparation of this article was supported by a grant from the Health Department of the Junta de Castilla y León (ref: SOCIO673/01/08 and SAN/1056/2010), the award obtained at the IX Edition of the Fundación Vicente y García Corseles (Universidad de Salamanca), the ISCIII (RD06/018/27), and the FEDER. The authors of this article thank Peregrina Eiroa for her help in the development of this study. Address correspondence to Andrés Losada-Baltar, Facultad de Ciencias de la Salud, Departamento de Psicología, Edificio Departamental II, Avda. de Atenas, s/n. 28922 Alcorcón, (Madrid), Spain; andres.losada@urjc.es (e-mail).277Downloaded by [Andrés Losada] at 14:34 04 June 2012 page 4278The Journal of Psychology reporting feelings of loneliness was 23.1%. Being a woman, being older, living alone, having fewer economic resources, having lower perceived health, and being dissatisfied with the frequency of contact with relatives and friends were found to be significant predictors of feelings of loneliness. Loneliness contributed significantly to the explanation of mental health, even when other significant variables were statistically controlled. The results of this study suggest that loneliness is a relevant factor for the analysis and understanding of mental health in the elderly.

## **The Many Impacts of Loneliness in Late Life**

Diego De Leo

Cacioppo provided an operational definition of loneliness that is particularly useful for clinical research and planning of interventions. He suggested that the core concept of loneliness describes a negative emotional state experienced when there is a difference between the relationships one would like to have and those that one perceives to actually have [Cacioppo & Cacioppo, 2014]. Following this perspective, the unpleasant sensations of loneliness are therefore subjective. Loneliness is not about the amount of time spent with other people or alone: loneliness is more related to the quality of relationships than to their quantity. However, the effects of loneliness are not limited to subjective experiences. It is now clear that loneliness is an important risk factor for many problems of physical health, from fragmented sleep and decreased cardiac output to the onset of dementia. The lack of social connections poses a risk of premature death that is very similar to well-known pre-mortality factors such as smoking and obesity. The link between loneliness and depression has also been underlined, and the association between loneliness and suicide has been suggested since long time. Thwarted belongingness represents today a pivotal concept in the interpersonal theory of suicide. This presentation will discuss data from an Australian study of elderly people who died by suicide, showing that presence of insufficient social support (from family and/or friends) was almost constantly recorded. Data from the De Jong-Gierveld scale on a large sample of older adults from Slovenia will complete the presentation.

## **The Role of Psychogeriatric Associations in Fighting Late Life**

Marco Trabucchi

The role of national psychogeriatric Associations in fighting late life loneliness may be summarized as follows:

1. Study the most relevant dynamics specific for each country responsible for the increasing number of citizens living in a condition of loneliness;
2. Disseminate the information collected through epidemiological studies to increase the awareness of the communities regarding personal and social consequences of loneliness;
3. Establish courses for medical professionals regarding the risks induced by loneliness on the somatic and psychic health of the elderly;
4. Convince public authorities of the need of specific interventions to reduce the number of isolated persons increasing the occasion of encounter, the safety in the streets, the possibility for an easy access to shopping areas;
5. Control the effect of the projects on real condition of the citizens, with the attitude to frequently adopting new models of intervention to reach the best quality of life of the elderly.

## **S3: New Imaging Research in Late-Life Mood and Cognitive Disorders**

### ***Symposium Overview:***

Four investigators will present new research using neuroimaging to characterize of mood and cognitive disorders in older adults.

#### **MRI in geriatric depression: identifying subtypes and predicting treatment outcome**

David Steffens

Late life depression is a heterogeneous disorder that may be related to personality (e.g., neuroticism) or neurobiology (e.g., cerebrovascular disease). Neuroimaging can identify brain structures and circuitry associated with depression subtypes in the elderly, as well as brain networks related to antidepressant treatment outcome. New research in these areas will be presented with a focus on the role of the prefrontal cortex.

#### **Imaging of tau and inflammation in Alzheimer's disease and Lewy body dementia**

John O'Brien

Recent studies suggest inflammation may be an early change that might accelerate degeneration, not just be a response to pathological damage. This talk will present new data on PET imaging of inflammation (PK11195) and tau (AV1451) in Alzheimer's disease and Lewy body dementia, suggesting brain inflammation may indeed be an early change, associated with preservation of cognition and MRI brain structure.

#### **"Multi-Modality Imaging of Neurodegeneration in Late Life Cognitive Decline and Depression**

Gwenn Smith

Molecular imaging methods to visualize the neuropathology of Alzheimer's disease (AD) in vivo provide an unprecedented opportunity to understand neuropsychiatric (NPS) and cognitive symptoms in early stage AD. Human data and animal models show the synergistic effect of Tau on both A $\beta$  and serotonin degeneration. In vivo PET imaging of serotonin, combined with Tau and A $\beta$ , may represent a powerful predictor of cognitive decline and emergence of NPS.

#### **Pathways to late-life depression and related cognitive impairment: evidence from structural and functional imaging**

Ian Hickie

While evidence from structural imaging continues to highlight grey and white matter changes in fronto-temporal structures, and linking pathways, emerging research from MR Spectroscopy suggests the possible roles of ongoing inflammatory processes early in the course of late-life depression and linked cognitive impairment. The relevance of these findings for choice of interventions will be presented.

Steffens D.C., Wang L., Pearlson G.D. Functional connectivity predictors of acute depression treatment outcome, *Int Psychogeriatric. e-pub* Jan 3 2019, p1-5.

Surendranathan A. et al. (2018). Early microglial activation and peripheral inflammation in dementia with Lewy bodies. *Brain*, 141, p3415-3427.

Smith GS, et al. (2017) Molecular imaging of serotonin degeneration in mild cognitive impairment. *Neurobiol Dis*, 105, p33-41.



## S4: Psychosocial Education in Dementia in Europe.

### **Interdem Academy. European network for training of early stage researchers involved in psychosocial research**

Marjolein E. De Vugt; Frans R.J Verhey

INTERDEM Academy is a European training network for early stage dementia researchers. INTERDEM Academy was established in 2014. The aim of INTERDEM Academy is to develop the careers and to build capacity of young researchers working on psychosocial interventions under supervision of INTERDEM seniors. INTERDEM is a pan-European network of researchers focusing on early detection and psycho-social interventions in dementia. INTERDEM Academy want to support the early stage researchers in their pathway to senior (academic) posts in the field.

**Method and results.** To achieve this, INTERDEM Academy organizes expert workshops and masterclasses to develop ideas and methodological expertise. The INTERDEM Academy offers biannual travel fellowships for PhD students and postdoc researchers allowing them to spend 3-6 months in another INTERDEM research center. The goal is the exchange of knowledge and experience between the INTERDEM centres. INTERDEM Academy has grown in recent years to around 200 members from 20+ different countries. INTERDEM Academy and its activities are coordinated by Alzheimer Center Limburg/Maastricht University, the Netherlands. **Discussion.** The INTERDEM academy offers the opportunity to share expertise, create awareness for Academy talent and stimulate collaboration. The Academy links to educational networks such as INDUCT and SiDeCar to improve dementia care knowledge and competency in a stimulating international and collaborative environment.

### **Role of psychosocial approaches in the Plan and guidelines of dementia**

Manuel Franco-Martin

Dementia is a multifactorial condition with a discrepancy between neuropathology and clinical outcomes. Consequently, Better understanding on the relevant biopsychosocial factors can better inform about the best treatment. Indeed, there are studies showing that there are several behavioral and psychosocial choices to support cognitive skills: engaging in educational or other mentally stimulating activities; promoting physical activity; being part of a good social network and being able to use supports; or change and improve the diet. However, the predominance of the biologic trend pushes the psychosocial approaches into the background and sometimes the treatment is only focused on pharmacological intervention. One of the aims of Sidecar project is to achieve Knowledge about the relevance of psychosocial approaches in dementia guidelines in Europe and identify the main recommendations of psychosocial approaches in Europe.

**Methodology and results.** We searched the guidelines of dementia in Europe released in the last 15 years through the metasearch engines specialized in the evidence and clinical guidelines. We'll check the follow databases: <https://www.tripdatabase.com/> ; <http://sumsearch.org/> ;<https://www.accessss.org/>; <https://www.evidence.nhs.uk/>; <https://www.epistemonikos.org/es#> ; <http://www.adimbe.org/evidenciasenmedicina/> . We found the most relevant guidelines published in Europe for treatment of dementia, showing that the relevance of psychosocial advances are more considered in the last guidelines and it's take into account more a more. However, few times is considered as a well-structured recommendation and it's very general.

**Discussion and conclusion.** In spite of the relevance of psychosocial approaches are higher in the more recent guidelines, it's necessary to promote a well-structured use of them and improve the training in psychosocial interventions in Europe in order to be applied in a well-structured way.

### **Training in HE across Europe: evidence from the SiDECar project**

Rabih Chattat

Skills In DEmentia Care - Building psychosocial knowledge and best practice in dementia care (SiDECar) is an Erasmus+ project funded under the KA2 Strategic Partnerships for Higher Education (2018-2021). Partners are: the University of Bologna (Italy, project leader), Maastricht University (Netherlands), the University of Salamanca (Spain) and the Institute for Postgraduate Medical Education (Czech Republic). SiDECar general aim is to promote the psychosocial knowledge in dementia care through the introduction of an international curriculum of studies. Research has shown that psychosocial interventions can be effective in helping people with dementia (PWD), their informal and formal caregivers to cope with disease related problems. However, multiple factors act as barriers for the translation of empirical evidence into higher education (HE) and then into clinical practice. Among them, a lack of general knowledge and the public stigma often result in the prevalence of medical care models of assistance for PWD and their families. Indeed, HE curricula specifically focused on psychosocial care in dementia are few thus not fulfilling the job market needs.

**Method and Results:** We developed a survey aimed to investigate HE curricula specifically focused on psychosocial care in dementia across Europe. Preliminary results showed that 19% of the delivered teachings belong to the first level, 80% to the second level, and 1% to the third one (Bologna Process, 1999). Among them 38% are courses, 23% are modules, and 39% are topics dealt with in courses or modules not directly concerning dementia care themes. As for their content, they have a theoretical focus in the 18% of

cases while they relate to care practice in the 53%, and to mixed issues in the 29%. Finally, the majority of teachings are distributed in central/western institutes (89%).

Discussion: Evidence-based curricula specifically focused on psychosocial care in dementia should be designed and delivered as to develop professional skills and competences for students interested in this field. In this sense, SiDECAR expected outputs are also materials, guidelines, manuals and recommendations along with public campaigns of awareness towards the importance of the psycho-social perspective in improving quality of life of PWD, informal and formal caregivers.



## S5: Novel Approaches to Caregiver Interventions

### Addressing dementia family caregivers emotions that hurt: ambivalent and guilt feelings

Andrés Losada, Maria Márquez-González, Rosa Romero-Moreno, Laura Gallego-Alberto, Isabel Cabrera-Lafuente, Samara Barrera-Caballero, Maria del Sequeiros Pedroso-Chaparro, Ana Pérez-Miguel, Carlos Vara-García

Most of the dementia family caregivers' care for someone loved. In addition, they do that in a context that, influenced by factors such as cultural values, increases the chances of the care being provided almost entirely by a close relative (usually a wife or a daughter) instead of formal care. There is a general consensus regarding the stressful nature of caring for a relative that suffers dementia, with caregivers devoting many daily hours to care duties and supervision for a period of time that lasts years, in which they must cope with issues such as behavioural and psychological symptoms of the dementias (BPSD), other life roles, etc. Leisure time, social interactions, etc. are relegated to a second place. In this interpersonal context, dominated by interactions between the caregiver and the care-recipient, caregivers' experiences mixed feelings that have to do with caring for someone loved but, at the same time, facing strong and lasting negative situations that generate negative feelings or emotions (e.g., coping with BPSD, loneliness, etc.). The experimentation of simultaneous positive and negative emotions (that is, emotional ambivalence) contributes significantly to caregivers experiencing guilt feelings and, also, distress (depression and anxiety). In this talk, we will describe a theoretical framework for understanding caregivers ambivalent and guilt feelings, supported by empirical data obtained by our research group. In addition, we will describe a psychological intervention developed for addressing guilt feelings in caregivers suffering high levels of distress. Preliminary findings that suggest the potential of this intervention for obtaining clinically meaningful changes in caregivers' wellbeing will be also presented.

Losada, A, Márquez-González, M, Vara-García, C, Gallego-Alberto, L, Romero-Moreno, R, and Pillemer, K. (2018). Ambivalence and guilt feelings: Two relevant variables for understanding caregivers' depressive symptomatology. *Clinical Psychology and Psychotherapy*. 25, pp. 59– 64. <https://doi-org.ezaccess.libraries.psu.edu/10.1002/cpp.2116>

### Daily Assessments and Biological Markers of Stressors in Caregiving Interventions

Steve Zarit

Technological advances have made it possible to obtain biological samples of the stress process and to make more intensive measurement of stress effects than with usual retrospective reports. Use of frequent reports of stressors and responses combined with biological markers provide new insights into caregivers' experiences and the impact of interventions. This presentation will examine findings from the Daily Stress and Health of Caregivers Study as well as drawing on other examples from the literature to demonstrate how biomarkers can be used in evaluation of interventions and to suggest promising directions for research.

Klein, L. C., Kim, K., Almeida, D. M., Femia, E. E., Rovine, M. J., and Zarit, S. H. (2016). 'Anticipating an easier day: Effects of adult day services on daily cortisol and stress.' *Gerontologist*, 56, pp. 303-312. doi:10.1083/geront/gne060.

Liu, Y., Granger, D. A., Kim, K., Klein, L. C., Almeida, D., and Zarit, S. H. (2017). Diurnal salivary alpha-amylase dynamics among dementia family caregivers. *Health Psychology*, 36, pp. 160-168. doi: 10.1037/hea0000430.

### Novel Approaches to Caregiver Interventions

Steve Zarit

Intervention research for family caregivers of persons with dementia (PwD) has had promising results, but effects are generally modest and many caregivers are not helped by treatment. The presentations in this symposium consider issues that could lead to more effective design, measurement, and evaluation of interventions.

1. Steven H. Zarit, "Daily assessments and biological markers of stressors in caregiving Interventions"

This paper will discuss technological advances have made it possible to obtain biological samples of the stress process and to make more intensive measurement of stress effects than with usual retrospective reports. Use of frequent reports of stressors and responses combined with biological markers provide new insights into caregivers' experiences and the impact of interventions.

2. Andrés Losada, "Addressing dementia family caregivers emotions that hurt: ambivalent and guilt feelings"

Caregivers experience mixed feelings that have to do with caring for someone loved but, at the same time, facing strong and lasting negative situations that generate negative feelings or emotions. The experience of simultaneous positive and negative emotions (that is, emotional ambivalence) contributes to experiencing guilt feelings and distress (depression and anxiety). We will describe a

framework for understanding caregivers' ambivalence and guilt, and data from an intervention for guilt feelings in caregivers suffering high distress.

3. Manuel Gonçalves-Pereira, "Secondary caregiving deserves attention in research and clinical practice."

Most caregiving research focuses on a single "primary" caregiver, although often multiple family caregivers are involved. Surprisingly, little is known about secondary caregiving in dementia. Using unique dyadic data (primary and secondary caregivers for the same patient), we consider positive and negative experiences of secondary caregivers and implications of secondary caregivers for research and practice.

4. Jan Oyeboode, "Supporting dementia carers through family-focused work"

The most common pattern of family life in dementia in many countries today is of an older couple. However, wider and diverse families also need to be considered in caregiving. This talk will present relationally-focused work, which includes the person with dementia, the primary carer, and other family members as appropriate, and which aims to preserve the integrity of relationships and the sense of self of each person.

Gonçalves-Pereira, M. (2017). 'Toward a Family-Sensitive Practice in Dementia.' In A. Verdelho & M. Gonçalves-Pereira (Eds.), *Neuropsychiatric Symptoms of Cognitive Impairment and Dementia* (pp. 349–368). Springer.

Klein, L. C., Kim, K., Almeida, D. M., Femia, E. E., Rovine, M. J., and Zarit, S. H. (2016). 'Anticipating an easier day: Effects of adult day services on daily cortisol and stress.' *Gerontologist*, 56, pp. 303-312. doi:10.1083/geront/gne060.

Liu, Y., Granger, D. A., Kim, K., Klein, L. C., Almeida, D., and Zarit, S. H. (2017). Diurnal salivary alpha-amylase dynamics among dementia family caregivers. *Health Psychology*, 36, pp. 160-168. doi: 10.1037/hea0000430.

Losada, A, Márquez-González, M, Vara-García, C, Gallego-Alberto, L, Romero-Moreno, R, and Pillemer, K. (2018). Ambivalence and guilt feelings: Two relevant variables for understanding caregivers' depressive symptomatology. *Clinical Psychology and Psychotherapy*. 25, pp. 59– 64. <https://doi-org.ezaccess.libraries.psu.edu/10.1002/cpp.2116>

Oyeboode, J. R. and Parveen, S. (2019) 'Psychosocial interventions for people with dementia: An overview and commentary on recent developments', *Dementia*, 18(1), pp. 8–35. doi: 10.1177/1471301216656096.

### **Secondary caregiving deserves attention in research and clinical practice**

Manuel Gonçalves-Pereira, Steven Zarit, Ana Cardoso, Joaquim Alves da Silva, Ana Papoila, Raimundo Mateos

Many families face great challenges regarding the consequences of dementia, although there may be multiple family caregivers. Frequently, so-called primary caregivers (usually defined as those who are more in contact with the person with dementia) are alone in their caregiving tasks. However, in many other circumstances, so-called secondary caregivers may be supporting both the person with dementia and their primary caregiver. Surprisingly, little is known about secondary caregiving in dementia. This regards both the secondary caregiver's needs and the way they may contribute to positive (or negative) clinical outcomes, either related to the person with dementia or the primary caregiver.

Most studies compare primary and secondary caregivers as groups, and only a few consider primary and secondary caregivers of the same person with dementia. We conducted a non-randomized cross-sectional study of two related samples of 61 primary and 61 secondary carers of persons with dementia (Gonçalves-Pereira et al, 2019). These primary and secondary caregivers differed in subjective burden but they did not differ in other caregiving experiences, such as psychological distress needs and levels of clinically significant anxiety and depression. Our results suggest that secondary caregivers should not be forgotten in needs assessments and family interventions. Thinking systemically and involving the family as a whole may contribute to address the needs of persons with dementia and their family members altogether.

Gonçalves-Pereira, M. (2017). 'Toward a Family-Sensitive Practice in Dementia.' In A. Verdelho & M. Gonçalves-Pereira (Eds.), *Neuropsychiatric Symptoms of Cognitive Impairment and Dementia* (pp. 349–368). Springer

### **Supporting dementia carers through family-focused work**

Jan Oyeboode

The way in which relationships are negotiated, roles are defined and challenges are managed are likely to influence how family members support a relative with dementia. The most common pattern of family life in dementia in many countries today is of an older couple – therefore dyadic family work is needed. However, wider and diverse families also need to be catered for. Relationally-focused work, which includes the person with dementia, the primary carer and other family members as appropriate, aims to preserve the integrity of relationships and the sense of self of each person. This talk will present frameworks for family work, summarise relevant research and recommend ways to enhance practise in our support for carers of those with dementia.

Oyeboode, J. R. and Parveen, S. (2019) 'Psychosocial interventions for people with dementia: An overview and commentary on recent developments', *Dementia*, 18(1), pp. 8–35. doi: 10.1177/1471301216656096

## S6: People with Young Onset Dementia: a particular group!

### **AWARENESS OF DISEASE IN ALZHEIMER'S DISEASE: DIFFERENCES BETWEEN YOUNG-ONSET AND LATE-ONSET DEMENTIA**

Marcia Dourado, Jose Baptista

Awareness of disease is the ability to acknowledge changes caused by deficits related to the disease process. The vast majority of studies on awareness of disease are focused on individuals with late-onset dementia (LOD), with relatively few focusing specifically on individuals with young-onset dementia (YOD). We aimed to investigate whether there are differences in awareness of disease between young-onset dementia (YOD) and late-onset dementia (LOD) and examined how awareness interacts with cognitive and clinical variables. Using a cross-sectional design, 49 people with YOD and 83 with LOD and their caregivers were included. We assessed awareness of disease, cognition, functionality, stage of dementia, mood, neuropsychiatric symptoms, and caregivers' quality of life (QoL) and burden. The results showed that people with YOD were more aware of the disease than people with LOD ( $P < 0.005$ ). Multivariate linear regression revealed that higher impairment in functional level was associated with unawareness in both groups (YOD= $P < 0.001$ ; LOD= $P < 0.001$ ). In the YOD group, preserved awareness was related to worse self-reported QoL ( $P < 0.05$ ), whereas, in LOD, deficits in awareness were related to caregivers' worst perceptions about people with dementia QoL ( $P < 0.001$ ). The findings highlight the distinct nature of awareness between YOD and LOD. The YOD group had higher levels of disease awareness compared with the LOD group, even though the first group had a greater impairment in functionality.

### **COPING WITH TRANSITIONS IN LIFE: A FOUR-YEAR LONGITUDINAL NARRATIVE STUDY OF SINGLE YOUNGER PEOPLE WITH DEMENTIA**

Aud Johannessen, Knut Engedal, Per Kristian Haugen, Marcia Dourado

Background: People with younger onset dementia (YOD < 65 years) experience a great transformation of existential life. Living alone, they lack the support of a partner, and have a higher risk of moving into a residential care facility.

Aim: To explore how people living alone with YOD experience and cope with transitions during the progression of dementia.

Method: A longitudinal qualitative approach was used. From 2014 to 2018, we interviewed 10 persons with YOD every 6 months for up to four years.

Findings: Two significant main transitions and themes were registered under the perspective; experiencing and coping with (1) Receiving the diagnosis of dementia. (2) Moving to a residential care facility, which covers two subthemes: a. moving to a supported living accommodation and b. moving to a nursing home. To get the diagnosis was initially experienced as a dramatic disaster, while moving to residential care were mainly experienced as positive. With efficient cognitive and emotion-focused coping strategies, the participants adapted and experienced a mostly good life for a long time.

Conclusion: People with dementia can describe their lived experiences for a long time after receiving the diagnosis. They adapt and preserve a feeling of a rather good life by the efficient use of various coping strategies. High-quality public support is of significant importance to assist them in sustaining quality of life and vitality.

### **FOCUSSING IN PEOPLE WITH BEHAVIOURAL VARIANT OF FRONTOTEMPORAL DEMENTIA: AN INNOVATIVE APPROACH.**

Raymond Koopmans, Elly Prins, Alwies Hendriks, Christian Bakker, Debby Gerritsen

Frontotemporal dementia (FTD) is a neurodegenerative brain disease with the behavioural variant FTD (bvFTD) as the most common variant. Besides apathy, disinhibition is one of the main neuropsychiatric symptoms in bvFTD with a prevalence of 76%. Disinhibition is linked to the degeneration of the orbitofrontal and dorsolateral prefrontal lobe. In patients with bvFTD the ability to inhibit is impaired. Therefore, the process of suppressing internal stimuli like activated information, selecting external stimuli, focusing on the relevant information and inhibiting irrelevant information is reduced. Consequently, patients with the bvFTD cannot decide which incentives are important and which incentives are not. This can result in for instance socially inappropriate behaviour, repetitive or stereotypic behaviour and loss of basic emotions.

To date there is hardly any psychosocial intervention available that is effective in caring for people with bvFTD with disinhibited behaviour. However, a psychologist and psychomotor therapist of 'Joachim en Anna', centre for specialized geriatric care, developed a psychosocial intervention named Focussing. This approach consists of 5 distinct ways to guide the disinhibited behaviour: (1) structuring the day and create a safe environment; (2) focussing on a single activity; (3) focussing on a single sensory organ; (4) suppress external stimuli; and (5) focussing on team agreements.

In this oral presentation, the principles of Focussing will be presented using video of a resident with bvFTD with extreme disinhibited and repetitive behaviours. Also, the 5 ways of this intervention and the effect of the resident will be shown.

## **SUICIDAL THOUGHTS AND BEHAVIOR OF PATIENTS WITH YOUNG AND LATE ONSET DEMENTIA**

Janine Diehl-Schmid, Julia Hartmann, Carola Roßmeier

**Background:** Dementia does not appear to be a risk factor for suicide completion. Results of studies that investigated the risk of suicide ideations and attempts in dementia are inconclusive. Patient interviews about suicidal thoughts and behavior bear the risk that symptoms are not mentioned and therefore under-rated.

**Methods:**

In our prospective study that included patients with advanced dementia and their family caregivers, we retrospectively assessed patients' suicidal ideation, thoughts and behavior. We modified the Columbia Suicide Severity Rating Scale (C-SSRS) into a caregiver interview. Family caregivers were asked about patients' suicidal ideation, thoughts and behavior before onset of first dementia symptoms, after onset and in the month before the interview.

The modified C-SSRS was obtained from 121 family caregivers of 61 patients with advanced young onset dementia (YOD) and 60 patients with advanced late onset dementia (LOD).

**Results:**

Suicidal thoughts were reported in 9% and suicidal behavior in one case before onset of any dementia symptoms. After dementia onset there were no significant differences between YOD and LOD. 20% of the YOD-patients and 22% of the patients with LOD had (once or repeatedly) mentioned suicidal thoughts after symptom onset. In the vast majority of cases suicidal thoughts were unspecific "wishes to be dead" or very vague plans for a suicide attempt. One patient had made actual plans.

**Conclusion:** Passive suicidal ideation occurs in about one fifth of patients after the onset of dementia, irrespective of the age at diagnosis. Suicidal behavior is very rare.

## S7: Junior Research Awards

First Place Winner:

***“Clinical impact of antipsychotic and benzodiazepine reduction: Findings from a multicomponent psychotropic reduction program within long-term aged care”***

Daniel Hoyle

University of Tasmania, School of Medicine

Background: Antipsychotics and benzodiazepines are widely used in Long Term Care (LTC) facilities, despite modest efficacy and adverse effects. Interventions have, with various degrees of success, reduced these medications. Whilst these studies primarily report on medication use, reporting of resident-related outcomes, including neuropsychiatric symptoms, quality of life (QoL) and social engagement, is scarce. Barriers to dose reduction are, in part, related to perceived deterioration in these outcomes. To address these concerns, we evaluated the clinical impact of dose reduction within a successful multicomponent program.

Methods: The ‘Reducing Use of Sedatives’ (RedUse) program involved 150 Australian LTC facilities and comprised two quality improvement cycles incorporating auditing and benchmarking of prescribing, education, and multidisciplinary sedative reviews. Residents (n=206) taking antipsychotics and/or benzodiazepines regularly, without a severe psychiatric illness, were recruited from 28 participating facilities. Neuropsychiatric symptoms (Neuropsychiatric Inventory, Cohen-Mansfield Agitation Inventory (CMAI)), social withdrawal (Multidimensional Observational Scale for Elderly Subjects-withdrawal subscale) and QoL (Assessment of Quality of Life-4D) were measured at baseline and four months using psychometric testing of nursing staff. Associations between changes in these outcomes and antipsychotic and benzodiazepine doses were investigated using regression models.

Results: Follow-up data were available for 179 residents. Thirty of 83 residents (36%) taking an antipsychotic and 42 of 118 residents (36%) taking a benzodiazepine at baseline had reductions in their dose at four months, predominantly cessations. Psychometric measures were not worsened by dose reductions. Instead, dose reduction was associated with small, albeit non-significant, improvements in behavior, particularly less physically non-aggressive behavior with both drug groups (-0.36 points per 10% reduction in antipsychotic dose, -0.17 per 10% reduction in benzodiazepine dose) and verbally agitated behavior with benzodiazepine reduction (-0.16 per 10% dose reduction), as measured with the CMAI. Furthermore, antipsychotic reduction was associated with non-significant improvements in QoL and social withdrawal.

Discussion: Antipsychotic and benzodiazepine dose reduction was not associated with deterioration in neuropsychiatric symptoms, QoL or social withdrawal. In fact, trends towards improved agitation with antipsychotic and benzodiazepine dose reduction, and improved QoL and social withdrawal with antipsychotic dose reduction, were identified as potential benefits. These outcomes require confirmation in larger prospective controlled studies.

Second Place Winner:

***“End-of life Care in Schizophrenia: A Systematic Review”***

Joshua M. Baruth

Mayo Clinic, Department of Psychiatry and Psychology

Schizophrenia is a severe and persistent mental illness with profound effects on patients, their families, and our communities. It is associated with immense suffering and individuals with schizophrenia have poorer health outcomes with a life expectancy of 10-20 years earlier than the general population. Furthermore, the economic costs associated with schizophrenia are substantial making up approximately 2.5% of total healthcare expenditures worldwide. Despite the psychosocioeconomic impacts, individuals with schizophrenia are subject to several inequities of care, particularly at the end-of-life. We performed a systematic review to examine end-of-life care in schizophrenia, in order to identify factors that can enhance care for this vulnerable population at the end-of-life. A comprehensive search was conducted using the databases Ovid MEDLINE(R), Ovid EMBASE, Ovid PsycINFO, Ovid Cochrane Central Register of Controlled Trials, Ovid Cochrane Database of Systematic Reviews, and Scopus from 2008 to 2018. Keywords included schizophrenia, palliative, end-of-life, and hospice. Two authors independently reviewed titles and abstracts, and disagreements were resolved by consensus. The search identified 212 articles, of which 33 met criteria, including 13 case reports, 12 retrospective reviews, 5 reviews, and 3 prospective studies. Our results highlight a pattern of suboptimal intervention, increased mortality, and greater use of health services in individuals with schizophrenia and comorbid terminal conditions like cancer. There are also reports indicating reduced access to specialty care, palliative care, and hospice care compared to controls. Barriers to palliative care, including stigma, lack of knowledge of their disease, impairments in communication, and late diagnosis of terminal conditions are discussed. An increased awareness of the potential healthcare disparity in this population, creative approaches in multidisciplinary care, and provision



of adequate palliative services and resources can enhance quality of life and end-of-life care in schizophrenia.

Third Place Winner:

***“Attachment anxiety, depression, and perceived social support: a moderated mediation model of suicide ideation among the elderly”***

Awirut Oon-arom

Chiang Mai University, Department of Psychiatry

**Objectives:** Issues concerning the association between attachment anxiety, depression and suicidal ideation among the elderly have rarely been explored. The present study investigated the relationship among attachment anxiety, depression and perceived support concerning suicidal ideation among the elderly.

**Methods:** The authors recruited 190 elderly patients from 4 tertiary care setting in Thailand who provided data on their suicidal ideation and suicidal attempt using Module C of the Mini-International Neuropsychiatric Interview. Their attachment anxiety was assessed using the Experience of Close Relationship questionnaire (ECR-R-18), while their level of depression was investigated using the Geriatric Depression Scale. In addition, their perception of being supported was ascertained using the Multidimensional Scale of Perceived Social Support (MSPSS). We performed two mediation analyses and moderation analyses separately using the product of coefficients approach. First, we created a mediation model to examine the role of attachment anxiety and depression on suicidal ideation. Second, a moderated mediation model was created to explore the relationship of perceived social support as a moderator of depression.

**Results:** We found that depression significantly mediated the association between attachment anxiety and suicidal ideation. The association between depression and suicidal ideation was moderated by the level of perceived social support.

**Conclusion:** Findings of this study may broaden our understanding of how suicidal ideation develops among the elderly, and further stimulate future research exploring the interaction of positive and negative factors of suicidality among the elderly.

Implications of the findings were also discussed.

## S8: ECT in Geriatric Psychiatry: A Global Perspective

### **Cost-effectiveness of a maintenance electroconvulsive therapy (m-ECT) program in elder patients**

Roberto Rodriguez-Jimenez

Different studies have shown maintenance electroconvulsive therapy (m-ECT) to be a safe and effective therapy for the treatment of affective and some schizophrenia-spectrum disorders. Despite its clinical efficacy, the use of m-ECT is not as extended as might be expected. One of the factors that may contribute to the underuse of m-ECT is the need for specific resources for its administration (hospital setting, operating room, anaesthesiologists, psychiatrists, nurses...). This means that cost-effectiveness studies are needed in this area; however, there is very little research on the cost-effectiveness of m-ECT, especially in elder patients.

We have previously published a series of 8 mixed ages cases included in our m-ECT program examining cost-effectiveness. We found that associated direct costs per day of admission were reduced to 50.6% (Rodriguez-Jimenez et al., 2015). Now, we present the preliminary data of elder patients (60 ages and old) included in our m-ECT program. The sample was composed of 16 patients, mean age 76.7 years (SD: 9.5), 11 females. The diagnoses were depression (9), bipolar (4), schizophrenia (2) and schizoaffective (1) disorders. All patients have better Clinical Global Impression (CGI) after inclusion in the m-ECT program than before. We compared the number of days of hospitalization of the 18 months before inclusion in m-ECT program (56.0 days, SD: 27.0), with the number of days of hospitalization of the 18 months after inclusion in m-ECT program (6.4 days, SD: 13.7;  $p < 0.001$ ). The direct cost of the hospitalization days before m-ECT was 218.552 euros. The direct cost of the hospitalization days after m-ECT plus direct cost of ECT procedure was 113.965 euros. This showed a reduction in direct costs of 52.1%. In conclusion, our m-ECT program applied in elder patients is cost-effective

### **ECT in the USA**

Charlie Kellner

This presentation will describe the current state of ECT practice in the United States and place it in perspective with ECT practice in other countries around the world. Information about how much ECT is performed, patient populations, and technical practices will be discussed. The recent FDA Final Order on ECT device classification will be explained. Challenges and opportunities for improving and expanding access for this vital treatment for our most seriously ill patients will be reviewed. The issue of combating stigma and providing education about the realities of contemporary ECT practice will be highlighted.

### **Electroconvulsive Therapy for Severe Agitation and Aggression in Alzheimer's Dementia**

Brent Forester

Alzheimer's Dementia is the most prevalent neurodegenerative disease of aging, affecting 5.8 million individuals in the US, and predicted to increase to 14 million by 2050. Agitation, depression, and apathy are common (90%), contribute to caregiver burden and increase morbidity and mortality. Limitations of therapies for severe agitation in AD include lack of FDA-approved therapeutic options, delayed onset of action of behavioral therapies and modest efficacy and tolerability concerns (heightened mortality and stroke risk) of antipsychotic medications. New treatments for severe agitation in AD refractory to standard interventions are timely and warranted.

Prior studies have demonstrated safety and efficacy of ECT for treatment of severe psychiatric disorders in older adults, including depression, mania, and psychosis. A retrospective systematic chart review of 16 inpatients (15 female) with a diagnosis of dementia were treated with ECT for agitation and aggression with evidence for significant improvement in symptoms of agitation as measured by the Pittsburgh Agitation Scale ( $p < 0.001$ ) (1). A follow-up, prospective case series of 23 inpatients with dementia treated with ECT for severe agitation, demonstrated a significant reduction in agitation from baseline to discharge on the Cohen Mansfield Agitation Inventory and the Neuropsychiatric Inventory ( $p < 0.0001$ , for both) (2). In a case series, 9 of 11 subjects with dementia achieved remission of agitation after ECT. Six of these subjects remained agitation-free with continued ECT treatment for the following year.

This presentation summarizes current evidence to support the safety and efficacy of ECT for severe agitation and aggression in AD (1, 2, 3) and then describe a NIA-funded, multi-center, randomized controlled trial of ECT for severe agitation and aggression in probable Alzheimer's type dementia. This ECT-AD study aims to compare the efficacy and safety of up to 9 ECT+UC (UC, usual care defined as standard pharmacological and behavioral interventions) versus Simulated-ECT+ UC in reducing severe agitation in 200 participants with moderate to severe AD. Successful management of neuropsychiatric symptoms in AD reduces long-term care placement, decreases the risk of mortality, and enhances patient and caregiver quality-of-life. Such an approach has the potential to offer enormous relief to the substantial socioeconomic burden of AD-related behavioral disturbances.

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3. Glass OM, Forester BP, Hermida AP. Electroconvulsive therapy (ECT) for treating agitation in dementia (major neurocognitive disorder) - a promising option. *Int Psychogeriatric*. 2017 May; 29(5):717-726. PMID: 28095946.

### **Lessons learned from the CORE studies 1998- 2018**

#### Georgios Petrides

The Consortium of Researchers for ECT (CORE) is group of researchers in several academic centers in the US who performed 3 major multicenter studies on Electroconvulsive Therapy (ECT). The studies were funded by the National Institute of Mental Health (NIMH) in the USA and were performed between 1998 and 2017. These studies collectively have studied the biggest cohort of ECT patients in the modern era of ECT. Dr. Petrides will review the design, outcomes and individual conclusions derived from these studies and formulate and overarching conclusions and lessons drawn from this 2 decades-long experience.

More specifically, the first study by the CORE group (CORE I) studied the efficacy of Continuation ECT (C-ECT) relative to Continuation Pharmacotherapy (C-PHARM) after a successful course of ECT for Major Depressive Disorder (MDD). It showed that C-ECT alone is an effective approach to prevent relapse in these patients. The second study, CORE II, compared the relative efficacy and safety of the 3 most commonly used electrode placements, i.e. Bitemporal, Bifrontal and Right Unilateral (RUL), and established that all placements are effective options with similar cognitive side effects. Finally the CORE III study compared the relative efficacy of the combination of RUL ECT and pharmacotherapy to pharmacotherapy alone and showed that the combination is superior in preventing relapse in geriatric patients after a successful course of acute ECT for MDD.

### **Long term cognitive side effects and predictive pre-treatment patient characteristics after ECT in patients with late-life depression**

#### Esmee Verwijk

There is ongoing concern about the possible negative impact of ECT on neurocognitive functioning in older patients. We aim to characterize the long-term cognitive effects of ECT in patients with late-life depression, using an extensive neuropsychological battery and also evaluate the literature on predictive pre-treatment patient characteristics for cognitive side effects after ECT for depression.

Results will be presented and the conclusion is that patients with late-life depression do not show deleterious cognitive effects 6 months following an ECT index course, although there are considerable differences at an individual level. There is need for additional studies primarily focusing on predictive pre-treatment patient characteristics for cognitive side effects after ECT for depression. Suggestions for future research are outlined.

## S9: Collaborating with Primary Care

### Biopsychological approaches to depression at Primary Care

Jessica Uno

"There is no health without mental health". This commonly cited phrase is particularly true in the elderly. Depression can be challenging to diagnose and treat in older adults patients, and has a significant negative impact on the overall quality of physical and emotional wellbeing. A comprehensive biopsychosocial approach to assessment and management of depression is necessary to ensure maximal quality of life. Assessment of mood must take into account current life stressors, such as chronic and acute health problems, social isolation, age related cognitive decline, prior history of depressions, recent losses (family, friends), drug and alcohol use, and financial challenges. Treatment interventions should address issues identified in the biopsychosocial assessment, with an emphasis on psychosocial treatment (such as enjoyable exercise and increased social interactions). Pharmacotherapy should be used cautiously and conservatively, as side effects and drug-drug interactions are a common problem in this population. Keeping the Golden Years truly golden requires attention to the overall mood state of older adult patient, not a sole focus on physical functioning.

Baron D, Uno J. Biopsychosocial Approaches to Depression in the Older Adults. In: de Mendonça Lima CA, Ivbijaro G. Primary Care Mental Health in Older People: a global perspective. Springer, 2019.

### Management of psychosis in older persons at Primary Care

Carlos Augusto de Mendonça Lima

There is an increase of the prevalence of psychotic symptoms in older adults. The presence at this period of life of the highest comorbidity rate, the changes of the central nervous system with ageing and the particular high frequency of life stressors during this period of life may all explain this. Psychotic symptoms are present in an important number of medical and psychiatric conditions and they make part of psychotic disorders in late life too. The same classification of disorders with psychotic symptoms in adults may be used for older adults. Primary psychotic symptoms exist in persistent psychotic disorders (schizophrenia, delusional disorder, and schizoaffective disorder), acute psychotic disorder and personality disorders (paranoid, schizoid and schizotypal personality disorders). Secondary psychotic symptoms include major and minor neurocognitive disorders, delirium, organic mental disorders, and disorders due to psychoactive substance use, bipolar disorders and depressive episode. Somatic disorders and comorbidities, and iatrogenic causes included at this cluster. Assessment and management of psychosis in older adults at Primary Care require an organization of the mental health care system. The management of psychosis in older adults implies the proper use of multidisciplinary therapeutic interventions: pharmacotherapy and psychological, social and occupational therapy. All forms of stigma and discrimination against older adults with psychosis and their carers should be eliminated.

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de Mendonça Lima CA, Lopes E, Milicevic Kalasic A. Psychosis in older adults. In: de Mendonça Lima CA, Ivbijaro G. Primary Care Mental Health in Older People: a global perspective. Springer, 2019

### Neurocognitive assessment at Primary Care

Vincent Camus

Neurocognitive disorders, a frequent in old age are chronic conditions that alter activity of daily living and may be complicated by serious psychological or behavioral symptoms. They also may alter the quality of life of family caregivers. In that context, their early detection is a major issue in primary care. Regarding the use of screening tools in primary care, the present chapter review different points: which screening tools should GP use, when, how? Answering these questions should help improving an appropriate use of screening tools, the early screening being the first step of the healthcare paths.

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### Reducing emergency hospital admissions for people with dementia - a case study from London Borough of Waltham Forest

Gabriel Ivbijaro

There has been emphasis on the need for collaborative care because many older adults have multiple medical and social problems. Getting the best outcomes requires systems that can support the multiple needs of older adults. The Waltham Forest model from the UK is being presented to demonstrate that it is possible for health and social care to work collaboratively for the benefit of the older adult population. The Waltham Forest model is based on collaborative care between general practitioners and their team who are responsible for providing primary care, community mental health nurses for older people, the Memory Clinic comprising psychologists

and psychiatrists that care for older adults, Adult Social Care provided by local government and the voluntary sector (Non-Government Organisations) including Carers First and Alzheimer's Society who provide education and support for older adults with dementia their families and carers. In the Waltham Forest's new model of care, older adults at risk of dehydration are identified early using a joint health and social care assessment. Appropriate plans are put in place to support adequate hydration. Such tasks can be performed by any appropriately trained member of the team who is tasked to ensure that this happens. Older adults are at increased risk of falls and many falls are preventable. In the Waltham Forest example falls risk assessments that have been traditionally carried out by health staff have been shifted to the Alzheimer's Society (a voluntary sector Non-Government Organisation) so that health staff can be deployed to deal with more complex medical tasks. This UK example demonstrates how a local Clinical Commissioning Group (those who commission and pay for health services) has worked with its key health and social care partners to address high levels of emergency care and treatment in hospital for older adults with the diagnosis of dementia.

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## S10: Interaction of Biological and Psychosocial Factors in Dementia

Clive Ballard, Louise Allan, Anne Corbett, Byron Creese, Helen Brooker, Chris Fox, Saber Sami, Lee Shepstone, Mizanur Khondoker, Kathryn Richardson

There have been groundbreaking advances in epidemiology in recent years making a significant contribution to understanding dementia. Utilising new analytical techniques in machine learning and blending with models from neuroscience and social sciences will aid deciphering of variability in origins, mechanisms and clinical expression of dementia. To illustrate this we utilise the PROTECT cohort (25000 people aged 50 and over) focusing on 3 key risk factors for the development of progressive cognitive decline and dementia: depression, mild behavioural impairment and psychosis. We will examine the impact on progressive cognitive decline, the potential protective effects of cognitive training and the predictive value of polygenic risk scores for Alzheimer's disease, depression and schizophrenia in identifying individuals at risk of progressive cognitive decline.

### **Interaction between psychosocial and biological factors: insight from the stress model**

Rabih Chattat, Giovanni Ottoboni

Both the onset and the progression of dementia are influenced by different, interactive factors (genetic, epigenetics, biological, psychological, social and environmental). However, their influence manifest itself along the entire life span, even far before the disease onset.

The way the factors interact offers useful insights to explain the individual variability in the onset and in the trajectories of disease.

A literature synthesis regarding the role of stress and trauma as a risk factors across the life span and its impact on brain. The potentiality of psychological and social intervention in moderating stress impact and reducing biological consequences on the brain will be discussed.

The research has already outlined the importance of taking into account early life events and trauma as risk factors for the onset of dementia. Stress and trauma have direct influence upon the plasticity of the brain by modulating both synapsis connectedness and neurogenesis in different brain area, and indirectly, by modulating the development and the progression of other, often related diseases (e.g., depression, inflammation and cardiovascular disease).

On the other hand, the disease onset can be considered as a trauma itself: so that the coping strategies the person with dementia can deploy modulate the course of disease, its progression, the impact of the disease itself and related distress in turn.

Further, complementary, evidence shows that interventions targeted to support stress management and to promote social health- through social support and social inclusion- are capable to modulate the biological impact by acting on physiological as well psychological consequences.

In the light of these reports, the role of stress offer a functional framework from where to develop models for research and intervention capable to reconcile the complex etiological aspects featuring dementia, by adopting broaden, multifactorial, approaches.

### **INTERACTION OF BIOLOGICAL AND PSYCHOSOCIAL FACTORS IN DEMENTIA**

Rabih Chattat, Myrra Vernooij-Dassen

Dementia is a multifactorial condition with a discrepancy between neuropathology and clinical outcomes. This urges to better understand the balance between biological and psychosocial factors related to the onset and course of dementia. Research into the working mechanisms can benefit from theoretical guidance by using frameworks such as the stress theory and the cognitive reserve hypothesis. This knowledge will contribute to the development of interventions to prevent or delay dementia by using strategies focusing on underused strategies including social engagement. Better understanding on the relevant biopsychosocial factors and (reciprocal) relations can better inform more personalised diagnostic and post-diagnostic approach. This symposium will highlight the relevance of integrated dementia research, models to support this research and results of the pioneering studies in this field.

### **INTERACTION OF BIOLOGICAL AND PSYCHOSOCIAL FACTORS IN DEMENTIA**

Martin Orrell

Dementia is a multifactorial condition. Better understanding on the relevant biopsychosocial factors and (reciprocal) relations can better inform more personalised diagnostic and post-diagnostic approach. There is a need for a pragmatic model which takes into account the biological, psychological and social processes. The biopsychosocial model (Spector and Orrell) disaggregates psychosocial and biological processes, with the aim of understanding the inter-relationship between the two. It suggests that in both domains there are fixed factors (aspects which relate to history or risk factors and therefore not amenable to change), and tractable factors (aspects which may be amenable to change). Tractable factors could be risk or protective factors, and would include factors which can be influenced through biological (e.g. medical) and psychosocial interventions. In this way the model aims to encourage people to think of dementia

as something which is malleable and where change, adaptation and improvement is possible. This implies that certain aspects of dementia are beyond the control of the individual and their environment, whereas others can be influenced, and potentially improved. In the model the trajectory of dementia is presented as a process, beginning with aging, early organic change and MCI (mild cognitive impairment), and moving towards diagnosis, dependency, institutionalization, end of life care, and death. Both the fixed and the tractable factors will influence the point at which the symptoms of dementia begin, the speed and nature of the deterioration, and the appropriateness and effectiveness of interventions. The model also distinguishes between the actual, and, the potential level of function with optimal interventions and support. The gap between the two indicates the “excess disability” and highlights the potential for improved wellbeing.

**Social factors in cognitive decline and dementia; an integrated study of biomedical and social data**

Myrra Vernooij-Dassen, Rene Melis, Marieke Perry, Isabelle Van Dervelpen, Arfan Ikram, Meike Vernooij

Dementia is a multifactorial condition with a discrepancy between neuropathology and clinical characteristics. Integration of dementia research silos might shed more light on this complex condition. Better understanding of this complex condition may require integration of dementia research silos. Research might therefore benefit from connecting biological, social and cognitive theories into a holistic disease developmental model. The concept of social health might help to refine this model. We hypothesize that social health impacts brain and cognitive reserve. Social health reflects competencies to participate in social life and the influence of social interactions on the dynamic balance between capacities and limitations. The overall aim of our recently started study is to identify the relation of social health with cognitive functioning and the underlying neural substrate in the development of cognitive impairment in humans and in mice. Neural substrate measurements in humans include structural brain changes detected by magnetic resonance imaging (MRI) in 4000 persons (mean age 59 years) in a population-based cohort study. In mice models a wide variety of cognitive tests will be used. Tests include social participation and social avoidance. An integrated theoretical model, results of pioneering integrated dementia research and the development of social health indicators will be presented.

## S11: Loneliness in older adults and the role of social prescribing.

### **Symposium Overview**

This symposium will use epidemiological research data, case studies, and clinical data to explore the phenomenon of loneliness in older adults and what can be done to address its impact on mental health in clinical and high risk populations. The symposium will begin with a presentation on epidemiological data and this will be followed by presentations on loneliness in clinical and high risk populations. The final presentation will discuss social prescribing in the context of loneliness and implications for policy making.

### **Loneliness: The population context**

Brian Lawlor & Iracema Leroi

Epidemiological data on loneliness from the Irish Longitudinal Study on Ageing (TILDA) and the English Longitudinal Study of Ageing (ELSA) will be used to describe what is known about the prevalence of loneliness, its interaction with sensory impairment, and its impact on well-being, quality of life, mood, and cognition. Additional epidemiological data from Dublin will describe the interaction of loneliness and social networks and their impact on mood and suicidality.

Epidemiological data on loneliness from the Irish Longitudinal Study on Ageing (TILDA) and the English Longitudinal Study of Ageing (ELSA) will be used to describe what is known about the prevalence of loneliness, its interaction with sensory impairment, and its impact on well-being, quality of life, mood, and cognition. Additional epidemiological data from Dublin will describe the interaction of loneliness and social networks and their impact on mood and suicidality.

### **Loneliness: Clinical populations**

Jeanette Golden

Case studies and case series will be used to describe loneliness and its impact on mental health in clinical populations of older adults living in the community and those who are referred for psychiatric assessment.

Case studies and case series will be used to describe loneliness and its impact on mental health in clinical populations of older adults living in the community and those who are referred for psychiatric assessment. This presentation will examine the differential impacts of social and emotional loneliness on mental health and will be illustrated with case examples including the management of social loneliness with social prescribing (For example, emotional loneliness is often related to complicated grief, which requires psychotherapeutic management strategies).

### **Loneliness: High Risk populations - Memory clinic and residential care populations**

Iracema Leroi & Greg Swanwick

Data will be presented from memory clinic attendees and their care partners. Case studies will be used to describe loneliness and its impact on mental health in nursing home residents.

This presentation will focus on clinical populations at high risk of loneliness including people in nursing homes and people with cognitive and sensory impairment. Data will be presented from memory clinic attendees and their care partners including those with co-morbid cognitive impairment and sensory impairment. Case studies will be used to describe loneliness and its impact on mental health in nursing home residents and will explore loneliness as a contributory factor in behavioural and psychological symptoms of dementia.

### **Loneliness: The role of Social Prescribing**

Rachel Wallace, Iracema Leroi, Greg Swanwick, & Jeanette Golden

The final presentation in this symposium will describe a number of social prescribing interventions for loneliness before addressing the loneliness policy agendas and loneliness strategies to summarise what works and what needs to be further researched.

The final presentation in this symposium will describe a number of social prescribing interventions for loneliness before addressing the loneliness policy agendas and loneliness strategies to summarise what works and what needs to be further researched.



## **S12: Dementia with Lewy bodies: what are the characteristics of the prodromal stage in a nationwide longitudinal cohort?**

Zuzana Walker, John O'Brien, Frederic Blanc, Olivier Bousiges

**Introduction:** To better characterize symptoms, neuropsychology, biomarkers, and brain MRI of prodromal dementia with Lewy bodies (Pro-DLB) patients with cognitive complaint.

**Method:** Nationwide French prospective cohort of patients with cognitive complaint with a minimum follow-up of 4 years. Multicenter study including memory resource and research centers (CM2R) from France. Participants were recruited in memory clinics and screened for either isolated subjective cognitive impairment (SCI) or mild neurocognitive impairment (MCI). Eight hundred ninety-two patients were included in the Lewy Memento cohort. Probable Pro-DLB diagnosis was done using the two-criterion cut-off score among the four core clinical features. This Pro-DLB group was compared to the two other groups: the one without any core symptoms (NS group), and the one with one core symptom (1S group). A whole comprehensive cognitive battery, brain 3D volumetric MRI, CSF, FDG PET and amyloid PET were done.

**Results:** The pro-DLB group was of 148 patients (16.6%). The neuropsychological profile of pro-DLB group showed regarding cognition, more multidomain (59.8%) MCI with longer speed processing, semantic and neurovisual impairment, and regarding behavior, more patients with depression, anxiety and apathy. Pro-DLB patients have also more autonomic symptoms particularly lower libido, more constipation, rhinorrhea, sicca syndrome and photophobia. Pro-DLB group had isolated lower P-Tau and no difference for amyloid PET and FDG PET. Brain MRI analysis showed widening of sulci including fronto-insular, occipital and olfactory sulci (FDR corrected). Evolution to dementia was not different between the three groups after 4 years of follow-up.

**Conclusion:** Patients with prodromal DLB represents 16.6% of SCI and MCI patients which is consistent with the proportion observed at the stage of dementia. Clinical characteristics associate in addition to the key symptoms, cognitive, behavioral and autonomic symptoms. Biomarkers confirm the non-Alzheimer profile (CSF and PET). Occipital, fronto-insular and olfactory bulb involvement on brain MRI is coherent with symptoms and known neuropathology. Next step is to analyze the outcome of all these characteristics.

The challenge of an accurate diagnosis of Dementia with Lewy Bodies

1. 2017 DLB criteria (Zuzana Walker, UK)
2. Prodromal DLB (John O'Brien, UK)
3. Imaging biomarkers in prodromal DLB (Frederic Blanc, France)
4. CSF biomarkers in DLB (Olivier Bousiges, France)

Dementia with Lewy bodies (DLB) is an important type of neurodegenerative dementia. Compared to Alzheimer's disease (AD) clinical diagnosis of DLB can be difficult with up to 50% of cases being misdiagnosed, mainly as AD but also as vascular dementia, Frontotemporal degeneration or corticobasal syndrome. Accurate differentiation from other types of dementia as well as early detection are essential to allow appropriate management and treatment. Prodromal AD is a well-established concept, but little is known about how to identify those who will develop DLB at the prodromal or pre-dementia stage.

The session will start with Dr Walker presenting a summary of the 2017 DLB Consensus Criteria that were developed to improve the clinical diagnosis of DLB. These revised DLB criteria now clearly differentiate between core clinical features and indicative biomarkers. More diagnostic emphasis is given to REM sleep behaviour disorder and to MIBG myocardial scintigraphy.

The second talk by Professor O'Brien will outline the concept of prodromal DLB, discuss the variety of ways it might present, and present new data from studies which have investigated MCI-DLB as a prodromal type of DLB, showing its differentiation from MCI-AD. This will be followed by an update by Professor Blanc on various DLB imaging biomarkers and their role and limitations as prodromal biomarkers for DLB. FP-CIT SPECT, an established imaging biomarker in DLB has very good specificity but poor sensitivity in prodromal DLB. Other frequently used imaging biomarkers for DLB (MIBG, FDG PET) have not been extensively studied in prodromal DLB. New data will be presented showing interesting findings of visual assessments of the insula for the diagnosis of prodromal DLB. The session will end with a talk by Dr Bousiges who will review CSF biomarkers and how they can facilitate diagnosis. There is urgent need for research in specific biomarkers of DLB, the main being alpha-synuclein aggregates including phosphorylated and oligomeric forms of alpha-synuclein. The role of other biomarkers not directly related to alpha-synuclein will be discussed in the context of DLB diagnosis.

### **CSF biomarker in DLB**

Dementia with Lewy bodies (DLB) is the second most common dementia in the elderly after Alzheimer's disease (AD). Despite this frequency, the DLB remains under-diagnosed or even misdiagnosed. The differential diagnosis of DLB remains difficult especially towards AD and more particularly at an early stage of the disease. The diagnostic value of CSF's Alzheimer biomarkers (Ab42, Ab40, Tau and Ph-Tau) will be presented. Tau and Ph-Tau biomarkers are excellent for differentiating DLB from AD. However, even if these biomarkers are interesting in the case of an AD/DLB comparison, they lack specificity for DLB. That's why, the research is looking for



more specific DLB biomarkers. This pathology being characterized by alpha-synuclein aggregates, it appears that the alpha-synuclein but also the phosphorylated or oligomeric form of alpha-synuclein assay may be relevant for this diagnosis. In addition, it would appear that other biomarkers (e.g. YKL-40, Neurogranin, VILIP-1) that at first glance seem less specific to the pathology because not directly related to aggregative processes can play a role in the biological diagnosis of DLB.

### **Prodromal Dementia with Lewy bodies**

#### Background

Prodromal Alzheimer's disease is a well-established concept, but little is known about how to identify those who will develop dementia with Lewy bodies (DLB) at the pre-dementia or prodromal stage.

#### Methods

Review of the literature combined with new data studies that have recruited subjects with possible or probable prodromal dementia with Lewy bodies (MCI with one or more core DLB features) and examined clinical, cognitive, and imaging abnormalities.

#### Results

Results show that prodromal DLB, as defined by cognitive impairment and core Lewy body features, can be identified and, at a group level, subjects show characteristics one might expect of early Lewy body disease. Biomarkers are abnormal, though at a lower sensitivity (around 50%) than in more established probable DLB (80%), but retain high specificity.

#### Conclusions

Although consensus criteria for prodromal DLB do not currently exist, there is sufficient evidence for MCI with Lewy body features to be defined and utilised for research purposes in order to conduct longitudinal naturalistic studies to refine the concept further, as well as identifying an appropriate high risk group for future therapeutic studies.

### **2017 DLB criteria**

Dementia with Lewy bodies (DLB) is an important type of neurodegenerative dementia. Although significant progress has been made over the last 10 years it continues to be frequently underdiagnosed in the clinical setting with up to 50% of cases being misdiagnosed, mainly as AD but also as vascular dementia, Frontotemporal degeneration or corticobasal syndrome. Accurate differentiation from other types of dementia as well as early detection are essential to allow appropriate management and treatment. An overview of the most recent DLB consensus criteria 2017 (McKeith et al *Neurology* 2017) will be presented. The new criteria now clearly distinguish between clinical features (fluctuating cognition with pronounced variations in attention and alertness; recurrent well-formed visual hallucinations; REM sleep behaviour disorder and spontaneous features of Parkinsonism) and indicative biomarkers. The increasing role of neuroimaging, polysomnography, myocardial scintigraphy and other laboratory investigations will be discussed.

## **S13: Thinking, Feeling, and Moving: Neurobiological and Behavioral Phenotypes of Cognitive, Motor, and Affective Dysfunction during Late Life**

Caterina Rosano, Meryl Butters, Sara Weisenbach, Joseph Kim

Overview: Disorders of cognition, mood, and mobility are frequently diagnosed, treated and studied separately, though co-exist more frequently than expected by chance alone (Butters et al., 2008; Mielke et al., 2013; Penninx et al., 1998), and are associated with increased risk for progression to clinical states, impaired independence and future incident disability (Cummings et al., 2014; DeCarli, 2013; Rodriguez et al., 2013). This symposium examines these domains among non-demented older adults using behavioral and neuroimaging tools.

Shared Neural Correlates of Subclinical Disorders of Mood, Cognition, and Mobility in Older Adults, Caterina Rosano, MD, MPH. This talk reviews neuroepidemiological investigations of shared neural correlates of subclinical disorders in cognition, mood and mobility, cross-sectionally and longitudinally among normally aging elders. Results suggest that subclinical disorders of mood, cognition, and mobility co-occur and appear to share a common indicator of slowed processing.

The Search for Neuroendophenotypes in Late-Life Depression, Meryl Butters, PhD. This presentation discusses results from a large dataset containing multimodal neuroimaging, clinical, and cognitive variables to identify distinct neuroendophenotypes that may represent bioetiologic subgroups in late-life depression (LLD). Results support the existence of clinically relevant neuroendophenotypes within LLD.

Resting State Brain Network Dysfunction and Cognition in Late Life Depression, Sara Weisenbach, PhD. This talk examines resting state brain functional connectivity (RSC) and relationships with cognitive functioning within right and left Cognitive Control Networks (CCN) and Default Mode Network (DMN) among LLD and never-depressed (ND) older adults. Despite similar performances on cognitive measures, LLD demonstrate less functional coherence in DMN and left CCN, relative to ND. RSC positively predicts cognitive performance in ND, and may be useful as a marker of future cognitive decline.

Sex Differences in Structural Predictors of Emotional Face Recognition Accuracy, Joseph Kim, PhD. This presentation examines the association between lateral orbitofrontal cortex (L-OFC) volume and facial emotion recognition in older men and women. After covarying for age and depression symptom severity, larger L-OFC volume is associated with more accurate judgment of happy faces in males, but not in females. Results may suggest a possible novel neuromodulatory treatment target for patients with socioemotional impairments.

*Butters MA, Young JB, Lopez O, et al. (2008). Pathways Linking Late-Life Depression to Persistent Cognitive Impairment and Dementia. Dialogues in Clinical Neuroscience. 10(3), pp. 345-357.*

*Cummings SR, Studenski S, Ferrucci L. (2014). A Diagnosis of Dismobility-Giving Mobility Clinical Visibility: A Mobility Working Group Recommendation. JAMA : The Journal of the American Medical Association. 311(20), pp. 2061-2062.*

*DeCarli C. (2003). Mild Cognitive Impairment: Prevalence, Prognosis, Aetiology, and Treatment. Lancet Neurology. 2(1), pp. 15-21.*

*Mielke MM, Roberts RO, Savica R, et al. (2013). Assessing the Temporal Relationship between Cognition and Gait: Slow Gait Predicts Cognitive Decline in the Mayo Clinic Study of Aging. The Journals of Gerontology Series A, Biological Sciences and Medical Sciences. 68(8), pp. 929-937.*

*Penninx BW, Guralnik JM, Ferrucci L, Simonsick EM, Deeg DJ, Wallace RB (1998). Depressive Symptoms and Physical Decline in Community-Dwelling Older Persons. JAMA: The Journal of the American Medical Association. 279(21), pp. 1720-1726.*

*Rodriguez MR, Nuevo R, Chatterji S, Ayuso-Mateos JL. (2012). Definitions and Factors Associated with Subthreshold Depressive Conditions: A Systematic Review. BMC Psychiatry. 12, p.181.*

### **Resting State Brain Network Dysfunction and Cognition in Late Life Depression**

Background: Older adults with depression show performance variations in multiple cognitive domains relative to their never-depressed peers (Koenig et al., 2015). Resting state (RS) brain activation studies demonstrate abnormal functional pathway connectivity essential to higher-order cognitive functioning in a variety of neurological and psychiatric conditions. This study aims to examine cognitive functioning and connectivity within three major networks important to cognition in depressed and non-depressed elder adults: right and left Cognitive Control Network (CCN) and Default Mode Network (DMN).

Methods: 31 never-depressed, cognitively normal (HC) older adults (M age=66, SD=4) and 13 older adults with Major Depressive Disorder (MDD; M age=70, SD=6) underwent a comprehensive neurocognitive test battery and an 8-minute RS fMRI scan. Using independent component analysis to segregate DMN and right and left CCN, RS networks were identified. ANCOVAs examined between-group differences in network strength, covarying for age, site, and individual correlation with the template brain.

Results: MDD and HC did not differ in performance on measures of memory, processing speed, complex attention, working memory, language or psychomotor speed. However, connectivity coherence within the DMN ( $F [1, 39] = 5.26; p < .05$ , partial  $\eta^2 = .12$ ) and left CCN ( $F [1, 39] = 4.84; p < .05$ , partial  $\eta^2 = .11$ ) was lower in MDD, relative to HC. Connectivity was marginally lower in MDD for right CCN ( $F [1, 39] = 2.35, p = .13$ , partial  $\eta^2 = .06$ ). Among HC only, left CCN coherence positively predicted performance on measures of concept formation and verbal fluency (Adj.  $R^2s = .22 - .45$ , all  $ps < .05$ ). DMN connectivity positively predicted performance in a variety of cognitive domains, including memory retrieval, working memory, and executive functioning (Adj.  $R^2s = .22 - .41$ , all  $ps < .05$ ).

Conclusions: Despite similar performances on cognitive measures, older adults with MDD demonstrate less functional coherence in DMN and left CCN. Changes in brain structure and function often precede behavioral changes (Singh et al., 2014). Variability in DMN and CCN network functioning may predict future cognitive decline among older people, and particularly among those with depression, who are at greater risk of dementia relative to the general population (Saczynski et al., 2010). This sample is being followed longitudinally in order to test this hypothesis.

### Shared neural correlates of subclinical disorders of mood, cognition, and mobility in older adults

Funding Source: Intramural Research Program of the National Institute on Aging, P30 AG024827-06

Subclinical disorders of cognition, mood, and mobility are associated with increased risk for progression to clinical states, impaired independence and future incident disability. 1-3 Although frequently diagnosed, treated and studied separately, these disorders co-exist more frequently than expected by chance alone. 4-6 This co-occurrence implies a potential for a shared etiology. Although there is consistent evidence that clinically overt disorders in these domains are related to cerebral small vessel disease and to psychomotor slowing, 7, 8 evidence is sparse for subclinical stages. 9 We review here our neuroepidemiological investigations of the shared neural correlates of subclinical disorders in cognition, mood and mobility, cross-sectionally and longitudinally. Data are drawn from two large epidemiological studies of aging in place of older adults without neurological or psychiatric conditions: the Cardiovascular Health Study and the Healthy Brain Project- Health, Aging, and Body Composition Study. Taken together, our results suggest that subclinical disorders of mood, cognition, and mobility co-occur and appear to share a common indicator of slowed processing. While in part attributable to vascular brain disease, these subclinical disorders appear to also share distinct abnormalities in selected neural substrates. Clinical and research inquiry into any one of these important conditions of aging should attend to the potential co-existence of disorders in the others. Further studying the shared neurobiology of these disorders should adopt an integrated approach, and it might provide novel insights for early prevention strategies.

Cummings SR, Studenski S, Ferrucci L. A Diagnosis of Dismobility-Giving Mobility Clinical Visibility: A Mobility Working Group Recommendation. *JAMA: the journal of the American Medical Association*. 2014.

DeCarli C. Mild cognitive impairment: prevalence, prognosis, aetiology, and treatment. *Lancet neurology*. 2003; 2(1):15-21.

Rodriguez MR, Nuevo R, Chatterji S, Ayuso-Mateos JL. Definitions and factors associated with subthreshold depressive conditions: a systematic review. *BMC psychiatry*. 2012; 12:181.

Butters MA, Young JB, Lopez O, et al. Pathways linking late-life depression to persistent cognitive impairment and dementia. *Dialogues in clinical neuroscience*. 2008; 10(3):345-357.

Mielke MM, Roberts RO, Savica R, et al. Assessing the temporal relationship between cognition and gait: slow gait predicts cognitive decline in the Mayo Clinic Study of Aging. *The journals of gerontology Series A, Biological sciences and medical sciences*. 2013; 68(8):929-937.

Penninx BW, Guralnik JM, Ferrucci L, Simonsick EM, Deeg DJ, Wallace RB. Depressive symptoms and physical decline in community-dwelling older persons. *JAMA: the journal of the American Medical Association*. 1998; 279(21):1720-1726.

Hajjar I, Quach L, Yang F, et al. Hypertension, white matter hyperintensities, and concurrent impairments in mobility, cognition, and mood: the Cardiovascular Health Study. *Circulation*. 2011; 123(8):858-865.

Kuo HK, Lipsitz LA. Cerebral white matter changes and geriatric syndromes: is there a link? *The journals of gerontology Series A, Biological sciences and medical sciences*. 2004; 59(8):818-826.

Rosano C, Perera S, Inzitari M, Newman AB, Longstreth WT, Studenski S. Digit Symbol Substitution test and future clinical and subclinical disorders of cognition, mobility and mood in older adults. *Age and ageing*. 2016; 45(5):688-695

### Sex differences in structural predictors of emotional face recognition accuracy

Background: Previous studies suggest that impaired interpersonal functioning can be partly characterized by subtle changes in facial emotion processing. Neuroimaging evidence has shown that the lateral-orbitofrontal cortex (L-OFC) plays a role in processing emotional faces. In the present study, we test the association between L-OFC volume in older men and women and their facial emotion recognition performance.

Methods: Twenty older-adult participants (61-79, mean  $\pm$  SD: 67.9  $\pm$  4.9; 11 females and 9 males) with a range of depressive symptom severity (mean HAM-D  $\pm$  SD: 12.7  $\pm$  9.2) performed the Face Emotion Perception Test (FEPT) and also underwent a structural T1 MRI scan. Structural MRI data were processed for volumetric segmentation using the FreeSurfer image analysis suite. Three separate partial correlation analyses were conducted: first both genders combined, and then once again for each gender using L-OFC volume (calculated as a proportion of total intracranial volume) as a predictor,  $d'$  ( $d'$ -prime, which is a type of sensitivity index with false alarm taken into account, see Signal detection theory for more) for happy, sad, angry, and fearful faces as outcome variables, respectively, and age and depression symptom severity as covariates.

Results: For adult men, L-OFC volume positively predicted sensitivity for happy faces ( $r = .779$ ,  $p < .05$ ). This association was not significant in women. In addition, in women only, greater L-OFC volume was associated with higher severity of anxiety symptoms on HAM-A ( $r = .80$ ,  $p < .01$ ). When the same analysis was run with both gender groups combined, no significant relationship between L-OFC volume and emotional face recognition sensitivity emerged.

Conclusions: Our data show that larger L-OFC volume is associated with more accurately judging happy faces in males, but not in females. These results extend previous functional neuroimaging findings by demonstrating a potential sex difference in brain-behavior relationships in social cognition of older adults across the depression severity spectrum, and further suggest a possible novel neuromodulatory treatment target for patients suffering from social functioning impairments.

### **The Search for Neuroendophenotypes in Late-Life Depression**

Background: Late-life depression (LLD), defined as unipolar major depression in individuals age  $\geq 60$  years, is heterogeneous and likely related to several pathophysiologic processes. Our objective was to use a rich dataset containing neuroimaging, clinical, cognitive, and demographic variables to identify distinct neuroendophenotypes that may represent bioetiologic subgroups in LLD.

Methods: Participants included 84 adults age  $\geq 64$  years with remitted LLD per DSM-IV criteria. At study entry, participants underwent  $\beta$ -amyloid PiB-PET neuroimaging, structural MRI for regional grey matter and global white matter hyperintensity volumes, and comprehensive neurocognitive testing. Cognitive diagnoses were adjudicated by a team of experienced clinicians. Relevant demographic and clinical data were collected. We chose ten of the most relevant variables for identifying LLD subgroups and performed K-means (K=3) cluster analysis. We then characterized and validated the clusters by comparing additional relevant variables using ANOVA for continuous variables and Fischer's exact test for categorical variables.

Results: Group 1 (G1, n=16) had the longest duration of depressive illness (mean years; G1=47, G2=17, G3=31;  $p < 0.0001$ ), highest white matter hyperintensity volume ( $p = 0.003$ ), and poorest global cognitive function ( $p < 0.0001$ ) of all three groups. Group 2 (G2, n=32) had the shortest duration of depressive illness, oldest age at onset of depression ( $p < 0.0001$ ), and most cerebrovascular risk factors (mean; G1=1.8, G2=4.0, G3=2.0;  $p < 0.0001$ ) of all three groups. G2 also had a higher average chronic medical comorbidity index score (measured with the CIRS-G) compared to G3 ( $p = 0.018$ ) and a higher average BMI compared to G1 ( $p = 0.017$ ). Group 3 (G3, n=36) was the youngest (mean age in years; G1=77, G2=75, G3=69;  $p < 0.0001$ ), had the best neurocognitive performance, and had the highest total grey matter volume ( $p = 0.002$ ) of all three groups. The groups did not significantly differ in  $\beta$ -amyloid detection on PiB-PET imaging or APOE-4 genotype.

Conclusion: Our results support the existence of clinically relevant neuroendophenotypes within the heterogeneous population of late-life depression. Our results also support previous research that associates detrimental effects with earlier onset and longer duration of depressive illness in some people.

## S14: Twitter Master Class

Maria Lapid, Brent Forester

Social media portals are powerful communication tools that can help the International Psychogeriatric Association (IPA) enhance international presence and reputation. Not only can social media help the IPA, it can also be beneficial to attendees through sharing current research/ publications, posting job openings on their teams, promoting professional accomplishments of their team and faculty members, staying up-to-date on professional conferences/meetings, and connecting with other thought leaders in their fields. However, the multitude of social media tools that are popular for different populations can be confusing and overwhelming. Tailored to the IPA membership of working professionals, the social channels that IPA utilizes are limited to Twitter, Facebook, and LinkedIn. In this session, we will briefly review the basics of Facebook and LinkedIn. The majority of the session will be devoted to Twitter tutorials. Participants will gain familiarity with Twitter and basic terminology, learn how to set up a Twitter account, identify affiliation with the IPA and engage in conversations relevant to geriatric mental health, discuss management of privacy and self-disclosure, and learn Twitter best practices. At the end of the session, participants will have successfully created a Twitter handle, written their first tweet, have followed and be followed by other people, and confidently tweet about events during the IPA Congress and beyond. Participants are required to have an email account, and bring their own Wi-Fi enabled electronic device with ability to download apps.

## **S15: Euthanasia and physician-assisted suicide for elderly people with psychiatric disorders or dementia.**

### **Euthanasia, a historical perspective**

Manuel Martín Carrasco, Jorge Pla Vidal, Manuel Gonçalves Pereira, Manel Sánchez Pérez

A historical review of the practice of euthanasia will be carried out, emphasizing the ethical, and conflicts that have arisen around it especially since its legalization in various countries. There must be a balance between therapeutic and acceptance of a phenomenon associated with increased longevity. The request for euthanasia should never be considered “understandable” merely because a person is aged. By addressing the range of issues contributing to the individual’s wish to die, distress and suffering may be reduced and requests for euthanasia withdrawn.

#### Overview

Euthanasia for people who are not terminally ill, such as those suffering from psychiatric disorders or dementia, is legal in Belgium, the Netherlands and some other countries/states around the world under strict conditions but remains a controversial practice. In this session, the conflicts arising around the practice of euthanasia or assisted suicide in elderly people, both clinical and ethical/legal, are addressed

### **Euthanasia, a historical perspective**

Manuel Martín Carrasco

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### **Rational suicide in old age**

Manuel Sánchez Pérez

Suicide amongst the very old is an important public health issue. Little is known about why older people may express a wish to die or request euthanasia and how such thoughts may intersect with suicide attempts. Palliative care models promote best care as holistic and relieving suffering without hastening death in severely ill patients; but what of those old people who are tired of living and may have chronic symptoms, disability, and reduced quality of life?

### **The challenge of euthanasia and assisted suicide in Psychogeriatrics**

Manuel Gonçalves Pereira

Clinicians have several options for addressing the wish to die in their older patients. Crafting an advance care directive may give relief for some to know that their life will not be necessarily prolonged and provide an opportunity to exert some control over their lives. For others, exploration of spiritual issues and facilitating pastoral care may be of value. In practice, it may be the empathic, ongoing care and support provided by clinicians what people want. Guideline about facing this difficult and controversial issue will be provided.

1. Verhofstadt M, Thienpont L, Peters GY. When unbearable suffering incites psychiatric patients to request euthanasia: qualitative study. *Br J Psychiatry*. 2017 Oct; 211(4):238-245.
2. Emanuel EJ, Onwuteaka-Philipsen BD, Urwin JW, Cohen J. Attitudes and Practices of Euthanasia and Physician-Assisted Suicide in the United States, Canada, and Europe. *JAMA*. 2016 Jul 5; 316(1):79-90.



3. Bolt EE, Pasman HR, Deeg DJ, Onwuteaka-Philipsen BD. From Advance Euthanasia Directive to Euthanasia: Stable Preference in Older People? *J Am Geriatr Soc*. 2016 Aug; 64(8):1628-33.



## **S16: Should the biomedical model still be the dominant one in dementia research**

### ***Symposium Overview***

Frans Verhey, Myrra Vernooij-Dassen, George Grossberg, Raimundo Mateos, Jacobo Mintzer  
Should the biomedical model still be the dominant one in dementia research? A debate

In last decades much research has been performed on neural mechanisms underlying dementia and other neurocognitive disorders, but despite and huge efforts and financial investments, the net result is still limited. Anti-amyloid immunotherapy seems unlikely to yield substantial disease slowing at the dementia stage. To date, no cure is available for Alzheimer's disease nor any other related disorder, and recent clinical trials have failed to bring any effective treatment. It is fair to say that there is no concrete outlook that this will be different in the future. Is it time to abandon our focus on anti-amyloid interventions, and hat alternatives do we have? This situation has even led researchers to question the neurobiological model of Alzheimer's.

In this session, we aim to elicit a discussion how we should proceed from here in order to improve the quality of the lives of those living with dementia or its prodromal stages, or to prevent or delay the onset of dementia. On the basis of short introductions, statements will be put forward that we will discuss interactively with the audience.

## S17: *International Psychogeriatrics* Top Papers: Keeping Brain and Mind Healthy in Later Life

Dilip Jeste, Dilip Jeste, Huali Wang, Gary Small, Anna Scelzo

This session will include updates on several selected high-impact papers recently published in the *International Psychogeriatrics*. The focus will be on strategies to detect cognitive impairment at an early stage and reduce the risk of developing dementia. Wang will present a study that found that a brief set of the neurocognitive tests was feasible and valid in aging Chinese samples. It would enable early detection as well as better characterization and comparison of risk factors, outcomes, and prevalence of cognitive decline in low-, mid-, and high-income countries in the world. Small will describe the use of verbal fluency as a screening tool for mild cognitive impairment. His group has also found potential cognitive benefits of an herb, curcumin, in non-demented middle-aged and older adults. Daily curcumin consumption led to significant improvements in memory and attention, and decreases in amyloid and tau accumulation in brain regions modulating mood and memory. Equally important for helping keep aging brain and body stay young are psychological characteristics. Scelzo will present results of a mixed-methods quantitative-qualitative study of 29 adults aged >90 and their 51 middle-aged family members from Cilento, Italy. Participants age >90 years had worse physical health but better mental well-being than their younger family members. The main themes that emerged from qualitative interviews of the people age >90 included positivity (resilience and optimism), working hard, and bond with family and religion, along with a domineering attitude and love of the land. Jeste will discuss a study of 340 adults in San Diego that showed that 76% of them had moderate-high levels of loneliness, which correlated with worse mental and physical functioning. Loneliness peaked in the mid-20s, early 50s, and late 80s. A strong negative association of loneliness with wisdom highlighted the potentially critical role of wisdom as a target for psychosocial interventions to reduce loneliness and promote health. All the presenters will focus on techniques that clinicians should use in their practice for early detection as well as prevention of cognitive decline in older adults.

1. Lee EE, et al.: High Prevalence and Adverse Health Effects of Loneliness in Community-dwelling Adults Across the Lifespan: Role of Wisdom as a Protective Factor. *International Psychogeriatrics* 2018, 18:1-16.
2. McDonnell, M. et al.: Verbal fluency as a screening tool for mild cognitive impairment. *International Psychogeriatrics*, 2019, in press.
3. Scelzo A, et al.: Mixed-Methods Quantitative-Qualitative Study of 29 Nonagenarians and Centenarians in Rural Southern Italy: Focus on Positive Psychological Traits. *International Psychogeriatrics*. 2018 Jan; 30(1):31-38.
4. Small, G. W. et al (2018). Memory and brain amyloid and tau effects of a bioavailable form of curcumin in non-demented adults: A double-blind, placebo-controlled 18-month trial. *American Journal of Geriatric Psychiatry*, 26, pp. 266–277.
5. Wang H, et al.: Validation of Neuropsychological Tests for the China Health and Retirement Longitudinal Study Harmonized Cognitive Assessment Protocol. *International Psychogeriatrics*, 2019, in press.

### **Detecting and Mitigating Age-Related Cognitive Decline: Potential Benefits of Curcumin and Other Strategies**

Gary Small

Age is the greatest single risk factor for developing memory complaints, and our group found that self-awareness of memory decline may reflect the extent of brain amyloid and tau brain pathology.<sup>1</sup> We also found that semantic fluency may be an accurate and efficient tool in screening for early dementia in time-limited medical settings.<sup>2</sup> Early detection of such symptoms is important since self-perceived memory difficulties throughout adult life are associated with reports of behaviors that do not benefit cognitive abilities (e.g., physical inactivity, smoking, unhealthy diet), suggesting that lifestyle behavior habits may protect brain health and possibly delay the onset of memory symptoms as people age.<sup>3</sup> To better understand how nutrition may protect the brain, we recently studied the potential cognitive benefits of a bioavailable form of the Indian herb used in curry powder, curcumin (Theracurmin), in non-demented middle-aged and older adults.<sup>4</sup> Epidemiological studies indicate a lower prevalence of Alzheimer disease in Indian people who consume curcumin in curry and a link between dietary curry consumption and better cognitive performance in older adults. Moreover, curcumin's anti-inflammatory, antioxidant, anti-amyloid, and possible anti-tau properties may offer neuroprotective benefits. We thus randomized 40 subjects (age 51-84 years) to Theracurmin containing 90 mg of curcumin twice daily (N = 21) or placebo (N = 19) for 18 months. Daily curcumin consumption led to significant improvements in memory and attention, as well as decreases in amyloid and tau accumulation in brain regions modulating mood and memory. A multi-site study is currently planned to replicate these encouraging results. Taken together, these findings suggest that early detection and intervention could help people mitigate the onset of memory symptoms as they age.

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2. McDonnell, M. et al. (in press). Verbal fluency as a screening tool for mild cognitive impairment. *International Psychogeriatrics*.
3. Small, G. W. et al (2013). Healthy behavior and memory self-reports in young, middle-aged and older adults. *International Psychogeriatrics*, 25, pp. 981-989.

- Small, G. W. et al (2018). Memory and brain amyloid and tau effects of a bioavailable form of curcumin in non-demented adults: A double-blind, placebo-controlled 18-month trial. *American Journal of Geriatric Psychiatry*, 26, pp. 266–277.

## **Loneliness versus Wisdom**

### Dilip Jeste

This study of loneliness across adult lifespan examined its associations with sociodemographics, mental health (positive and negative psychological states and traits), subjective cognitive complaints, and physical functioning. We conducted analysis of cross-sectional data. Study participants were 340 community-dwelling adults in San Diego, California, mean age 62 (SD = 18) years, range 27–101 years, who participated in three community-based studies. Measurements included 3 loneliness measures: (UCLA Loneliness Scale Version 3 (UCLA-3), 4-item Patient Reported Outcomes Measurement Information System (PROMIS) Social Isolation Scale, and a single-item measure from the Center for Epidemiologic Studies Depression (CESD) scale. Other measures included the San Diego Wisdom Scale (SD-WISE) and Medical Outcomes Survey- Short form 36. Seventy-six percent of subjects had moderate-high levels of loneliness on UCLA-3, using standardized cut points. Loneliness was correlated with worse mental health and inversely with positive psychological states/traits. Even moderate severity of loneliness was associated with worse mental and physical functioning. Loneliness severity and age had a complex relationship, with increased loneliness in the late-20s, mid-50s, and late-80s. The best-fit multiple regression model accounted for 45% of the variance in UCLA-3 scores, and three factors emerged with small-medium effect sizes: wisdom, living alone and mental well-being.

- Lee EE, et al.: High Prevalence and Adverse Health Effects of Loneliness in Community-dwelling Adults Across the Lifespan: Role of Wisdom as a Protective Factor. *International Psychogeriatrics* 2018, 18:1-16.
- Jeste DV, Savla GN, Thompson WK, Vahia IV, Glorioso DK, Martin AS, Palmer BW, Rock D, Golshan S, Kraemer HC and Depp CA. Association between older age and more successful aging: Critical role of resilience and depression. *American Journal of Psychiatry* 170:188-196, 2013
- Thomas ML, Bangen K, Palmer BW, Martin AS, Avanzino JA, Glorioso DK, Daly RE, Jeste, DV: A New Scale for Assessing Wisdom Based on Common Domains and a Neurobiological Model: The San Diego Wisdom Scale (SD-WISE). *Journal of Psychiatric Research*. 2019 Jan; 108:40-47. doi:10.1016/j.jpsychires.2017.09.005
- Jeste DV and Oswald AJ. Individual and societal wisdom: Explaining the paradox of aging and well-being. *Psychiatry* 77:317-330, 2014.

## **Positive traits involved in healthy aging and longevity: Study in Cilento, Italy**

### Anna Scelzo

Studies on longevity focusing on personality traits have normally been conducted through interviews to centenarians or their offspring separately and via telephone. The present study is an action research (Kurt Lewin) and a semi-qualitative study looking at the positive traits involved in the aging of a group of centenarians and their family members conducted in their household.

Both centenarians and their family members scored in the low range for depression, anxiety and stress and in the high range for Optimism and Resilience. As for Physical Health, younger members of the family showed better result but scored less than the Centenarians for Mental State.

Interviews conducted at the participants' home can give to this kind of research a great added value. Building rapport with them allows to gather more information on what can be the factors that can lead people to achieve an older age in a good health and mental conditions, since it gives the possibility to experience their emotions and the feeling of those living with them; to understand through the storytelling of their life events whether and how trauma have affected them and their cohort. This can give us a better understanding on why and how resilience for example can be considered a relevant factor for people who reach 100 years of age or more, on how it grows and whether it is found only in particular geographical places. In this Symposium we will have a deeper insight into those factors that can allow people to have a long and enjoyable life by having a significant role in the community they live in, thus providing purpose in life.

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## Validation of Neuropsychological Tests for the China Health and Retirement Longitudinal Study Harmonized Cognitive Assessment Protocol

Huali Wang

**Background and objectives:** An increasing number of studies have estimated the prevalence of dementia in China, but none of these prior studies has used data from nationally representative surveys. One of the reasons is the lack of validated neurocognitive tests suitable for administration in population surveys, especially in low- and middle-income countries. The Harmonized Cognitive Assessment Protocol (HCAP) was administered in the Health and Retirement Study (HRS) was developed to provide new data from both high-income, and low- and middle-income countries, in order to better characterize and compare the risk factors, outcomes, and prevalence of cognitive decline and dementia around the world, including China. The China Health and Retirement Longitudinal Study (CHARLS) is a nationally representative, longitudinal, probabilistic survey representing adults aged 45+ in China. The feasibility study we presented aimed to compare and validate neurocognitive tests in the HCAP for the CHARLS, and to identify appropriate tests to be administered in future waves of CHARLS.

**Methods:** We recruited 825 individuals from the CHARLS sample and 766 subjects from hospitals in six provinces and cities in China. All participants were administered the HCAP-neurocognitive tests, and their informants were interviewed regarding the respondents' functional status. Trained clinicians administered the Clinical Dementia Rating scale (CDR) to assess the respondents' cognitive status independently.

**Results:** The testing protocol took an average of 58 minutes to complete. Refusal rates for tests of general cognition, episodic memory, and language, were less than 10%. All neurocognitive test scores significantly correlated with the CDR global score (correlation coefficients ranged from 0.139 to 0.641). The MMSE, HRS-TICS, CSI-D-respondent, episodic memory and language each accounted for more than 20% of the variance in global CDR score ( $p < 0.001$ ) in bivariate tests. In the CHARLS subsample, age and education were associated with neuropsychological performance across most cognitive domains, and with functional status.

**Conclusion:** A brief set of the CHARLS-HCAP neurocognitive tests are feasible and valid to be used in the CHARLS sample and hospital samples. It could be applied in the future waves of the CHARLS study and allows estimating the prevalence of dementia in China through the population-based CHARLS.

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## **S18: Crosstalk between Pain and Cognitive function in Health and Disease**

### **Loose Verbal Communication of Pain in the Elderly People with Dementia**

Lydia Giménez-Llort, Adriana Serrano, Anna Roquer, Isabel Moriana, Lara Pajuelos, Antoni Monllau, Manel Sánchez

#### **Presentation**

In the next decades, the aging of population will demand strong efforts to manage comorbidities, most of them involving painful conditions and affecting mental health of the geriatric patient. Already now, among those faced by psychogeriatrics and other specialties caring for health and disease of the elderly, the impact of the crosstalk between pain and cognitive impairment crosstalk is a subject of extreme relevance, since it strongly compromises the quality of life of patients and caregivers. Since age is the main risk factor for dementia and pain, the number of patients with both dementia and pain will also grow. It seems already now evident that pain is grossly under-diagnosed and under-treated in dementia. The symposia presents the current research and most recent results from the expertise in the frame of EU COST-Action TD1005 "Pain assessment in cognitive impairment, especially dementia". The symposia is complementary to the workshop 'Pain in Older Adults with Cognitive Impairment especially dementia' so we strongly recommend to attend it in order to achieve the state-of-art of this topic. Here, we address four selected topics of special interest: the assessment of pain in subjects with mild and severe cognitive impairment as well as Huntington's disease, a rare neurodegenerative disease; we provide tools to analyze and improve our understanding of bizarre verbal communication of pain in dementia patients; we dissect the pain and delirium in older people, especially in those with dementia or with long-term cognitive impairment. Finally, we present most recent results on pain in oncological geriatric patients. With these four lectures illustrative of our current research in the field, we want to provide tools to improve the knowledge and contribute to better management of pain and cognition in these psychogeriatric patients and their caregivers.

#### **Loose verbal communication of pain in older people with dementia**

About half of the elderly people with dementia have frequent pain, as other old adults do. Moreover, a substantial number of studies indicate that pain sensitivity in old people with Alzheimer's disease is intact and may even be increased. However, their pain is difficult to recognize and to assess and, therefore, it is difficult to treat. Hence, the worrisome situation of the data indicates that affectation of the cognitive-evaluative nociceptive pathways and the poor self-report due to progressive loss of verbal communication make pain to be underdiagnosed and undertreated in people with cognitive impairment, especially dementia. In the context of COST Action TD1005, 'Pain in Cognitive Impairment, especially Dementia', the Spanish PAIC-team was interested to determine the contribution of verbal and non-verbal communication patterns in response to experimental pain. 66-85 years old people with Alzheimer's, vascular or mixt dementias and 3-6 Reisberg GDS stage and age-matched relatives (controls) participated in the study. The measurement of the latency of verbal and non-verbal responses to different intensities of a nociceptive mechanical stimuli (pressure) indicated that the patients exhibited longer reaction times, which negatively correlated with the level of cognitive impairment (MMSE) and their GDS. They also required more attempts to quantify their pain, by presence/absence of pain and by its intensity. They confronted difficulties to provide an answer using a verbal numeric scale, and when they did so most of the times it was in disagreement with the level of pressure administered. The number of attempts and corresponding trial-error did not result in learning and a better answer. A semantic analysis of the language expressions showed that the older people with dementia used more and a wider array of expressions to qualify their perceptions than the healthy controls. According to the content, verbal answers were classified in 13 categories. Among them, 'intensity' and 'comparison' were the most common and accurate answers provided by the patients. Thus, the use of language for a qualitative evaluation of events is more feasible and useful as compared to the consistent failure of the quantitative reports of the same subjects. These patterns of 'loose' verbal communication can be useful for professionals and caregivers for pain management in dementia and as complementary to observational pain scales.

#### **PAIC, Pain and Huntington's disease**

Marina De Tommaso, Sara Invitto

This study represents a sub-evaluation of the Italian group belonging to the European Cooperation in Science and Technology (COST) between 2011 and 2017. The Italian work has overcome both in a general way subjects with mild and strong cognitive impairments, admitted to clinics and hospitals, and a subgroup with a rare disease, the Huntington's disease (HD). HD is a neurodegenerative genetic disorder that affects muscle coordination and leads to mental decline and behavioral symptoms. Furthermore, HD is cause of abnormal involuntary writhing movements. In carrying out the test, the TD1005 instrument was examined, the PAIC scale. In particular, will be described the results of TD1005, administered to twelve subjects affected by HC, recruited from the ANP Lab unit - Applied Neurophysiology and Pain, Bari Policlinic Hospital, compared with a group of twelve controls, recruited in University of Salento. The subjects were filmed during various stimulations with an algometer, both on the dominant side and on the non-dominant side. The data analysis highlighted a significant difference in the responses obtained during the stimulation phase between the control subjects and the subjects affected by Huntington's disease, concerning different response patterns related to facial movements, body movements



and vocalizations. The results of this research show that subjects with Huntington's disease show greater shrinkage and eye strain, greater eye closure and show that the upper lip is more raised than the control group. Moreover, in these subjects there is a more evident opening of the mouth and lips compared to the control group in the stimulation phase. Finally, subjects with Huntington's have a more unhappy facial expression than the control group. This accentuation of behavioral responses does not correspond to the subjective assessment that patients reported on pain intensity. Furthermore, these expressions are not related with the syndrome's stereotypes, because the Corea's movements recorded during the baseline was subtracted by the movements linked to the algometric stimulation.

### **Pain and Cognitive Impairment in oncologic geriatric patients: a PAIC study linked to nutrition and olfactory impairment**

Sara Invitto, Silvana Leo

Risk of developing cancer increases with age, so are cognitive impairment disorders. That's why it is hard to distinguish between cognitive changes related to cancer therapy and cognitive dysfunction caused by age or/and degenerative cognitive disorders. Chemo brain or chemo fog is known as a phenomenon that involves a lot of changes in cognitive functioning, mainly at the level of memory, attention and thinking. Often, patients report memory lapses, slower thinking and processing, attention focusing and distraction, thinking and behavioural disorganization, learning new skills or multi-tasking troubles. A lot of factors are supposed to be responsible for this changes like cancer itself, cancer treatment as chemotherapy, radiation therapy, hormones, surgery and psychological response to cancer. This study represents a sub-evaluation of the Italian group belonging to the European Cooperation in Science and Technology (COST) between 2011 and 2017 and prolonged with a new developed research protocol linked to cognitive impairment, nutrition and olfactory impairment. The Italian work has overcome both in a general way subjects with mild and strong cognitive impairments, admitted to clinics and hospitals, and a subgroup oncological geriatric patients with dementia due to oncological therapy. Geriatric oncological patients were investigated through to different typology: chemotherapy and immunotherapy for solid tumour. In particular, will be described the results of TD1005, administered to fifty patients (mean age 75, 71; s.d. =4, 49) affected by oncological pathologies, recruited from the Oncology Unite Vito Fazzi Hospital Lecce (Italy). The results of this study show that cancer patients, despite cognitive impairment, express a nociceptive perception at a body level. This expression can be related to olfactory aspects and to a variation in the diet. Specific requirements in pain therapy with patients following immunotherapy.

### **Pain and delirium in older people, especially with dementia or long-term cognitive impairment**

Elisabeth Sampson

In the next decades, the aging of population will demand strong efforts to manage comorbidities, most of them involving painful conditions and affecting mental health of the geriatric patient. Already now, among those faced by psychogeriatrics and other specialties caring for health and disease of the elderly, the impact of the crosstalk between pain and cognitive impairment crosstalk is a subject of extreme relevance, since it strongly compromises the quality of life of patients and caregivers. Since age is the main risk factor for dementia and pain, the number of patients with both dementia and pain will also grow. It seems already now evident that pain is grossly under-diagnosed and under-treated in dementia. The symposia presents the current research and most recent results from the expertise in the frame of EU COST-Action TD1005 "Pain assessment in cognitive impairment, especially dementia". The symposia is complementary to the workshop 'Pain in Older Adults with Cognitive Impairment especially dementia' so we strongly recommend to attend it in order to achieve the state-of-art of this topic. Here, we address four selected topics of special interest: the assessment of pain in subjects with mild and severe cognitive impairment as well as Huntington's disease, a rare neurodegenerative disease; we provide tools to analyze and improve our understanding of bizarre verbal communication of pain in dementia patients; we dissect the pain and delirium in older people, especially in those with dementia or with long-term cognitive impairment. Finally, we present most recent results on pain in oncological geriatric patients. With these four lectures illustrative of our current research in the field, we want to provide tools to improve the knowledge and contribute to better management of pain and cognition in these psychogeriatric patients.

### **Pain and delirium in older people, especially with dementia or long-term cognitive impairment**

Elisabeth Sampson

Pain and delirium are common in older people. Particularly those with dementia or other long-term cognitive impairment. Both are often under-diagnosed and under-treated. Pain is implicated as a cause of delirium but this association has not been widely investigated. There is consistent evidence that effective pain management reduces the risk of delirium but the mechanisms underlying this are unclear. In this symposium we will review the literature that explores the associations between pain and delirium in older people, including our recently published work on a cohort of 230 acute hospital in-patients with dementia. Here we found that pain at rest developed in 49%, and pain during activity for 26% of participants during their inpatient stay. Incident delirium developed in 15%, of participants, and 42% remained delirious for at least two assessments. The odds of being delirious were 3.26 times higher in participants experiencing pain at rest (95% Confidence Interval 1.03–10.25,  $P = 0.044$ ). These findings confirm that pain may be a risk factor for delirium. Since pain and delirium were found to persist and develop during an inpatient stay, regular pain assessments are required to manage delirium effectively. The underlying mechanisms for this association are complex and fascinating and we will discuss the role of depression, anxiety, agitation, sleep deprivation and impaired homeostasis as potential mediators. We will also

discuss how the cholinergic system may modulate pain perception and thus development of delirium. Finally we will discuss the optimal management of pain and how this may prevent the development of delirium.

**Twisted verbal communication of pain in older people with dementia**

Lydia Giménez-Llort, Adriana Serrano, Antoni Monllau, Manel Sánchez

Under construction



## S19: Master Class: Doll Therapy:

### Method and procedure of a Non-Pharmacological Therapy in the Management of BPSD

Ivo Giovanni Cilesi, Giovanna Lucchelli, Egle Miriam Carobbio

#### Doll Therapy in the management of BPSD

Ivo Giovanni Cilesi

People with Neuro-Cognitive Disorders frequently exhibit behavioural and psychological symptoms of dementia (BPSD), which compromise the quality of life of the person and caregiver, bringing to a large use of restraining (chemical or physical) and to institutionalisation. Definition of BPSD, as well as results of Doll Therapy application with different kind of BPSD will be discussed.

#### Conceptual background of Doll Therapy

Egle Miriam Carobbio

Doll Therapy is a non-pharmacological therapy, considered as a selected methodology with BPSD and is used in advanced stages of the disease. Doll Therapy acts by stimulating care and maturation reactions towards the therapeutic doll created ad hoc, which has specific characteristics and stimulates hug. The use of the doll fulfills several objectives, proving to be useful as a tool for promoting well-being, as it elicits caring behaviors that counteract isolation and stimulate some cognitive functions, particularly attention and language; and as an aid to the caregiver in carrying out care and health tasks.

#### Methodology and application of Doll Therapy

Giovanna Lucchelli

To successfully apply the Doll Therapy it is important to understand the methodology, to use international evaluation scales for screening, the correct application methods, protocols of delivery, collection, pause and forms of observation and evaluation. Moreover, it is very important to understand the characteristics of the therapeutic doll, its physiognomy, also in comparison with commonly used dolls.

#### Discussion in the use of Doll Therapy

Ivo Giovanni Cilesi

By discussing cases of application of the Doll Therapy, tools to implement the appropriate strategies for the delivery and collection of the therapeutic doll will be provided. Moreover, the DT application in different contexts, such as nursing homes rather than home care assistance, will be analysed and the efficacy in the improvement of the quality of life for the person with dementia (e.g. reduction and management of BPSD) and the caregiver (formal or informal) will be discussed.

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## **S20: Implementation Science: Priorities for Healthcare in Dementia**

Ian Maidment, Clive Ballard, Chris Fox

Session Overview: The key challenge for delivering effective health care and social care for people with dementia is implementation of best evidence based practice. Often we know what to do, but the benefits are not translated into improved treatment or care – leading to missed opportunities for benefits, excessive harms and often increased cost. This session will provide results from four large ground-breaking scale research programmes in dementia in the community, care homes and hospitals in the USA and UK. Theme is centred around implementation and improvement science. This cutting edge session will cover the challenges and facilitators to the effective and successful implementation of complex interventions, and the underpinning logic model.

Learning Objectives:

Determine key components to implement better care in dementia in care homes and hospitals

Illustrate key strategies to implement care improvement research interventions in dementia and cognitive impairment

### **The challenge of implementation of optimal medication use for people with dementia.**

Ian Maidment

Method: Medication optimisation in people with dementia on complex regimens living in the community. Evidence from the literature was integrated with narrative accounts of people's experiences to inform the development of a framework for implementation of medication optimisation. Result: Implementation of optimal medication usage is challenging. There is significant care fragmentation. Implementation of medication optimisation in the community requires a behavioral change approach to address the key drivers of capacity and burden. There is a complex underpinning logic model for implementation of optimal medication usage, involving disparate groups of clinicians, social care staff, people living with dementia and their family carers. Conclusion: Implementation of medication optimisation in people living with dementia is challenging and needs a systematic behavioral change approach.

### **Impact of an e-Learning Intervention Based on the Improving Well-Being and Health for People with Dementia (WHELD) Training Programme**

Clive Ballard

Method: A randomized single blind clinical trial comparing the WHELD based e-learning programme with and without skype supervision to treatment as usual in nursing homes. Main outcome measures included staff attitudes towards people with dementia (Approaches to Dementia Questionnaire [ADQ]), quality of care indicated by wellbeing of residents (Dementia Care Mapping [DMC]) and general health of care staff (General Health Questionnaire [GHQ-12]). Result: Engagement was excellent in staff who spoke English as a first language with good literacy, but was more limited in other groups. The e-learning with skype supervision conferred significant positive benefit in staff attitudes toward people with dementia compared to treatment as usual, as measured by the ADQ ( $t=2.08$ ,  $p=.042$ ) with a Cohen's  $d$  standardized effect size of 0.53. No benefits were seen in the self-directed group. There were significant benefits in overall quality of care for PwD, as measured by DCM, where well-being in PwD was significantly better in both the supported ( $t=2.8$ ,  $p=.006$ ) and self-directed ( $t=2.8$ ,  $p=.006$ ) treatment groups compared to the enhanced control with sustained benefits at 4-month follow up in the supported group only ( $t= 2.89$ ,  $p=.004$ ). There was a significant increase in the GHQ scores of care staff in the supported group compared to enhanced treatment as usual, as measured by the GHQ-12 ( $t=2.8$ ,  $p=.006$ ). Conclusion: The WHELD E-Learning training supported by skype supervision improved key outcomes for care staff and people with dementia.

### **Implementation in Acute Care in Dementia- Insights from the Perfected Hospital Care Research Programme**

Chris Fox

Method: Action research with case study design to introduce PERFECT-ER intervention. Qualitative data. Normalisation Process Theory (NPT) was used to analyze. Results: Implementation challenges were reviewed by change agents. They had to make sense of the intervention package, the Plan Do Study Act model as an

implementation method and orientate these within their action context (coherence). They then had to encourage colleagues to invest (cognitive participation) and find ways to implement the intervention by driving changes (collective action). Finally, they created strategies for clinical routines to continue to self-review, reconfiguring actions and future plans to enable sustainability (reflexive monitoring). All hospital wards successfully implemented intervention elements. The Service Improvement Lead (Qualified Nurse) role was key to facilitating change. To enable changes to happen, they used peer pressure, aligned changes with existing practices or new organisational initiatives, secured support from ward managers, and created and utilised networks. Conclusions: Our findings indicate that ward practice changes are possible. Improving quality of care and enhancing consistency in practice is facilitated by having a dedicated person(s) to continuously drive changes. Sustaining practice change requires system buy-in and, change agents.

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## S21: Emerging Trends in Preventing Dementia at a Global Level

Emerging evidence indicates dementia as potentially preventable in 1/3 persons. Transforming healthcare globally to achieve this vision requires urgent and impactful change in health behavior as first line medicine. This symposium highlights innovative CBT-based behavior change tools and strategies for biopsychosocial and environmental interventions optimizing brain health and resilience.

Kiran Rabheru, Conn David, Sano Mary, Jeste Dilip

### **Why We Must Think About Preventing Dementia Globally**

Mary Sano

Population aging and dementia are global issues. Maintaining cognitive capacity is essential in an increasing complex environment (e.g. technologically). Mobile societies and changes in family structure have diminished support networks, increasing loneliness, social isolation, increased psychological stress, with greater risk for frailty and dementia. To date, pharmacological treatments for dementia have been ineffective. Pharmacological and non-pharmacological approaches and their Implications for global health policy will be considered.

### **Global Innovations and Strategies for Dementia Prevention**

David Conn

A recent systematic review of the magnitude and direction of the global changes in dementia prevalence and incidence across time reported that although prevalence rates are generally increasing, a significant decline in prevalence has been reported in more recent studies (i.e., from 2010 onwards) from Europe (e.g., UK and Sweden) and the USA. (Stephan et al, 2018). This is encouraging and could reflect better management of cardiovascular risk factors and higher levels of education over time. The International Lancet Commission on Dementia Prevention, Intervention and Care estimated that more than a third of dementia cases might be preventable. The report identified the following interventions as potentially helpful: prevention, detection and active treatment of hypertension, hyperlipidemia and diabetes; increased educational attainment; prevention of head injuries and encouragement of healthy lifestyles, especially increased physical, intellectual and social activity, healthy eating habits, smoking cessation, moderate alcohol consumption and addressing sleep problems (Livingston et al., 2017). While there is growing agreement on the protective and risk factors for dementia less is known about the effective implementation of interventions to delay or prevent it. The consensus report of the USA's National Academies of Sciences, Engineering and Medicine (2017) noted that the evidence in some areas was encouraging but inconclusive, and pointed out a need for further research on larger, more diverse populations with longer follow-up. Current strategies for preventing cognitive decline and dementia will be outlined including promising studies of multi-modal interventions such as the Finnish Geriatric Intervention Study to Prevent Cognitive Impairment and Disability (FINGER) (Ngandu et al. 2015).

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### **Transforming Healthcare for Dementia Prevention: Health Behavior Change as First Line Medicine**

Kiran Rabheru

Fountain of Health, an innovative Canadian initiative, provides CBT-based health behaviour change tools for use as first line medicine by all clinicians using S.M.A.R.T. goal-setting in 5 key domains: physical activity, social activity, brain challenge, positive thinking, and mental health to promote brain health, resilience, and dementia prevention. Disrupting the "disease model" of healthcare, all clinicians and patients may benefit with a global impact on health & its costs.

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## S22: Olfaction and other sensory impairments in psychogeriatry

### **Pain and Olfactory Perception and other sensorial impairment in geriatric women with Chronic Intimate Partner Violence**

Giulia Piraino, Sara Invitto

The Intimate Partner Violence (IPV) turns out to be of particular social importance, taking into account the current high incidence and the cognitive, emotional, behavioral and social consequences that this phenomenon determines. The knowledge so far produced highlights how the presence of a prolonged stress causes psychophysiological consequences that generate cognitive, emotional and behavioural dysfunctions in victims of violence. The aim of this study is to investigate in geriatric women who have suffered chronically from the partner's violence, the relationship between IPV, nociception and memory in relation to common cognitive aspects. This relationship determines a connection between processes that in a different way contribute to assessing the salience of specific stimuli related to the trauma suffered and to reactivate this salience even in subsequent moments.

The perception of pain is, in fact, cognitively codified in a multi-sensorial way, attributing a specific value and emotional and perceptive salience, which we can connect to the theories of the embodied cognition. The analysis of this framework was useful for the development of an intercultural model aimed at clarifying the cognitive, emotional and behavioral functioning of women victims of violence in relation to the evaluation of pain perception. This assessment will use neuropsychological tests to investigate cognitive and emotional responses and psychological tests to investigate the personality of the victims.

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### **Potential Role of Olfactory Event Related Potentials as early marker in Mild Cognitive Impairment and in other Neurodegenerative Processes**

Sara Invitto

Olfactory impairment is present in up to 90% of patients with Alzheimer's disease (AD) and is present in certain cases of mild cognitive impairment (MCI), a transient phase between normal aging and dementia. Subjects affected by MCI have a higher risk of developing dementia compared to the general population, and studies have found that olfactory deficits could be an indicator of whether such a conversion might happen. Following these assumptions, aim of this study was to investigate olfactory perception in MCI geriatric patients and in OSAs patients. In both clinical sample an alteration of Olfactory Event Related Potentials was found, in particular in the N1 sensorial component. In both groups we also find compensation in the slow perceptive / cognitive response, particularly in the Late Positive Components. These results lead us to think that olfactory processes, as they are linked to subcortical, metabolic and oxidative aspects, can be important biomarkers in the early stages of cognitive impairment.

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### **Translational research of sensory systems in models of aging and Alzheimer's disease**

Baldo Tapias, Lydia Gimenez-Llort, Virginia Torres Lista, Secundi López-Pousa



Far from decline of olfactory function associated to normal aging, patients with Alzheimer's disease (AD) present olfactory dysfunction and difficulties in recognizing environments, especially if they involve novelty. This entails difficulties of adaptation and autonomy in their own homes or in residential centres. Also, social relationships are impoverished, together with the presence of BPSD behavioural and psychological symptoms associated to dementia. At the translational level, modelling Alzheimer's disease in rodents harbouring familial AD mutations mimics the neuropathological hallmarks of the disease. Behavioural patterns of these animals do also reveal the presence of cognitive deficits than have been classically used to study the neurobiological basis underlying the disease, and the assessment of preventive/therapeutical treatments. Here we provide a pragmatic overview of methodological approaches used to study AD in rodents, which are based on the interaction of the subject with the environment, the tests addressing BPSD-like alterations and those few involving the relation with other individuals. In this sense, social neuroscience, which in rodents is mostly driven by olfaction, is foreseen as important to improve the predictive validity of new preventive and/or therapeutic strategies. We also illustrate our most recent work in male and female triple-transgenic mice 3xTg-AD at ages where they mimic advanced neuropathological stages of disease with beta-amyloid and tau pathologies, as compared to sex- and age-matched non-transgenic mice with normal aging. The recognition and discrimination of new and familiar environments based on its olfactory component, but also the social interaction and anxious-like behaviours once in contact with other congeners is presented. The results show that 3xTg-AD mice are a good model to study the problems associated to olfactory dysfunction such as recognition and discrimination of new environments, or social interaction with age-matched congeners, being the most suitable female genus to study it experimentally.

### **Vulnerability and resilience of the sensory systems in psychogeriatrics**

Lydia Giménez-Llort

All along the life span, the sensory systems should ensure our capacity to perceive and recognize the world, as a kind of structure and/or contents insurance. Thus, the temporal course and the severity of their involution through the aging process is determinant for individuals as it limits the capacity to sustain the quality of the sensory inputs, affecting not only the cognitive processes but their self-esteem, habits and life styles. By causing such vulnerability and/or disability, sensory impairments are significantly increasing the risk of impoverishment of the elderly at the biological, psychological and social levels. Here, we provide an overview of the most common changes in the sensory systems, namely, visual, auditory, somatosensory (touch, pressure, temperature, pain, equilibrium and proprioception), gustatory and olfactory systems. Most importantly, how they are affected in health and disease. A multisensory assessment will help to estimate the short and long-term effects of sensory impairments in the psycho-social dimensions and which strategies can be useful to be implemented in order to mitigate their impact. Among other, tasks such as driving, cooking, gardening, playing cards or being grandparents can provide examples of common daily life activities that are demanding but also potentiate the resilience of sensory systems. It is important also to consider how other, mainly professionals and family caregivers, address or are blind to these sensory impairments and its impact in the old people. The elderly patients with disabilities also provide a singular scenario to explore the vulnerability/resilience paradox, offering tools to those who are confronting sensory impairments due to the normal aging process. Finally, non-pharmacological interventions based on structured or creative sensory stimulation such as multisensory rooms or arts are proposed for the promotion and rescue of sensory functions in the elderly patient.

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## **S23: Delirium in Old Age: From Prevention to Intervention**

### **Overview of the symposium**

Luis Cortez Pinto

With the ageing of the population, there is a growing number of patients with neurocognitive disorder and suffering from acute diseases that may develop delirium.

Delirium in older adults is a common, under-recognized and life-threatening clinical syndrome, affecting about 50% of older hospitalized patients. It can also be present in up to 40% of nursing home residents.

This syndrome etiology is usually multifactorial, commonly resulting from a combination of physiological illness and pre-existing risk factors, such as dementia and frailty.

The first step in delirium management is an accurate diagnosis, using brief screening tools, followed by a careful evaluation and management of reversible causes and modifiable risk factors.

Delirium can often be preventable, being the nonpharmacological approaches, focused on risk factors, the most effective strategies.

To discuss these issues, the present session has the participation of well-known clinical and researchers in this field, representing not only the Portuguese Psychogeriatric Association (APG) but also the European Association of Geriatric Psychiatry (EAGP).

### **Delirium and Frailty**

Lia Fernandes

With the worldwide growing elderly population, geriatric syndromes such as delirium and frailty are becoming a major priority of study.

While frailty is a state of increased vulnerability as a consequence of cumulative decline in several physiological systems with chronic course and progressive decline, delirium is characterized by an acute onset, attention and cognition changes and tending to fluctuate in severity with organic etiology.

These syndromes seem to be two distinct clinical geriatric conditions, but in vulnerable elderly people, both can appear simultaneously in response to a stressor. Delirium and frailty are multifactorial, with common risk factors (e.g. advanced age and disease status) and potentially with the same causative mechanisms (e.g. inflammation and poor nutrition).

In the elderly, both delirium and frailty have been associated with a high prevalence of adverse outcomes, particularly mortality, functional decline and disability, with significant health and societal costs.

Despite these shared characteristics, the relationship between delirium and frailty is not currently fully understood. Some studies have concluded that frailty may be an independent risk factor for delirium, and that delirium may precipitate or worsen frailty. In fact, both syndromes may contribute to a cascade of adverse outcomes.

### **Delirium in Hospital Setting**

Manuel Coroa

A significant proportion of the elderly patients admitted to the medical wards have psychiatric co morbidities, with dementia, depression and delirium being highly prevalent and acting as specific risk factors for morbidity and mortality.

At our Coimbra University Hospital Center, at the past, mental health care to inpatients has been provided by the emergency psychiatric team. However, this type of service has several important limitations, including the lack of continuity of care, difficulties regarding interaction with the ward staff and poor quality of clinical notes.

Thus, the Psychogeriatric Unit created a new Liaison Old Age Psychiatry (LOAP) Service in order to initiate a consistent project that focus on psychiatric disturbances occurring in elderly inpatients at medical wards.

During three months of activity our LOAP service has evaluated 36 patients (accounting a total of 88 observations), with a mean age of 78.9, 53% of them females. Standardised psychiatric evaluation and data collection has been using MMSE, CAM and the GDS.

Delirium (52.7%), Depression (33.3%) and Dementia (22.2%) were the most common psychiatric diagnosis. Patients presenting with

delirium had a more severe psychiatric symptomatology (mean CGI=5.5), had longer hospitalizations and required more subsequent observations.

### **Delirium in Nursing Home**

#### Armin von Gunten

Delirium is highly prevalent in nursing homes. In this setting, it remains under-recognized and undertreated. Many elderly with a non-detected delirium leave the hospital and are admitted to a nursing home before the signs of delirium have disappeared. The evolution of a delirium and its determinants in nursing homes is not well known. Delirium is associated with increased morbidity, mortality, and health services utilization. Thus, early risk factor identification for preventive interventions is crucial in nursing homes. Systematic diagnostic measures considering both an etiological and syndrome level allow for the establishment of an adequate treatment plan. Focusing on etiological factors is paramount. However, non-pharmacological approaches are usually required and particularly important in the elderly. Psychotropic drugs are less specific and will be used as add-ons if required. Thus, delirium treatment involves multiple lines of action and is therefore multidisciplinary. This talk will cover such topics considering possible specific aspects related to its occurrence in nursing homes.

### **Delirium Prevention**

#### Horácio Firmino

Despite being a common and potentially reversible cause of behavioural disturbance, delirium has been largely ignored by health service planners and practitioners, which inadvertently aggravate and increase its incidence amongst the elderly, leading to more expensive and longer hospitalization periods, as well as worse prognosis.

To reduce the risk of developing delirium is important to reduce the risks which are known modifiable: use of eyeglasses and hearing aids, provision of orienting information (as calendars and clock), objects that people have in their home, early mobilization, correction of dehydration, modification of unnecessary noise and stimuli, promotion of a good sleep hygiene and prevent urinary catheters and physical restraint.

## **S24: Geriatric Psychiatry in Portugal - Current issues at a glance**

*(This program will be presented in Portuguese)*

Luiz Cortez Pinto

There is a growing number of patients developing mental disorders in old age, challenging healthcare professionals with a myriad of problems that typically arise in this stage of life.

This Symposium organized by Associação Portuguesa de Gerontopsiquiatria (Portuguese Psychogeriatrics Association) offers a selection of themes debated by its members in this field, inviting professionals to share "at a glance" examples of current clinical research in the field of psychogeriatrics done in our country, healthcare provided in a reference center in Lisbon and challenges of Forensic Sciences in Old Age individuals in context of security wards and prisons.

In recent years there has been a gradual aging of the population, along with an increase in the average life expectancy, contributing to the growth of mental disorders in the geriatric population and the need to develop specialized multidisciplinary healthcare in the area of Psychogeriatrics.

Our Psychogeriatrics Department at Lisbon Psychiatry Hospital (Centro Hospitalar Psiquiátrico de Lisboa) currently offers care by the following features: dedicated inpatient unit, cognitive stimulation day care unit, outpatient Geriatric Psychiatry unit, Neuropsychology Unit, Patient and Caregiver Psychology Care.

The team, through a biopsychosocial multidisciplinary approach, evaluates the patient in the acute phases, designing a treatment project, in order to optimize the health, care and social integration of the patient in the family and community structures.

The inpatient unit is intended for patients who are over 65 years old with acute, uncontrollable psychiatric illness and / or severe behavioral changes. The day care unit's goal is to offer personalized care designed to improve or maintain performance skills in cognitive, psychosocial and daily life activities in a population with cognitive and functional deficits, in order to promote functional autonomy and alleviate progressive cognitive decline.

In this Session we will also present our current inpatient demographics and the new programs in action like the "return home nursing care program" now in application, and the future service expansion plans.

### **Challenges of gerontopsychiatry in forensic psychiatry (security and prison wards)**

Catarina Pinto Ferreira, Manuel Cruz, Fernando Vieira, Paulo Ferreira

Ageing is a natural and inevitable process affecting every living system. In the human being, it is associated with physical, psychological and social changes, making the elderly a specific vulnerable group. There is a global tendency for population ageing, which brings several problematic consequences, such as an increase of chronic diseases prevalence (including dementia) and higher financial costs for governments. This presentation aims to review the impact of such issue in forensic settings, namely in prisons and security wards. Given the previous unhealthy life styles of individuals and the higher deterioration associated with the exposure to forensic setting, 50 years is the cut off age for considering an individual as an elderly person in a forensic setting. Some evidence suggests a rise in the proportion of elderly individuals in prisons, little data being available regarding security wards. There are no specialized geriatric psychiatric forensic structures in Portugal and more studies are needed in order to specify which are the staff difficulties and the elderly needs in order to adapt forensic settings to this subpopulation. This may include better accessibility facilities, the involvement of a multidisciplinary specialized team, proper medical and security approach and the emergence of specific socio-occupational programmes.

### **The prevalence of dementia and late-life depression in Portugal: research must contribute to service planning**

Manuel Gonçalves-Pereira

There is recent data on the prevalence of dementia and late-life depression in Portugal using, for the first time in Europe, the 10/66 Dementia Research Group (DRG) methods. Two catchment areas were defined in the south of Portugal where all people aged 65 years and over were assessed (n = 697, urban area; n = 708 rural area).

Reported community prevalence rates were 3.7% (95% CI 3.0-5.0) for DSM-IV dementia, 9.2% (95% CI 7.8-10.9) for 10/66 DRG dementia (Gonçalves-Pereira et al., 2017). The discrepancy between these two estimates suggests potential underestimation using the DSM-IV approach, calling for more validity studies in the European context. Despite non-generalizability at national level, if we use the 10/66 DRG prevalence rate to update the current estimates of community-dwelling people with dementia in Portugal, we can calculate around 206,122 persons.

Regarding late-life depression, prevalence rates were 4.4 (95% CI 3.5-5.6) for ICD-10 depression and 13.0 (95% CI 11.2-15.0) for sub-syndromal depression (Gonçalves-Pereira et al., 2019). In sub-syndromal depression, current evidence supports non-pharmacological interventions in reducing the incidence of clinically significant conditions and improving quality of life.

In conclusion, the prevalence of dementia and late-life depression varies depending on the criteria used for assessment. Regardless of this disparity, both conditions and the associated disability pose a heavy burden on individuals and society. In this talk, the author will discuss how this kind of epidemiological evidence may help planning efficient, integrated services, where the role of task-sharing strategies involving primary care must not be neglected.

Gonçalves-Pereira, M., Cardoso, A., Verdelho, A., Alves da Silva, J., Caldas de Almeida, M., Fernandes, A., Raminhos, C., Ferri, C. P., Prina, A. M., Prince, M. and Xavier, M. (2017) 'The prevalence of dementia in a Portuguese community sample: a 10/66 Dementia Research Group study', *BMC Geriatrics*, 17(1), p. 261. doi: 10.1186/s12877-017-0647-5.

Gonçalves-Pereira, M., Prina, A. M., Cardoso, A. M., da Silva, J. A., Prince, M. and Xavier, M. (2019) 'The prevalence of late-life depression in a Portuguese community sample: A 10/66 Dementia Research Group study', *Journal of Affective Disorders*, 246, pp. 674–681. doi: 10.1016/j.jad.2018.12.067.

## S25: Galician Research Network in Dementia (REGIDEM)

(This program is a part of the SEPG track and will be presented in Spanish)

### Early detection and evolution of age-related cognitive decline in people attending primary care centers. The COMPOSTELA aging study.

Carlos Spuch, Arturo Pereiro, María Muiño Filgueira, Sonia Valladares Rodríguez

The aim of this contribution is to present the main results of the COMPOSTELA aging study on early detection and evolution of cognitive decline in people attending primary care centers with subjective cognitive complaints devoted to identify the cognitive continuum staging of cognitive decline.

• Facal D, Valladares-Rodríguez S, Lojo-Seoane C, Pereiro AX, Anido-Rifón L, Juncos-Rabadán O. 2019. Machine learning approaches to studying the role of cognitive reserve in conversion from mild cognitive impairment to dementia. *Int J Geriatr Psychiatry*. Mar 10. doi: 10.1002/gps.5090.

• Fuku N, Díaz-Peña R, Arai Y, Abe Y, Zempo H, Naito H, Murakami H, Miyachi M, Spuch C, Serra-Rexach JA, Emanuele E, Hirose N, Lucia A. 2017. Epistasis, physical capacity-related genes and exceptional longevity: FNDC5 gene interactions with candidate genes FOXO3 and APOE. *BMC Genomics*. Nov 14; 18(Suppl 8):803. doi: 10.1186/s12864-017-4194-4.

• Rivas Costa C, Fernández Iglesias MJ, Anido Rifón LE, Gómez Carballa M, Valladares Rodríguez S. 2017. The acceptability of TV-based game platforms as an instrument to support the cognitive evaluation of senior adults at home. *PeerJ* 5:e2845 <https://doi.org/10.7717/peerj.2845>

• Spuch C, Antequera D, Pascual C, Abilleira S, Blanco M, Moreno-Carretero MJ, Romero-López J, Ishida T, Molina JA, Villarejo A, Bermejo-Pareja F, Carro E. 2015. Soluble Megalin is Reduced in Cerebrospinal Fluid Samples of Alzheimer's Disease Patients. *Front Cell Neurosci*. Apr 15; 9:134. doi: 10.3389/fncel.2015.00134

• Valladares-Rodríguez S, Pérez-Rodríguez R, Anido-Rifón L, Fernández-Iglesias M. 2016. Trends on the Application of Serious Games to Neuropsychological Evaluation: A Scoping Review. *Journal of Biomedical Informatics*. 64: 296-319.

• Valladares-Rodríguez S, Perez-Rodríguez R, Facal D, Fernandez-Iglesias MJ, Anido-Rifón L, Mouriño-García M. 2017. Design process and preliminary psychometric study of a video game to detect cognitive impairment in senior adults. *PeerJ* 5:e3508 <https://doi.org/10.7717/peerj.3508>

### Early detection of cognitive impairment through gamification techniques, machine learning and ICT tools

Sonia Valladares Rodríguez

This talk presents knowledge about the application of serious games and data analysis to neuropsychological assessment. In particular, we are developing a set of video games to assess episodic memory, attention, executive functions, among other cognitive areas. The main objective is to study the possibility that serious games can be used as a valid and reliable evaluation tool, in the same way as current neuropsychological tests, and eventually, contribute to the early detection of mild cognitive impairment and Alzheimer's disease.

• Facal D, Valladares-Rodríguez S, Lojo-Seoane C, Pereiro AX, Anido-Rifón L, Juncos-Rabadán O. 2019. Machine learning approaches to studying the role of cognitive reserve in conversion from mild cognitive impairment to dementia. *Int J Geriatr Psychiatry*. Mar 10. doi: 10.1002/gps.5090.

• Fuku N, Díaz-Peña R, Arai Y, Abe Y, Zempo H, Naito H, Murakami H, Miyachi M, Spuch C, Serra-Rexach JA, Emanuele E, Hirose N, Lucia A. 2017. Epistasis, physical capacity-related genes and exceptional longevity: FNDC5 gene interactions with candidate genes FOXO3 and APOE. *BMC Genomics*. Nov 14; 18(Suppl 8):803. doi: 10.1186/s12864-017-4194-4.

• Rivas Costa C, Fernández Iglesias MJ, Anido Rifón LE, Gómez Carballa M, Valladares Rodríguez S. 2017. The acceptability of TV-based game platforms as an instrument to support the cognitive evaluation of senior adults at home. *PeerJ* 5:e2845 <https://doi.org/10.7717/peerj.2845>

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• Valladares-Rodríguez S, Pérez-Rodríguez R, Anido-Rifón L, Fernández-Iglesias M. 2016. Trends on the Application of Serious Games to Neuropsychological Evaluation: A Scoping Review. *Journal of Biomedical Informatics*. 64: 296-319.

• Valladares-Rodríguez S, Perez-Rodríguez R, Facal D, Fernandez-Iglesias MJ, Anido-Rifón L, Mouriño-García M. 2017. Design process and preliminary psychometric study of a video game to detect cognitive impairment in senior adults. *PeerJ* 5:e3508 <https://doi.org/10.7717/peerj.3508>



## In vitro methods for the diagnosis or prognosis of neurodegenerative disorders

We will present the new patent (EP19382013) refers to the medical field. Particularly, the invention is focused on an in vitro method for the diagnosis or prognosis of neurodegenerative disorders. The method comprises measuring the level of expression or the concentration level of at least a lipoprotein receptor-related protein (LRP) or a fragment thereof. We will present the new data about the developing of new tool for the early diagnosis of Alzheimer's disease based on biosensor with nanoparticles associated to new potential biomarkers.

- Facal D, Valladares-Rodríguez S, Lojo-Seoane C, Pereiro AX, Anido-Rifón L, Juncos-Rabadán O. 2019. Machine learning approaches to studying the role of cognitive reserve in conversion from mild cognitive impairment to dementia. *Int J Geriatr Psychiatry*. Mar 10. doi: 10.1002/gps.5090.
- Fuku N, Díaz-Peña R, Arai Y, Abe Y, Zempo H, Naito H, Murakami H, Miyachi M, Spuch C, Serra-Rexach JA, Emanuele E, Hirose N, Lucia A. 2017. Epistasis, physical capacity-related genes and exceptional longevity: FNDC5 gene interactions with candidate genes FOXO3 and APOE. *BMC Genomics*. Nov 14; 18(Suppl 8):803. doi: 10.1186/s12864-017-4194-4.
- Rivas Costa C, Fernández Iglesias MJ, Anido Rifón LE, Gómez Carballa M, Valladares Rodríguez S. 2017. The acceptability of TV-based game platforms as an instrument to support the cognitive evaluation of senior adults at home. *PeerJ* 5:e2845 <https://doi.org/10.7717/peerj.2845>
- Spuch C, Antequera D, Pascual C, Abilleira S, Blanco M, Moreno-Carretero MJ, Romero-López J, Ishida T, Molina JA, Villarejo A, Bermejo-Pareja F, Carro E. 2015. Soluble Megalin is Reduced in Cerebrospinal Fluid Samples of Alzheimer's Disease Patients. *Front Cell Neurosci*. Apr 15; 9:134. doi: 10.3389/fncel.2015.00134
- Valladares-Rodríguez S, Pérez-Rodríguez R, Anido-Rifón L, Fernández-Iglesias M. 2016. Trends on the Application of Serious Games to Neuropsychological Evaluation: A Scoping Review. *Journal of Biomedical Informatics*. 64: 296-319.
- Valladares-Rodríguez S, Perez-Rodríguez R, Facal D, Fernandez-Iglesias MJ, Anido-Rifón L, Mouriño-García M. 2017. Design process and preliminary psychometric study of a video game to detect cognitive impairment in senior adults. *PeerJ* 5:e3508 <https://doi.org/10.7717/peerj.3508>

# Free Communications

## FC1: Depression (Session 1)

### Cognitive impairment, frailty, quality of life and Geriatric Depression Scale (GDS) 5 and 15 items version in elderly users of Primary Care at risk of geriatric depression in Valdivia, Chile.

Cristobal Heskia, Vergara Heskia, Daniela Urrutia, Jorge Santander, Rodrigo Aguirre, Alexander Wenner

Late life depression (LLD) is a prodromal symptom and a potential risk factor for mild cognitive impairment (MCI) and dementia. This study has a descriptive observational design and consists in a self-applied questionnaire that includes a variety of screening tests including geriatric depression (GDS-5 and GDS -15), frailty (Frail test) and quality of life (WHOQOL-BREF) and cognitive impairment (MoCA). Adults over the age of 60 able to read, write, give consent and not impeded by visual or auditive impairment in the Jorge Sabat and Las Animas Primary Care Centre waiting rooms (Valdivia, Chile) were included. The MoCA scale has recently been validated in Santiago, Chile and indicates that mild cognitive impairment is probable with a score equal to 20 points and dementia is probable under 20 points in conjunction with dependency, defined as a Pfeffer score equal to or greater than 6 points. The data obtained was input to an excel database, analyzed via Epi-info and shows preliminary results from the 136 elderly users that were surveyed.

In total 31 individuals (22, 8%) scored at risk for depression by the GDS-15, 25 (18, 4%) of moderate intensity and 6 (4, 4%) severe. The prevalence in the sample increases 43 individuals (31, 6%) by GDS-5 criteria. Of these, 58, 1% is under the age of 70, 76, 7% is female, 62, 8% has memory complaints, and 58, 1% score less than 21 on the MoCA test. In a comparison between users with and without risk of depression, those with risk of depression are more likely to have subjective memory complaints ( $\chi^2=8.89$ ;  $p=.003$ ), worse quality of life ( $\chi^2=13.66$ ;  $p=.0002$ ), less satisfaction with their health status ( $\chi^2=8.21$ ;  $p=.004$ ), more frailty ( $\chi^2=13.57$ ;  $p=.0002$ ) and polypharmacy ( $\chi^2=4.47$ ;  $p=.034$ ). Regarding patients with a risk of depression, 7% meet the criteria for MCI and 2, 3% with criteria for possible dementia. No significant differences were observed for age, gender and MoCA scores between both groups of depressed and no depressed users of Primary Care.

1. Weisenbach S.L., Boore L.A., Kales H.C. Depression and cognitive impairment in older adults. *Curr Psychiatry Rep* (2012) 14:280-288.
2. Gómez-Angulo C, Campo-Arias Adalberto. Escala de Yesavage para depresión geriátrica (GDS-15 y GDS-5): estudio de la consistencia interna y estructura factorial. *Univ. Psychol* (2011) 10:735-743.

### A five-year cohort study to compare the cognitive decline in older adults with bipolar disorder and those with major depressive disorder

Chih-Chiang Chiu, Hsing-Cheng Liu, Mong-Liang Lu, Chun-Hsin Chen, Ching-Jui Chang, Wei-Che Chiu, I-Wen Sun, Shen-Ing Liu

Backgrounds: Bipolar disorder (BD) and major depressive disorder (MDD) are associated with higher risk of cognitive impairment and dementia in older adults. Cross-sectionally, older adults with BP have been found to be more impaired across all cognitive domains compared to those with MDD. This study was to investigate whether older adults with BD had more cognitive decline compared to those with MDD after 5-year follow-up.

Methods: Older adults ( $\geq 60$  years) with BD or MDD were enrolled. Participants had to be in euthymic state, defined as 17-item Hamilton depression rating scale (HDRS) score  $\leq 10$  and Young Mania Rating Scale  $\leq 7$  for 4 consecutive weeks, and Mini-Mental State Examination (MMSE) score  $\geq 17$  and not dementia. After enrolment, they received a series of cognitive tests, laboratory exam, and structured questionnaires. Cognitive function was evaluated through a battery of tests assessing verbal memory, attention/speed, visuospatial function, verbal fluency, and cognitive flexibility. The same evaluation was performed again 5 years after baseline assessment.

Results: Four-two BD participants and 66 MDD participants had completed the baseline and follow-up assessment. Only the completers were analysed. At baseline, the BD participants were younger ( $66.7 \pm 6.0$  vs.  $62.6 \pm 4.7$  y/o) and had longer duration of illness ( $9.1 \pm 10.0$  vs.  $25.2 \pm 14.8$  years) compared to MDD participants, but with similar scores of MMSE and HDRS. After controlling for potential confounders, including age, gender, education, baseline MMSE score, and duration of illness, body mass index, levels of homocysteine and folate, the MMSE score at year 5 were not different between these two groups. Eight representative cognitive parameters were tested separately. BD participants had poor performance at delayed recall and categorical naming tasks compared to MDD participants after adjusting for confounders.

Conclusion: Although the decline of global cognitive function was not different in older adults with BD and those with MDD after 5-year follow-up, decline of verbal fluency and verbal memory was more prominent in older adults with BD. We have to

pay more attention in the cognitive performance of older people with BD who may have higher risk of cognitive decline than patients with geriatric depression.

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Gildengers, A.G., et al. (2012). *Cognition in older adults with bipolar disorder versus major depressive disorder*. *Bipolar Disorder*, 14, 198-205.

Samamé, C., Martino, D.J., and Strojilovich, S.A. (2013). *A quantitative review of neurocognition in euthymic late-life bipolar disorder*. *Bipolar Disorder*, 15, 633-44.

Terachi, S., Yamada, T., Pu, S., Yokoyama, K., Matsumura, H., Kaneko, K. (2017). *Comparison of neurocognitive function in major depressive disorder, bipolar disorder, and schizophrenia in later life: A cross-sectional study of euthymic or remitted, non-demented patients using the Japanese version of the Brief Assessment of Cognition in Schizophrenia (BACS-J)*. *Psychiatry Research*, 254, 205-210.

## **Trends in depressive symptoms of older adults in the Czech Republic**

Pavla Cermakova, Matěj Kučera, Katrin Wolfova

**Background:** According to the World Health Organization, the occurrence of depression is increasing in the entire population, including older adults. It is, however, unclear whether the true prevalence is increasing or whether it is just better detected.

**Aim:** To study trends in the prevalence of depressive symptoms in older adults in the Czech Republic.

**Methods:** We used data from the Czech arm of the population-based study Survey on Health, Aging and Retirement in Europe (SHARE). We examined differences between people over 65 years of age who participated in the survey in 2006/2007 (cohort 1) and in 2015 (cohort 2). Depressive symptoms were defined in two ways: 1) by reaching 4 or more points on the EURO-D scale and 2) by the EURO-D scale and/or use of drugs against depression or anxiety. We used binary logical regression and estimated odds ratio (OR) with a 95% confidence interval (CI) to study the association of cohort 2 (relative to cohort 1) and depressive symptoms, step-wise adjusting for covariates.

**Results:** The study included 1107 participants in cohort 1 and 2872 in cohort 2 (mean age 72 years, 58 % women). When defining depressive symptoms using the EURO-D scale, their prevalence was 28% in cohort 1 and 22% in cohort 2 (relative decrease by 21%). Cohort 2 was associated with a lower likelihood of depressive symptoms in the age-sex adjusted model (OR 0.75; 95% CI 0.64-0.88). This association weakened but remained statistically significant after further controlling for all sociodemographic and clinical covariates (OR 0.77; 95% CI 0.63-0.94). When depressive symptoms were operationalized by the EURO-D scale or use of drugs, their prevalence was 30% in cohort 1 and 26% in cohort 2 (relative decrease by 13%). The association of cohort 2 with a lower likelihood of depressive symptoms was smaller in magnitude (OR 0.84; 95% CI 0.72-0.99, adjusted for age and sex).

**Conclusions:** Our study suggests that the prevalence of depressive symptoms in older adults has decreased in the Czech Republic, which is only partly explained by better treatment of depression.

## **Mortality and morbidity in very old persons with subsyndromal depression: An eight-year prospective study**

Mikael Ludvigsson, Jan Marcusson, Ewa Wressle, Anna Milberg

**Objectives**

Subsyndromal depression (SSD) or subthreshold depression is a common affective condition that has received increased attention in the literature during the last decade (Meeks et al., 2011, Ludvigsson, 2018). The concept of SSD can be described as depressiveness below the threshold of what is called a syndromal or a major depressive episode. Both mortality and morbidity are elevated for persons with SSD compared with non-depression (ND) in those of younger ages (Cuijpers et al., 2013, Ayuso-Mateos et al., 2010), but longitudinal studies are scarce for very old persons (Hajek et al., 2017, Han et al., 2008, Houtjes et al., 2014). The aim of this study was therefore to compare the mortality and morbidity of persons with SSD and ND in very old persons.

**Methods**

An eight-year prospective population-based study was undertaken on 85-year-old persons in Sweden. Data were collected from postal questionnaires and clinical assessments at baseline, after one, five and eight years. Depressiveness was measured with GDS-15 (Geriatric Depression Scale), and the results were classified into ND, SSD and syndromal depression. Mortality was investigated using multivariable cox regressions, and variables of morbidity were investigated using linear mixed models.

**Results**

For persons with SSD compared with ND, mortality was elevated in the univariate regressions, but this association vanished when controlling for relevant covariates. Morbidity was elevated regarding Basic ADL (Activities of Daily Living), I-ADL (Instrumental ADL), loneliness, self-perceived health and depressiveness for persons with SSD compared to ND, whereas

cognitive speed, executive functions and global cognitive function were not significantly impaired when adjusting for covariates.

#### Conclusions

SSD among very old persons is longitudinally associated with elevated morbidity but not mortality, when controlling for relevant covariates. Considering the high prevalence of SSD and the demographic development of increasing numbers of very old people, the findings highlight the need to develop clinical and societal strategies to prevent SSD and associated negative outcomes. Regardless of whether SSD is considered as pathology or normality, such interventions could possibly improve quality of life and reduce morbidity as well as the need of healthcare in many old people.

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## Health profiles, hospitalisations and emergency department visits in late-life depression and associations with dementia and self-harm

Simone Reppermund, Theresa Heintze, Preeyaporn Srasuebku, Julian Trollor

**Background:** Late-life depression (LLD) is a major public health burden and has been linked to dementia and deliberate self-harm. The growing ageing population, along with the increasing prevalence of LLD, has significant implications for the planning and equipping of health services to meet the needs of affected individuals. Mapping the epidemiology, health profile and service use associated with LLD will assist to improve the detection and management of the disorder and offers an opportunity to clarify its association with dementia and self-harm.

This study characterises the acute health service use profile of people with LLD including hospital admissions and emergency department (ED) presentations and transitions to dementia and self-harm.

**Methods:** Linked hospital admissions and ED records in NSW, Australia between 2001 and 2016 were used to describe the health profile and acute health service use in individuals with a hospital record of depression aged 65 and above. Comparisons with a sample aged 65 and above with other mental health disorders as well as with published general population data will be presented.

**Results:** The sample included 69,445 individuals with LLD comprising 59.6% females. The majority (69.2%) were living in major cities. The mean age of those being hospitalised for LLD was 79.2 (SD 8.4) and the mean age at death was 83.1 (SD 8.2). During the study period, the sample had on average 11 hospital admissions and 4 ED visits after their admission for LLD. Frequent comorbid health conditions included heart conditions (50%), diabetes (24.5%), cancer (22.9%) and pulmonary disease (21.9%). Almost 20,000 individuals (28.3%) had a subsequent admission for dementia and over 3,000 individuals (4.7%) had a subsequent admission for deliberate self-harm.

**Conclusions:** The analysis of linked health service data allows us to develop a sound epidemiological and health service evidence base that will inform our understanding of pathways through the service system taken by people with LLD and uncover differences between individuals who develop dementia and those who self-harm. The findings of this study will improve our understanding of acute health-service use, trajectories, comorbidities and their predictors in LLD.

## Tailored internet-delivered psychotherapy for older adults with depression: a randomized controlled trial.

Mikael Ludvigsson, Lise Bergman Nordgren, Gerhard Andersson

**Objectives:** Depression is common in older adults and associated with negative consequences such as increased morbidity, mortality, functional decline and higher healthcare costs (Fiske et al., 2009). Psychological treatments have support in the literature but are rarely offered for old persons as an alternative or complement to medication (Kok and Reynolds, 2017). Limited resources, ageist perceptions and other social barriers might explain this pattern of treatment choices. Alternative modes of treatment delivery, such as internet-delivery, might be one way to increase the access to psychotherapy for older adults. So far, few studies have investigated internet-delivered Cognitive Behavioral Therapy (iCBT) to older adults (Titov et al., 2016), and to our knowledge only one have investigated tailored iCBT (Silfvernagel et al., 2017), in which different treatment chapters are chosen to individualize the protocol for each patient. The aim of this study was to test the effects of individually tailored iCBT for older adults with depression.

**Methods:** The study was a randomized controlled trial investigating treatment effects compared with an active control condition.

**Participants:** 101 self-recruited participants, aged 65 to 88 years, were included. The intervention was a 10-week tailored iCBT protocol consisting of 6-10 pre-defined modules, tailored to patient's problems, needs and preferences. Symptoms of depression and anxiety, life quality and cognitive impairment were assessed through self-reported measures together with an online test of cognitive flexibility.

**Results:** Participants in the treatment group benefitted more than participants in the control condition on most measures with low to moderate between-group effect-sizes (Cohens d: BDI-II 0.49, PHQ-9 ns, GDS-15 0.45, for example). Self-reported cognitive impairment improved during treatment, and neither cognitive impairment nor cognitive rigidity prevented treatment effect.

**Conclusion:** Depressed older adults seem to benefit from tailored iCBT, compared with an active control condition. This supports the recommendation of psychotherapy as an initial treatment choice for mild to moderate depression, and indicates that tailored iCBT could be considered as a feasible mode of psychotherapy for older adults. Neither self-reported cognitive impairment nor cognitive rigidity prevented a positive treatment effect, a finding that argues against using these variables as general contraindications for psychological treatment.

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## FC2: New Therapeutics

### **Efficacy of a D-amino acid oxidase (DAO) inhibitor in the treatment of subjects with early phase Alzheimer disease**

Tzung-Jeng Hwang, Ming-Jang Chiu, Ta-Fu Chen, Yufeng Jane Tseng

Background: Attenuation of N-methyl-D-aspartate receptor (NMDAR)-mediated neurotransmission may result in loss of neuronal plasticity and cognitive deficits in the aging brain, which might account for clinical deterioration and brain atrophy. One way to enhance NMDAR activation is inhibiting the activity of D-amino acid oxidase (DAO), a flavoenzyme of peroxisomes responsible for degrading D-serine and D-alanine, and thereby raising levels of the D-amino acids that are the neurotransmitters for the coagonist site of the NMDAR. The study aimed to investigate whether a DAO inhibitor, RS-D7 prodrug, could improve the cognitive function in subjects with amnesic mild cognitive impairment (aMCI) or early Alzheimer disease (AD).

Methods: This is an ongoing randomized, open-label, proof-of-concept study with the plan to recruit 42 subjects with aMCI or AD, who will be randomized to receive 40, 80 or 120 mg/day RS-D7 prodrug treatment for 24 weeks. Alzheimer's Disease Assessment Scale-cognitive subscale (ADAS-Cog) (the primary outcome), Clinical global impression (CGI) and additional cognitive assessment were measured every 8 weeks.

Results: The preliminary analysis on 17 subjects with aMCI or early AD showed that, at the end point, RS-D7 prodrug significantly improve the ADAS-Cog ( $p=0.027$ ), word listing ( $p=0.004$ ) and CGI. There was a dose-response relationship, with 160 mg/day having the best improvement.

Conclusions: The preliminary results suggest RS-D7 prodrug may be efficacious for cognitive and functional improvement in subjects with aMCI or early AD.

### **Clinical impact of antipsychotic and benzodiazepine reduction: Findings from a multicomponent psychotropic reduction program within long-term aged care**

Daniel Hoyle, Ivan Bindoff, Lisa Clinnick, Gregory Peterson, Juanita Westbury

Introduction: Antipsychotics and benzodiazepines are widely used in long-term aged care despite modest efficacy and risk of adverse effects. Whilst interventions to reduce the use of these medications have been developed, clinical outcomes remain under-reported. Concern that symptoms may worsen is a potential barrier to dose reduction. To fill this evidence gap, we determined the clinical impact that dose reduction had within the Reducing the Use of Sedatives (RedUSe) program (Westbury et al. 2018).

Methods: RedUSe involved 150 Australian homes and comprised: auditing and benchmarking of prescribing, education, and multidisciplinary sedative reviews. Residents ( $n=206$ ) taking antipsychotics and/or benzodiazepines regularly, without a severe psychiatric illness, were recruited from 28 participating homes. Changed behaviours (Neuropsychiatric Inventory, Cohen-Mansfield Agitation Inventory (CMAI)), social withdrawal (Multidimensional Observational Scale for Elderly Subjects-withdrawal subscale) and quality of life (QoL) (Assessment of Quality of Life-4D) were measured at baseline and four months through psychometric testing of nursing staff. Associations between changes in these outcomes and percentage changes in the antipsychotic and benzodiazepine doses were investigated using regression models.

Results: Follow-up data were available for 179 residents. Thirty of 83 residents (36%) taking an antipsychotic and 42 of 118 residents (36%) taking a benzodiazepine at baseline had reductions in their antipsychotic and benzodiazepine dose; predominantly cessations. There was no evidence of worsening psychometric measures. Dose reduction was associated with small, albeit non-significant, improvements in changed behaviour - particularly less physically non-aggressive behaviour (e.g. wandering and restlessness) with both drug groups (-0.36 points per 10% reduction in antipsychotic dose, -0.17 per 10% reduction in benzodiazepine dose) and verbally agitated behaviour (e.g. calling out) with benzodiazepine reduction (-0.16 per 10% dose reduction), as measured with the CMAI. Although not significant, antipsychotic reduction was associated with improved QoL (0.01 per 10% dose reduction) and social engagement (-0.16 per 10% dose reduction).

Discussion: Antipsychotic and benzodiazepine dose reduction was not associated with deterioration in behaviours, social withdrawal or QoL. In fact, trends towards improved agitation with antipsychotic and benzodiazepine dose reduction, and QoL and social engagement with antipsychotic dose reduction, were identified as potential benefits. These outcomes require confirmation in larger prospective studies.

Westbury, JL, Gee, P, Ling, T, Brown, DT, Franks, KH, Bindoff, I, Bindoff, A & Peterson, GM 2018, 'RedUSe: Reducing antipsychotic and benzodiazepine prescribing in residential aged care facilities', *Medical Journal of Australia*, vol. 208, no. 9, pp. 398-403.



## **"A worrying trend": The use of 'prn' (as needed) psychotropic medication in Australian Long term care - and the impact of a multi-strategic interdisciplinary program on 'prn' use.**

Juanita Westbury, Tristan Ling, Peter Gee, Gregory Peterson, Aidan Bindoff

**Background:** The RedUse (Reducing Use of Sedatives) program was delivered to 150 Australian long-term care homes during 2014-2016 (Westbury et al, 2018). The 6-month intervention involved multiple strategies (e.g. audit, awareness raising and staff education) and interdisciplinary psychotropic review. The prescribing of 'prn', or 'as required', psychotropics is not recommended as staff ultimately decide when these medications are used and can result in excessive dosing.

**Aims:** 1. To assess the baseline charting of 'prn', psychotropic medication and 2. To evaluate the impact of RedUse on 'prn' prescribing.

**Methods:** Baseline measures of prn psychotropic prescribing (antipsychotics, benzodiazepines and antidepressants) were taken to measure overall prevalence. Measures were compared between baseline and 6-months, with linear mixed effects models applied.

**Participants:** Residents from 143 long-term care homes (n= 11,572) in 6 States and the A.C.T. 'Prn' prescribing data was not available for 7 out of 150 homes.

**Results:** With regards to 'prn' use, 30.1% of residents had a benzodiazepine charted. The 'prn' prescribing of anxiolytic benzodiazepines was marginally higher than that of hypnotic agents, with 19% and 16% of residents charted for these, respectively. Much of the prescribing appeared to be 'top-up dosing', with half (46%) of residents prescribed a regular daily dose of a benzodiazepine prescribed a 'prn' dose at the same time. In terms of 'prn' antipsychotic use, 10.8% of residents were prescribed a 'prn' agent. Again, a significant proportion of residents (29%) taking an antipsychotic daily were also charted for a 'prn' dose. Only 9 residents were prescribed an antidepressant (all mirtazapine) on a 'prn' basis.

Although 'prn' prescribing was not specifically targeted a significant reduction was observed in both benzodiazepine 'prn' prescribing from 30.1% to 27.8% [CI95% 25.3% -30.3%, p < 0.05] by 6 months; and antipsychotic 'prn' charting from 10.8% to 9.4% [CI95% 8.2% - 10.1%, p < 0.005] from baseline to 6-months. This translates to relative reductions in benzodiazepine and antipsychotic 'prn' prescribing of 9.2% and 8.7%, respectively.

**Conclusion:** Charting of 'prn' doses is common in Australian long-term care. The RedUse program significantly reduced 'prn' prescribing; however, increased focus is needed to address this worrying prescribing practice.

Westbury, J. L., Gee, P., Ling, T., Brown, D. T., Franks, K. H., Bindoff, I., Bindoff, A. and Peterson, G. M. (2018), RedUse: reducing antipsychotic and benzodiazepine prescribing in residential aged care facilities. *Medical Journal of Australia*, 208: 398-403. doi:10.5694/mja17.00857

## **Changing Minds in care of people with dementia in Finland. Randomised controlled trial.**

Ulla Eloniemi-Sulkava, Terhi Pesonen, Niina Savikko, Juhani Koskinen, Raimo Sulkava, Bob Woods

**Background:** In Finland, 80 percent of all long-term care residents live with dementia, and 70 to 80 percent of them exhibit at least some inappropriate behaviours. There has been increasing understanding of inappropriate behaviour from the perspective of person with dementia. Need-addressing interventions may be the most effective intervention with these persons.

**Objective:** To determine the effects of supporting staff on unmet needs behaviour, quality of life and use of psychotropic drugs of residents living with dementia.

**Setting:** Randomised, controlled intervention study (RCT).

**Data:** The study was conducted in the long-term care units (n=17) of older people in City of Espoo, Finland. The study neurologist diagnosed the residents' possible memory disorders. Out of 80 % of residents (n=233) fulfilled the study criteria, of them 177 (80 %) had unmet needs behaviours based on NPI-NH scale. The units were randomised to intervention (n=9) and control (n=8) group.

**Intervention:** The intervention (14 months) included multi-professional support for the intervention units' staff, as well as guiding them to perform person-centred, tailored care based on residents' needs. The core functions were a mentor nurse's activities, a neurologist's consultations, and tailoring meetings.

**Results:** The residents' mean age was 81 years, of them 65.3 percent female. Out of 64, 8 % had Alzheimer's disease (AD). For more than a third (36.4 %) of residents with AD, their disease involved also characters of dementia with Lewy bodies. In nearly half of the residents, the memory disorder was severe. Inappropriate behaviours were common (79.0 %) but NPI-NH scores lowered significantly during the study. Residents' depressive symptoms decreased statistically significantly, and their quality of life improved. Use of psychotropics significantly decreased, particularly in the intervention group. The intervention improved the residents' everyday life which showed in their significantly increased well-being as compared to the control group.

## FC3: Dementia

### **Pain and cognitive impairment, especially dementia among health care professionals in Spain: A survey on current practice, professional concerns on problems experienced and solutions for its improvement**

Lydia Gimenez-Llort, Maria Luisa Bernal-Ruiz, Rachel Thompson, Virginia Torres-Lista, Aida Muntsant-Soria, Pat A. Schofield

Global burden by the aging population is projected to happen in the coming decades and demands efforts to counteract its socio-economic impact but, mostly, that on the Quality of Life of patients, caregivers and families. Etiological diversity and disease complexity render 'Pain in Cognitive Impairment, especially Dementia' a health subject with clear snail effect (poor and slow diagnosis in frail elderly patients) which can benefit of a turtle effect (comprehensive multidisciplinary management) and the development of more reliable tools. COST Action TD1005 developed PAIC15, a new observation instrument that will help health and care staff to identifying and measure pain in patients with cognitive impairment, especially dementia. In the present work, we aimed to conduct a survey in Spain to estimate the implementation and use of pain scoring systems in patients with cognitive impairment/dementia and the reliability given to them. On the other hand, we also aimed to detect the current problems that Spanish health/care staff are encountering and, learning from their experience, what would help to improve its management. For this purpose, the 'Questionnaire about the use of standards/guidelines, instruments and professional's profile' designed by COST Action-TD1005 Nursing and Care-WG2 was translated into Spanish and sent online to all the hospitals registered at the Spanish National Health System, nursing homes and day care centers (2015-2017). 'Open questions' point out pain management at advanced stages of dementia and severe impairment in mental disorders as those raising concern among health professionals. Difficulties are considered mostly due to 1) low feasible and 2) time consuming tools, and they aware about poor standardization, guidelines/recommendations that, otherwise, would be helpful in front of cognitive impairment or dementia complexity and heterogeneity. There are little chances for multidisciplinary team meetings, but those who had them report high satisfaction with their knowledge and management of pain. The conclusions point at new policies based on the demonstration of the sensibility of scales that measure pain in dementia as needed to increase the confidence of the professionals on them. Efforts to establish more feasible instruments and policies together with education are key targets of our future directions in Spain.

Pain and cognitive impairment, especially dementia among health care professionals in Spain: A survey on current practice, professional concerns on problems experienced and solutions for its improvement

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### **Impact of sociodemographic factors on knowledge of dementia among family carers**

Sophie Crawley, Kirsten Moore, Elizabeth L Sampson, Victoria Vickerstaff, Cooper Claudia

**Background:** Dementia is a life limiting disease following a progressive and often prolonged trajectory. Family carers, however, often do not consider dementia to be terminal [1, 2]. As carers often become key decision makers [3], knowledge of dementia is likely to have health implications for the person with dementia, as well as the carer's psychological wellbeing [4].

**Aim:** This study aimed to explore knowledge of dementia in family carers, and examine sociodemographic factors that may contribute to dementia knowledge.

**Method:** Cross-sectional mixed methods study. We interviewed 150 family carers and administered the Dementia Knowledge Assessment Scale (DKAS - score range 0-50; higher scores reflecting greater dementia knowledge). To examine which factors predicted DKAS a linear regression analysis was performed. Factors included: health literacy, dementia severity, other experience of dementia, support group attendance, age, years of education, relationship to person with dementia, deprivation and rurality. We also performed a backwards elimination regression to identify independent factors which had the most impact on the DKAS score.

**Results:** Most carers were partners (47%) or adult children (48%) with a mean age of 63 (SD=12.1). Thirty-two percent cared for someone with severe and 43% moderate dementia. Fifty-seven percent had other personal experience of dementia, and 22% had experience of dementia through their occupation, with a mean of 16 (SD=4.0) years of education. Most carers lived in urban areas (89%) and 37% of participants were in the five most deprived population deciles. Mean DKAS scores were 34.8

(SD=7.0, range 17-48). The DKAS total score was negatively associated with carer age (coefficient -2.81, 95% CI -2.48 to -0.79;  $p = 0.001$ ), and positively associated with education (coefficient 0.162, 95% CI 0.029 to 0.541;  $p = 0.030$ ) and Health Literacy Questionnaire variables; Appraisal of health information (coefficient 0.256, 95% CI 1.327 to 5.216;  $p = 0.001$ ) and Understanding health information (coefficient 0.125, 95% CI -0.285 to 3.197;  $p = 0.101$ ).

Conclusions: Of the sociodemographic factors explored, few predicted dementia knowledge. The importance of carer age and health literacy in influencing dementia knowledge suggests that interventions which support carers identify useful and reliable information sources will have the most impact on knowledge.

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### **The effect of computerized cognitive assessment on dementia screening**

Carol Sheei-Meei Wang, Jia-Yun Wu, Kuo-Sheng Cheng, Pei-Fang Chien, Ying-Che Huang

**Introduction:** Cases of dementia have increased yearly due to the aging of the population in Taiwan. Studies show that the earlier dementia patients receive treatment and the more they join in social activities, the slower the decline of their condition. These factors reduce the long-term care costs and better maintain patients' quality of life. However, only about one quarter of dementia patients are diagnosed and receive treatment. To overcome the obstacles of receiving timely medical intervention, an easy assessment measure to assist screening patients with dementia is needed. Currently, smartphones and tablets are popular and have become a part of daily life. Therefore, in this study, Game-Based Cognitive Assessment (GBCA) is proposed and developed for early screening patients with cognitive impairment.

**Method:** GBCA is a type of an interactive game mobile APP implemented on Android and Windows platforms. It includes user background information acquisition and 13 test games in 5 main cognitive domains (visuospatial perception, attention, language, memory and executive functioning), with a total score of 100. The game scores were compared to a reference of general assessments in the clinic. In this study, valid data from 103 patients (NC=50, MCI=14, Dementia=39) have been collected, including scores of CDR, CASI, MMSE, the proposed GBCA and a questionnaire of user experience.

**Result:** The results show the highly linear correlation between GBCA and CASI ( $r$ -squared or  $r^2=0.93$ ) as well as between GBCA and MMSE ( $r^2=0.91$ ). The average scores for NC, MCI, and dementia patients are 90.2, 76.5, and 47.3, respectively. The cut-off point of GBCA of 75 results in a sensitivity 98%, specificity 85% and area under curve over 0.9. The positive predictive value is 98% and negative predictive value is 86%. The results of user experience questionnaire in NC and Dementia are good and acceptable respectively.

**Conclusion:** The study shows that the proposed GBCA is an effective and acceptable tool for dementia screening.

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**Amyloid burden and depressive phenotype trajectories in a frailty elderly population**

Ismael Conejero, Jonathan Dubois, Laure-Anne Gutierrez, Jorge Lopez-Castroman, Philippe Courtet, Audrey Gabelle

**Introduction:** Depressive symptoms and depressive disorders are associated with disability and suicide risk in patients at the early stage of Alzheimer's dementia (AD) or with cognitive disorder onset. We hypothesize that amyloid deposition in brain is related to the progression of depressive symptoms, and that amyloid may influence depressive endophenotypes in patients at risk for cognitive decline. We aimed to evaluate the relationship between the time course of depressive symptoms assessed with the geriatric depression scale (GDS) and the cortical amyloid load measured by  $\beta$ -amyloid-[18F] Florbetapir-PET in frail subjects aged 70 years and older, at-risk to develop AD.

**Methods:** 267 participants aged 70 years and older with at least one frailty criteria, including spontaneous memory complaints, limitation in one instrumental activity of daily living (IADL) or slow walking gait (<0.8 m/s) were included in the MAPT-AV45 ancillary study. They underwent Geriatric Depression Scale (GDS) assessment at inclusion, 6 months, 12 months, 24 months and 36 months of the follow-up. GDS factors were determined using Principal Component Analysis: Global life in satisfaction (factor 1), Inactivity level and Low energy (factor 2) and Low self-esteem level (factor 3). Amyloid load was measured by  $\beta$ -amyloid-[18F] Florbetapir-PET-scan.

**Results:** Analysis revealed a negative association between amyloid deposits in Hippocampus and bilateral Caudate Nucleus, and the increase of Insatisfaction and Low self-esteem levels during follow-up. High amyloid load in Pontine region showed also a protective effect toward Low self-esteem increase. In the contrary, diffuse brain amyloid deposits were associated with worsening of low self-esteem along time. No association was found between amyloid deposits in brain and Inactivity level.

**Discussion:** To our knowledge, this study is the first study to evaluate the link between amyloid deposition in brain and the evolution of depressive dimensions in patients at risk to develop AD. Our results suggest that amyloid deposits have differential effects on depressive dimensions (protective or compounding effects), depending on amyloid localization in brain. Butters, M. A., Klunk, W. E., Mathis, C. A., Price, J. C., Ziolko, S. K., Hoge, J. A., et al. (2008). *Imaging Alzheimer pathology in late-life depression with PET and Pittsburgh Compound-B*. *Alzheimer Dis. Assoc. Disord.* 22, 261–268. doi:10.1097/WAD.0b013e31816c92bf.

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## **Dementia fear: The experiences of multiple stakeholders**

Perla Werner, Natalie Ulitsa, Zumrut Alpınar Sencan, Silke Schick Tanz

**Background:** Fear is a normal emotion when facing threat. Lately, increased research and clinical attention is dedicated to the experience of dementia fear. However, little is known about different types and consequences of dementia fear.

**Objective:** To explore and characterize types and reason of dementia fears experienced by laypersons, persons with Mild Neurocognitive Disorders (MND), and their relatives.

**Methods:** Seven focus groups were conducted during 2018 and 2019 in Israel with 22 laypersons (59% female, mean age =42.4), 16 persons with MND (50% female, mean age = 80.13), and 8 of their relatives (62% female, mean age = 61.75).

Participants' experiences and opinions regarding the diagnosis of dementia, and regarding persons with dementia were elicited using an interview guide and the presentation of vignettes. Thematic content analysis was used to extract key themes.

**Findings:** Different types of fear were identified. While the most common fears among laypersons and relatives of persons with MND were receiving themselves a diagnosis of dementia, and dealing with behavioral symptoms of aggressiveness in persons with dementia, persons with MND confronted fears of becoming a burden on others and being abandoned. Different types of fear were associated with different consequences and coping strategies to deal with the source of threat.

**Conclusions:** These findings expand knowledge regarding the fears and concerns associated with dementia, and will potentially inform regarding the development of interventions and strategies to manage these experiences.

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## **Time trends in cognitive functioning: Results from two German longitudinal cohort studies on aging (AgeDifferent.de platform)**

Susanne Roehr, Alexander Pabst, Matthias Angermeyer, Michael Wagner, Wolfgang Maier, Martin Scherer, Arno Villringer, Steffi Riedel-Heller

**Background:** Recent studies provide growing evidence of a stabilization or a decrease in dementia incidence in Western high-income countries, suggesting improved cognitive capacity in later-born cohorts. We aimed to add to this growing body of literature by estimating cognitive functioning by age and birth cohort based on two cohorts from Germany, which has one of the oldest populations in the world. Investigating such changes over time helps in understanding future burden of disease and in informing policy making towards improved dementia prevention agendas.

**Methods:** Analyses were based on the AgeDifferent.de platform and included individual participant data from two pooled German longitudinal old-age cohorts (LEILA75+, AgeCoDe/AgeQualiDe). Data comprised nine follow-up assessments, spanning over 20 years from 1997 to 2017. Adjusted predictions of normalized MMSE total scores based on age were modelled for individuals born before 1920 vs. after 1920 using mixed effects linear regression models, taking gender, education, marital status, hypertension, diabetes mellitus, and depressive symptomatology into account.

**Result:** A total of 3,418 community-dwelling individuals (mean age: M = 79.8; 66.6% females) were included at baseline, being at least 75 years of age and without prevalent dementia. Mixed models revealed a significant nonlinear age effect with cognitive functioning over time in both birth cohorts (before 1920:  $\chi^2 = 628.7$ ,  $p < .001$ ; after 1920:  $\chi^2 = 261.5$ ,  $p < .001$ ). Moreover, a model including an age-by-birth cohort interaction showed that the association of age with normalized MMSE differed between birth cohorts ( $\chi^2 = 11.01$ ,  $p < .05$ ).

**Conclusion:** Later-borns showed better cognitive functioning compared to individuals born before 1920 until age 85 in two large German cohorts. After age 85, the advantage in cognitive functioning of later-borns disappeared, suggesting similar trends in cognitive decline compared to earlier-borns thereafter. The results are in line with previous studies from Western high-income countries suggesting a time trend towards improved cognitive capacity that may provide higher resilience against cognitive decline - until a certain age at least. Future studies investigating time trends in cognitive functioning in populations spanning over several generations would be useful to gain a better understanding of such trends.

**Nutriage Project: Advanced solutions for healthy ageing through nutrition in Galicia – Northern Portugal Euroregion**

Lucia Gayoso-Couse, Elena Amenedo, Enrique Arbones, Carlos Dieguez, Melchor Fernández, Miguel Martínez-Olmos, Raimundo Mateos, Rosaura Leis, Ángeles Romero, Lourdes Vazquez

The Nutriage Project's purpose is to create new and advanced solutions in order to improve the quality of life of the elderly population in Galicia – Northern Portugal Euroregion. These solutions are based in the Atlantic Diet and in recommendations about special dietary requirements for this kind of population.

This project is being executed creating a multidisciplinary, intersectoral, and collaborative cross border network composed by investigators, clinicians, nutritionists, healthcare and social services, government agents, business associations and agri-food sector companies.

This network provides a collective approach to address the determinants of health status in elderly population. It makes possible to work across structural levels, attract a diversity of investigators, service providers, companies and decision makers and it also allows studying a variety of nutrition and health factors.

The main actions developed through the project are:

1. Assessment:
  - Evaluation of food supplies, meal preparation, and feeding organization and management in nursing homes.
  - Identification of dietary habits and eating practices.
  - Nutritional status assessment in nursing home residents.
2. Design:
  - Creation of dietary recommendations based in the Atlantic Diet.
  - Development of new agri-food products with added nutrients in order to postpone functional decline.
3. Implementation and intervention:
  - These new products and recommendations will be tested in selected nursing homes in Galicia – Northern Portugal Euroregion to improve health status and wellbeing of elderly population.
4. Socio-economic impact analysis:
  - Socio-economic impact will be assessed to show advantages and disadvantages of eating changes in nursing homes and to evaluate extrapolation to other similar conditions or groups.
  - This project aims to generate capacities in R + D + i around the health-aging axis that favors the improvement of the quality of life for older people based on nutrition. The Nutriage project also pretends to reinforce the sustainability and efficiency of the socio-health system and to encourage growth and identification of new business opportunities for the agri-food industry.



## FC4: Behavioural and Psychological Symptoms of Dementia (BPSD)

### **The influence of acoustical environmental factors on the behavioral and psychological symptoms of dementia: a participatory observation study in five nursing homes in Flanders (Belgium)**

Patricia De Vriendt, Tara Vander Mynsbrugge, Francesco Aletta, Dick Botteldooren, Paul Devos, Dominique Van de Velde

**Introduction:** Behavior- and psychological symptoms of dementia (BPSD) occur in persons with dementia (PwD), influencing the quality of life (QoL) of the PwD and the caregivers. In the majority of PwD living in a Nursing Home (NH) in Flanders (Belgium) BPSD occur in the trajectory. Although BPSD are considered as a characteristic of dementia, environmental factors can prevent, reduce, activate or/and reinforce them. Acoustical aspects – as part of the environment - probably play a role in BPSD.

**Objectives:** This study aimed to explore the acoustical factors that are on the onset and progression of or – on the other hand – prevent BPSD in PwD living in a NH.

**Method:** Fifteen PwD were included in a 24/7 participatory-observation in five NHs conducted by one researcher. Field notes were taken and subsequently analysed by the team. Results were discussed between the research-team and the NH-professionals of the five NHs to support the iterative analysis-process and the constant-comparative method as has been used. Results then were described in themes.

**Results:** Factors impacting BPSD were (1) a complex sound environment (e.g. several simultaneous conversations), and (2) PwD's position to the sound-source (e.g. sitting with back to kitchen where meal is served). If they were consistently present they boosted the BPSD. On the other hand, acoustical factors that prevented BPSD were (1) familiar human voices (e.g. voice of husband), (2) the background noise (e.g. well-known music lead to a conversation, television during the night) and (3) familiar sounds (e.g. tinkle bells in the morning, soft noise of a train, kitchen noises).

**Conclusions:** Although the onset and progression of BPSD is highly individual (relying on personality and typical features of dementia) it seemed that it also depended on the interaction between personal and acoustical environmental factors. Being aware of the particular soundscape – defined as an environment of sound (or sonic environment) with emphasis on the way it is perceived and understood by the individual - enables the caregivers to actively influence this (e.g. support a recognizable sound environment) or to design the physical acoustical environment to the needs of the residents with dementia.

### **Developing a method for soundscape design for people with dementia living in nursing homes: validation of four persona**

Patricia De Vriendt, Tara Vander Mynsbrugge, Francesco Aletta, Dick Botteldooren, Paul Devos, Dominique Van de Velde

**Introduction:** Soundscapes – defined as an environment of sound (or sonic environment) with emphasis on the way it is perceived and understood by the individual, or by a society - influences human behavior and Quality of Life (QoL). This might also be the case for people with dementia (PwD). Current soundscape-models are based on three basic components: a sound can be pleasant (or annoying), eventful (or boring) and familiar (or unknown). Due to disturbed cognition in dementia, it is not clear whether such a model is applicable in dementia-care.

**Objectives:** This study aimed to investigate the impact of sounds on PwD and to develop a valid model for soundscape design in order to modify behavior in PwD and subsequently enhance their QoL.

**Method:** An ethnographic design employing 24/7 participatory observations in five NH including 15 residents with dementia was used. Data-analysis was characterized by an iterative process and a constant comparison method. Peer-debriefing with professional caregivers ensured the credibility.

**Results:** The influence of sounds on the behavior and QoL of PwD was subject to two dimensions (1) the ability to correctly interpret the sound and (2) the ability to adequately react on it. These two dimensions were interrelated and have led to four different types of PwD: (1) the PwD who can interpret correctly and react adequately, (2) the PwD who can interpret correctly, but cannot react adequately, (3) the PwD who cannot interpret correctly but reacts adequately and (4) the PwD who cannot interpret sounds correctly and cannot react adequately.

**Conclusions**

Four persona emerged from the qualitative data, offering opportunities to better understand the PwD's reactions on the sound environment and develop adequate soundscapes. Further research should validate and refine this model. The final goal is to use the model in everyday practice to enable caregivers to create an optimal soundscape for PwD.

## Sleep dysfunction in the context of mood and cognitive impairment in symptomatic Huntington's disease

Kasia Rothenberg, Lyndsey Sandy, Anwar Ahmed

### OBJECTIVE:

Both mood disorders as well as sleep disturbances are a prominent feature of Huntington's disease, and substantially impair patients' quality of life. Similarly, both in Huntington's disease (HD) as in depression, sleep disturbance becomes one of the dominant pathognomonic features. Moreover, sleep problems may be the first sign of the onset of a major depressive episode. Some studies involving HD patients suggest that a deficit contributing to disordered sleep is reduced suprachiasmatic nucleus output. The mechanism underlying this deficit is not yet known, but mitochondrial dysfunction and oxidative stress are likely involved. This raises the possibility that the disordered sleep and circadian function experienced by HD patients may be an integral part of the disease.

SUBJECTS: demographics, genetic, mood and sleep parameters were analyzed in:

- 37 Patients (10 M and 27 F) with symptomatic Huntington's disease
- Mean age 51 (range 32 to 79; median 51)
- Mean numbers of CAG repeats 44 (range 38-62; median 43)
- All diagnosed and treated in HDSA Center of Excellence at Cleveland Clinic (assessment between February 2017 and July 2018).

### METHODS:

- Clinical questionnaires for sleep and psychiatric assessment for depression were used.
- Sleep-wake disorders were categorized according to DSM 5 criteria.
- Depression was quantitatively assessed by PHQ 9 (maximum score 27).
- Study protocol was approved by The Cleveland Clinic IRB (# 18-1040).
- Descriptive statistics and correlates were calculated with Statistica.

### RESULTS:

- All examined Patient but four report history of at least one episodes of major depressive disorder (80%).
  - Of thought all we actively treated for depression (55% SSRI, 26% SNRI, 18% the other groups of antidepressants, 60% of Patients were on two or more agents).
  - At the time of evaluation 88% of patient were in at least partial remission.
  - According to PHQ9 (mean score 10.2 range 0-22, median 8) patient presented only with minimal (PHQ1-4) or mild depression (PHQ5-9) at the time of evaluation.
- Sleep impairment was prevalent in HD Patients and was reported by almost all examined but two (94.5%).
  - Circadian rhythm sleep-wake disorders with delayed sleep phase type dominated in the group (30/37, 81%)
  - Followed by insomnia (26/37; 70%) and
  - Hypersomnia (7/37; 18%).
  - More than 60% of Patients suffers from two or more sleep disorders
  - Only 13% of Patients however reported the most characteristic for depression early morning awakenings.
- Correlations:
  - History of depression correlated with sleep disturbance ( $r = +0.76$ ) but not with number of CAG repeats ( $r = +0.17$ ).
  - Treatment and remission of depression didn't correspond with improvement in the sleep disorders ( $r = +0.2$ ).
  - Sleep impairment seem to persist beyond any form of treatment for depression in (32/37); 86% of Patients.

### CONCLUSIONS:

HD is primarily accompanied by circadian rhythm sleep disturbances, delayed sleep phase, which are associated with depression but doesn't respond to depression management. This raises the possibility that the disordered sleep and circadian function experienced by HD patients may be an integral part of the disease independent from mood disorder.

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### **The influence of environmental factors on behavior- and psychological symptoms of dementia: a participatory observation study in five nursing homes**

Patricia De Vriendt, Tara Vander Mynsbrugge, Francesco Aletta, Dick Botteldooren, Paul Devos, Dominique Van de Velde

Introduction: Behavior- and psychological symptoms of dementia (BPSD) occur very often in persons with dementia (PwD), influencing the quality of life (QoL) of the PwD and the caregivers. In the majority of PwD living in a Nursing Home (NH) in Flanders (Belgium) BPSD occur in the process of dementia. Although BPSD are considered as a characteristic of dementia, environmental factors can activate them.

Objectives: The objective of this study was to explore the factors that are on the onset and progression of BPSD in PwD living in NHs.

Method: In a qualitative design, 15 PwD were included in a 24/7 participatory observation (PO) in five NH. Field notes were taken by one researcher during the PO and analysed in the research team. Results were subsequently discussed between the researchers and the professionals from the participating NHs to support the iterative analysis-process and the constant-comparative method that has been used. Results then were described in themes.

Results: Environmental factors influencing BPSD globally could be divided into: the physical environment (e.g. room, living room), the social environment (e.g. presence of caregivers) but moreover BPSD depended on the interaction between family and caregivers and the PwD. BPSD seemed to be the result of the interplay between different factors: (1) the ability to interpret the social and physical environment, (2) language comprehension and personality, (3) the capacity to adequately react and make own choices, (4) both too much or too few environmental triggers evoked BPSD and (5) the physical comfort of the PwD. Positive presence of those factors enabled involvement, proximity and recognition while absence or negative presence did not.

Conclusions: The onset and progression of BPSD is highly individual but it can be influenced by the caregivers (e.g. by enabling people with dementia) or the setting (e.g. design of the physical environment). Good understanding of the factors that are on the onset of BPSD will support the most suitable approach.

### **Relationship between delusions and severe agitation in German nursing home residents with dementia: a cross-lagged panel study**

Franziska Anushi Jagoda, Rebecca Palm, Daniela Holle

Background: During the course of dementia people experience different clinical phenomena that become observable. The majority of people with dementia experience at least one neuropsychiatric symptom in three years. Agitation is the most prevalent among these symptoms. It is associated with higher caregiver stress, deterioration of patients' and caregivers' quality of life, as well as higher use of physical restraints and psychotropic drugs. The understanding of factors that contribute to agitation in nursing home residents with dementia is limited, especially the interplay between severe agitation and other neuropsychiatric symptoms has not been thoroughly investigated yet.

Objective: To examine the direction of relationships between delusions and severe agitation in nursing home residents with dementia living in German nursing homes.

Method: Secondary data analysis of an observational, longitudinal study in 51 nursing homes with n = 1967 participants. A cross-lagged panel study was conducted using structural equation modelling with two measurement points and a time lag of twelve months. Neuropsychiatric symptoms were assessed using the Neuropsychiatric Inventory Questionnaire (NPI-Q). Severe agitation was then defined as a construct of a combined score of the NPI-Q items agitation/aggression, disinhibition and irritability/lability. Delusions were measured using the relevant NPI-Q item.

Results: Of the participants n = 263 met the inclusion criteria for the analysis. Mean age was 82.6 years ( $\pm 8.2$ ) and 89% were female. Prevalence of severe agitation was 6.8% (n=18) at timepoint 1 and 8% (n=21) at timepoint 2. Prevalence of delusions was 7.2% (n=19) (T1) and 9% (n=24) (T2). Delusions at timepoint 1 positively predicted severe agitation at timepoint 2. At the same time the stability coefficients for severe agitation were high in strength. The cross-lagged panel study suggests that the relationship between delusions and severe agitation is unidirectional.

Conclusion: It was possible to obtain evidence for the relationship between delusions and severe agitation in nursing home residents with dementia. The predominant effect seems to be the stability of severe agitation itself, whereas delusions also seem to have an influence on severe agitation. Therefore reducing both severe agitation and delusion may result in a decreased state of agitation for residents with dementia.

### **Mortality in patients with neurocognitive disorder who had committed crimes**

Tiina Talaslahti, Hannu Koponen, Risto Vataja, Nina Lindberg, Timo Erkinjuntti, Jaana Suvisaari, Henrik Elonheimo, Hannu Kautiainen

Introduction: Behavioral and psychological symptoms (BPSD) of neurocognitive disorders, such as increased impulsiveness, agitation or psychosis, may predispose to criminal acts. Despite that, risk of premature death related to such behavior is not known.

Objectives: The aim of this study was to explore mortality, causes of death, and survival of patients with Alzheimer's dementia (AD), frontotemporal dementia (FTD), and Lewy body dementias (LBD, dementia with Lewy bodies and Parkinson disease dementia) who had committed crimes within four years before the diagnosis.

Methods: These register cohort data of 92 191 patients with the diagnosis of AD, FTD and LBD, and their criminal acts were collected from Finnish nationwide registers, such as the Finnish Hospital Discharge Register and the Finnish police register, between 1998 and 2015. During the follow-up of ten years from the initial diagnosis of dementia, we analysed the mortality compared with the general population (Standardized Mortality Ratio, SMR) and the causes of death of those who had committed at least one crime. Then we further explored the survivals of the different patient groups (Hazard Ratios, HRs).

Results: During the follow-up, 57% (52319/92191) of patients had died. The most common causes of death were dementias, circulatory diseases and cancer. The SMRs were 1.95 (95% 1.91-1.98) and 1.50 (1.48-1.52) in the AD group, 3.42 (2.93-3.98) and 2.95 (2.54-3.42) in the FTD group, and 3.63 (3.49-3.77) and 2.78 (2.67-2.89) in the LBD group, in men and women, respectively. Of both male and female patients with FTD who died during ten years, those with crimes were younger (65 and 66 years,  $p < 0.001$ ) than those with no crimes (71 and 73 years,  $p < 0.001$ ) at the time of the initial diagnosis. Age adjusted HRs for FTD patients committing crimes were 0.44 (95% 0.16-1.19) in women and 0.68 (95% 0.46-0.98) in men compared with those with no crimes.

Conclusion: The risk of death was increased in patients with AD, FTD or LBD who had committed crimes compared with the general population. FTD patients with criminal acts were younger and lived longer than those committing no crimes.

## FC5: Psychosocial Factors

### **The use of health care service and social resources in dementia could be mediated by carer's sense of coherence (SOC)**

Oriol Turro-Garriga, Vanesa Vinyes, Antoni Turon-Estrada, Marta Cullell-Juncà, Glòria Mas, Margarida Flaqué, Dolores Juvinyà-Canal, Eneida Mioshi, Josep Garre-Olmo

#### INTRODUCTION

Antonovsky's sense of coherence (SOC) is the ability to maintain a global orientation, with a persistent and dynamic feeling of confidence, to face the internal and external stimuli. Dementia carers with higher SOC demonstrated lower burden perception and better coping with the situation.

#### OBJECTIVE

The aim of this study was to analyse if higher carers' SOC may reduce the health care services related-costs (medical and social).

#### METHODS

The sample was composed by persons with dementia (PWD) and their carers whom living in the community. Data collected includes primary and specialised medical (or nursing; psychologist, social assistant) visits, blood test; neuroimaging techniques and use of social and health resources (day centre for dementia, home care service and other private assistance). The 13-item Orientation to Life Questionnaire (OLQ-13) was administered to assess carer's SOC. A monetary cost (in €) was attributed to medical services and social resources following the recommendations of Catalan Health Care system. The severity of dementia was also assessed by the Dependence scale (DS). The association of SOC to health care costs was assessed adjusting a linear regression model including sociodemographic characteristics of patients and carers, OLQ-13 and use of resources as covariables.

#### RESULTS

The sample was composed by 256 participants (128 PWD & 128 carers). Carers were women in 62.1%, spouse of the PWD in 55.2%, and the 64.1% were sole caregiver. The mean of SOC was 73.6 points (SD=11.5), greater in men (75.7 vs. 72.3). The mean of monthly cost was 431.3€ (median=335.0; SD=281.3; rank=70-1.728). The 39.8% of patients used some kind of complementary resources with a median of 289€/month (SD=310.5; rank=7.5-1207.7). The regression model associated lower health care cost to greater SOC (standardised beta ( $\beta$ ) = -.313;  $p < .001$ ), and higher as higher household ( $\beta = .171$ ;  $p = .043$ ). Carer's characteristics such as gender, kinship or cohabitation were not directly associated with cost.

#### CONCLUSIONS

These results suggest that carers with greater SOC doing a more rational use of resources. Although this use is mediated by social determinants like total household, personal SOC could be a complementary way of intervention to preserve carer's health and for reducing public health care expenses.

### **Ambivalent feelings and depression among Israeli Arab family caregivers of persons with dementia: The role of psychosocial resources**

Hanan Abo Jabel, Perla Werner

**Background:** Providing care to family members with dementia awakens a mixture of simultaneous, sometimes even contradictory feelings - i.e., ambivalent feelings. A previous study demonstrated that ambivalent feelings are associated with considerable negative consequences among family caregivers, such as increased depression. However, there is still need to examine the contribution of caregivers' psychosocial resources to this relationship.

**Aims:** The aim of this study was to examine: (1) ambivalent feelings among Arab family caregivers of a person with dementia. (2) The interplay of ambivalent feelings and depression with family caregivers' psychosocial resources – coping strategies and social support.

**Method:** Structured face-to-face interviews were conducted with 175 Israeli Arab family caregivers (87% female; 71% adult children; mean age=54) for persons with AD.

**Result:** Overall, the participants reported mild levels of ambivalent feelings (mean= 1.63, S.D=1.04, range=0-3) and depression (mean=7.93, S.D= 4.30, range=0-15). Ambivalent feelings improved the prediction of depression by adding an additional 6% to the explained variance over and above the other variables. Social support and problem-focused coping partially mediated the effect of ambivalent on depression.

**Conclusions:** Maximizing caregivers' psychosocial resources might decrease the deleterious effects of ambivalent feelings on caregivers' depression. These findings provide important insights for the development of interventions that provide effective skills and tools to manage and cope with the caregiving role.



## **A combination of physical movement and multifaceted cognitive training to enhance attention and recall memory in older people with mild neurocognitive disorder in a rural community**

Jiranan Griffiths, Lakkana Thaikruea, Nahathai Wongpakaran, Peeraya Munkhetvit, Adisak Kittisares, Pairada Varnado

**Background:** Attention and memory are part of the prominent problems that are usually found in mild neurocognitive disorder (mNCD). A systematic study showed a combination of physical and cognitive intervention is more successful than a single intervention. While there are guidelines for treatment of mNCD, a cultural adapted program might be more suitable.

**Objectives:** To investigate the effects of a combined physical movement and multifaceted cognitive training program on attention and recall memory in older people diagnosed with mNCD in a rural Thai community

**Methods:** A randomized controlled trial was conducted in older people who were 60-80 years old. Seventy older people who were screened as MCI, by using the Montreal Cognitive Assessment-B, were interviewed, examined, and diagnosed for having mNCD according to DSM-5 by a specialist geriatric psychiatrist or a neurologist. Blocked randomization was used to allocate participants into a treatment group and a control group (n = 35 each). The treatment program included 24 sessions, twice a week. The program was a combination of physical movement using bamboo with music and multifaceted cognitive training. The trail making test-A (TMT-A) was used to evaluate attention and the word list leaning test was used to evaluate immediate and recall memory at baseline and after the treatment program.

**Results:** The mean age of both groups was 67 ± 5 years. The treatment group had a better improvement in both immediate and delayed recall compared to the control group. (p=0.023 and p=0.036 respectively). The mean difference in immediate recall was 1.20 (p=0.001) for the treatment group and 0.26 (p=0.453) for the control group. Delayed recall differences were 1.97 (p=0.001) in the treatment group and 0.91 (p=0.001) in the control group. The mean difference of TMT-A scale score for attention was greater in the treatment group, 25.17 (p=0.018) than in the control group, 11.29 (p=0.325).

**Conclusion:** The treatment combining physical movement and multi-faceted cognitive training shows benefit to attention and recall memory in older people with mNCD. Further study on a variation of treatments suited to cultural conditions and their effects on both mNCD and major NCD is needed.

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## **Strategies for managing pre-death grief amongst family carers of a person with dementia**

Kirsten Moore, Sophie Crawley, Claudia Cooper, Victoria Vickerstaff, Elizabeth Sampson

**Background:** Between 47-71% of family carers of a person with dementia experience grief before the death of their relative (Chan et al, 2013). UK bereavement care guidelines recommend a public health model where most people manage grief through social networks, some require voluntary supports and a small minority require professional support.

**Aim:** This study aimed to examine carers' experience of grief while caring for someone with dementia and the various strategies employed to manage grief.

**Methods:** Cross-sectional mixed methods study. We interviewed 150 family carers and administered questionnaires including the Marwit-Meuser Caregiver Grief Inventory (MMCGI- score range 18-90; higher scores indicate higher grief severity). We asked carers whether they recognised that they were experiencing grief and, if so, whether they had tried strategies for managing grief and whether strategies were helpful. We recorded field notes and undertook additional audio-recorded interviews with 16 participants. We analysed quantitative data in SPSS and thematically analysed qualitative data using NVivo software.

**Results:** Seventy-seven percent of participants were female; 48% were adult children of the person with dementia and 47% were spouses/partners. They cared for someone with mild (25%), moderate (43%) or severe (32%) dementia. Most experienced grief (59% definitely; 14% possibly); 5% were not sure and 22% did not. MMCGI scores varied: definitely grieving (mean=61.9, SD=12.1); possibly grieving (mean=50.9, SD=9.5); not sure (mean=59.5, SD=15.1), not (mean=50.0, SD=15.1); and definitely not (mean=50.0, SD=11.3). Three quarters of participants sought emotional support for grief from family and friends. Ninety-five percent of grievers tried at least one formal support for grief: 48% GP; 43% carer support groups; 24% NHS funded counselling; 20% information about support and 7% private counselling. Qualitative data on helpfulness of support types will be presented.

**Conclusion:** Most carers reported experiencing pre-death grief and accessing a mix of formal and informal supports to manage grief. Fifty-five percent of our sample, regardless of whether they identified as grieving, had sought at least one professional



for emotional support (GP or counselling). This is inconsistent with UK guidelines on bereavement which suggest most people should manage grief solely with informal support.

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### **The individualized Meeting Centers Support Program; evaluation of benefits and costs**

Rose-Marie Droes, Annelies Van Rijn, Judith Bosmans, Franka Meiland

**Objective:** A relatively small percentage of people with dementia and carers utilize group-oriented day care support facilities. To serve a broader and larger group, several Meeting Centers for people with dementia and carers in the Netherlands offer an additional individualized support program since 2016, consisting of DemenTalent (people with dementia work as volunteers in society based on their talents), and for carers Dementelcoach (telephone coaching) and STAR e-Learning. In this study we evaluated the feasibility, implementation and (cost-) effectiveness of this individualized Meeting Centers Support Program (iMCSP).

**Method:** Effectiveness was explored in a randomized controlled trial with measurements at baseline and after 6 Months, comparing three groups: iMCSP (39 people with dementia receiving DemenTalent and their carers; 65 carers receiving Dementelcoach or STAR), regular MCSP (n=54 dyads) and a No day care control group (n=189 dyads). The implementation process was evaluated using stakeholder interviews.

**Results:** Implementation of iMCSP proved to be feasible and to lead to a more varied group of participants (people with dementia, carers) utilizing the support. Both regular MCSP and iMCSP positively impacted the participants' affect. People with dementia benefited from DemenTalent (fewer and less severe neuropsychiatric symptoms than regular MCSP group) and their carers felt less emotionally burdened because of this. DemenTalent also proved cost-effective. No added value was demonstrated for iMCSP compared to regular MCSP with regard to carers' sense of competence or quality of life. However, iMCSP (DemenTalent, Dementelcoach or STAR e-Learning) resulted in happier carers compared to no day care support. Participants (people with dementia, carers) were highly satisfied with the individualized and regular MCSP.

**Conclusion:** Adding individualized MCSP to the regular Meeting Centers helps to reach and effectively support a broader and larger group of people living with dementia and carers. DemenTalent decreased neuropsychiatric symptoms in participants with dementia and the emotional burden on their carers, and it was cost-effective. All iMCSP interventions resulted in happier carers. Further research on a larger scale is needed to evaluate the impact of iMCSP on other domains of the quality of life of participants.

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### **What is person-centred dementia care?**

Matthew Croucher, Susan Gee

Person-centred care focuses on each individual's needs and preferences and on supporting their personhood. It has been called the 'gold-standard' for the care of people living with dementia. This presentation will develop an understanding of how person-centred care moves beyond best-practice personalised medical care, some of the challenges that may arise, and the potential role of psychiatry of old age services to facilitate culture change in older persons health workplaces.

So-called "unskilled" carer workers provide the majority of direct care for people living with dementia in residential care facilities and via home-based support services. Although they are often portrayed as lacking status and control in their work roles, these carers have the power to be a key influence on the quality of life of the older people living with dementia that they work with. One of the underlying drivers of our education initiative for dementia carers is a fundamental recognition that these carers are important, therefore they are an important focus for supporting person-centred care.

## FC6: Ageing

### Ageism: Why We Need a United Nations Convention on the Rights of Older Persons

Kiran Rabheru, Margaret Gillis

The International Longevity Centre (ILC) Canada is a human rights organization that advocates for the needs of older people. They are part of a global alliance of 17 countries that was the brainchild of the famous geriatrician, Dr. Robert Butler, who also coined the term “ageism” back in 1969. He defined ageism as “a combination of prejudicial attitudes towards older people, old age and aging itself”. While scholars may use different definitions of ageism there is one universal truth. Ageism is an “ism” like no other because it is related to a universal condition, and while the evil nature of all prejudice is ignorance and hostility, ageism has the extra bonus of creating self-hate for the old, while for the young it is a prejudice against their future selves. Like all isms “ageism” permeates and destroys, it belittles and patronizes, and it results in the loss of autonomy, and dignity. It creates barriers to health, financial resources, education, employment and social and economic justice. What makes ageism more perplexing is that it works against one of the greatest outcomes of the 20th century, which was the incredible increase in life expectancy. This should in fact be a cause for celebration. While there are many ways to address ageism, this paper will argue that a single instrument, a new United Nations Convention on the Rights of Older Persons (UN Convention), is one effective way to ensure all people enjoy their rights in their later years. The argument for UN Convention on the Rights of Older Persons can be illustrated by both anecdotal evidence and through academic research. A United Nations convention could be transformative, because research-based evidence is conclusive, conventions work because they better the lives of rights recipients. A UN Convention would view older people as rights holders by codifying their rights. It would elaborate on the duties of States towards older persons and allow for better monitoring of action at a national level. A Convention would contribute to the political will for positive change. It would also establish international standards and monitoring of action taken at a national level.

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### Social network and cognitive functioning in the oldest old – Results from the AgeCoDe/AgeQualiDe cohort

Susanne Roehr, Wolfgang Maier, Michael Wagner, Martin Scherer, Steffi Riedel-Heller

**Background:** Social isolation is associated with faster cognitive decline and a higher likelihood to develop dementia. However, less is known about the association of social network and cognitive function in the oldest-old, the group that is at highest risk for both social isolation and dementia. We therefore aimed to investigate longitudinal effects of social network size on global cognitive functioning in a sample of dementia-free oldest-old individuals.

**Methods:** Analyses were based on data from follow-up 5 to follow-up 9 of the multi-centric, prospective German AgeCoDe/AgeQualiDe cohort. We used unadjusted and adjusted hybrid mixed effects linear regression models to estimate between-subject effects and within-subject effects of social network size (Lubben Social Network Scale/LSNS score) on global cognitive functioning (normalized Mini-Mental State Examination/MMSE score).

Results: A total of  $n = 960$  dementia-free study participants at follow-up 5 were included. Mean age at observation onset was  $M = 86.4$  ( $SD = 3.0$ ), 67.8 % were women. Social isolation was prevalent in one third (32.5 %) of the study participants. While adjusting for confounders, there was a significant between-subject effect of social network size on global cognitive functioning (lower cognitive functioning in individuals with smaller networks; coef.: 0.46, 95%CI = 0.27-0.66,  $p < .001$ ) and a significant within-subject effect, i.e. a decrease in an individual's social network was associated with a decrease in cognitive functioning (coef.: 0.23, 95%CI = 0.10-0.37,  $p < .01$ ) over a mean follow-up time of 3.5 years. High education showed a protective main effect on cognitive functioning (coef.: 2.96; 95%CI = 1.66-4.25;  $p < .001$ ), but it did not significantly interact with social network, hence not attenuating the negative effect of decreases in social network on cognitive functioning over time (coef.: -.04; 95%CI = -0.24-0.17;  $p = .73$ ).

Discussion: Oldest-old individuals with smaller social networks showed lower cognitive functioning. In general, if decreases in individual social networks occurred, they went along with decreases in cognitive functioning. Our results confirm social isolation being a risk factor for cognitive decline and dementia, and they extend to suggest that this is the case even for oldest-old age. They also emphasize the importance of maintaining a socially active lifestyle into very old age. Likewise, this points to the importance of efforts that work towards the prevention of social isolation in late life.

### **Cognitive frailty in community-dwelling elderly people. A pilot study.**

María Campos-Magdaleno, David Facal, Arturo Pereiro X., Cristina Lojo-Seoane, Sabela C. Mallo, Onésimo Juncos-Rabadán

Background: Frailty is a heterogeneous and complex syndrome. Cognitive fragility has been considered as a subtype of frailty characterized by concurrent physical frailty and potentially cognitive impairment (Kelaiditi et al., 2013). Early detection of cognitive frailty in elderly people is key to increase their quality of life and health status, as well as to develop preventive interventions. The aim of this pilot study is to explore cognitive frailty in community-dwelling elderly people without dementia or disability.

Method: Seventy participants aged over 60 years were assessed. Sociodemographic, functional, health, physical, cognitive (including dual tasks) and socioaffective data were recorded. First, participants were diagnosed as Cognitively Unimpaired (CU) or Mild Cognitive Impairment (MCI), using the Montreal Cognitive Assessment (MoCA test, Spanish version, normative data, Pereiro et al., 2018). Then, they were classified as Robust, Pre-frail or Frail using current frail criteria (Fried et al., 2001 modified by Jurschik-Giménez et al., 2011). Into the MCI group, Robust and Pre-frail subgroups participants were compared in age, years of education, support variables (emotional, instrumental, social and affective) and cognitive variables (simple tasks: verbal fluency and tracking speed; and dual task: fluency and tracking speed).

Results: From the whole sample, 52 participants (74, 3%) were diagnosed as CU and 18 (25, 8%) as MCI. Among the CU group, 29 (41, 4%) were Robust, 21 (30%) Pre-frail, and 2 (2, 9%) frail. Among the MCI group, 9 (12, 9%) were Robust, 9 (12, 9%) Pre-frail, and none frail. Into the MCI group, the Robust (17%) and Pre-frail participants (31, 5%) did not show significant differences in age, education and cognitive performance in the simple task (verbal fluency and tracking speed). However, in the dual task there were significant differences in tracking speed ( $F = 4, 18$ ;  $p < 0.05$ ) but not in fluency. Moreover, there were significant differences in instrumental support ( $F = 10, 93$ ;  $p < 0.05$ ).

Conclusion: These results support the need of including Pre-frailty as a category into the cognitive frailty continuum and reveal possible differences in dual task performance and in instrumental support. Further research on this topic is necessary.

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## Physical activity in day care services for people with dementia

Bjornar Finnanger Garsho, Lina Ellingsen-Dalskau, Ingeborg Pedersen

**Background:** Dementia is a leading cause of disability and dependency among older people (WHO, 2012). Despite public focus on the importance of physical activity (WHO, 2010) and findings showing the benefits of such activity (Blankevoort et al., 2010, Telenius et al., 2015, de Souto Barreto et al., 2015), research has shown that people with dementia are less physically active and have more sedentary behaviour than other people in similar age groups (Aueyung et al., 2008; Watts et al., 2013 & Van Alphen et al., 2016). Day care services should give people with dementia an opportunity to experience social, physical and cultural activities (Norwegian Ministry of Health and Care Services, 2015). Such services are usually connected to institutions, but some care farms also offer day care. While organized similarly, the farm-based services base their activities on its resources and nature surroundings (Ibsen et al., 2018). The aim of this study was to explore the differences in levels of physical activity between participants in the two types of services and to investigate if levels of physical activity were related to days spent at the farm based service.

**Methods:** In this comparative cross-sectional study, we gathered one week of actigraphy data from 107 people attending ordinary day care and 29 people attending farm-based day care. We used linear regression, adjusting for age, gender and score on the Timed-Up-and-Go-test, to compare levels of physical activity between the two groups. Further, we used mixed model analysis to analyse physical activity between days spent at the farm and at home for people attending farm-based dementia care services.

**Results:** Persons attending farm based dementia care spent statistically significant longer time in moderate activity, approximately half an hour each day, compared to those in ordinary day care. Further, participants in farm-based day care spent statistically significant less time in sedentary activity and more time in light and moderate activity, compared to days not at the farm.

**Conclusion:** The findings indicate that farm based day care services have higher levels of physical activity compared to ordinary day care and that it increases levels of physical activity for its attendees.

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## FC7: Depression (Session 2)

### Using PHQ-9 in identifying depression among community dwelling older people: a study of a national survey

Nahathai Wongpakaran, Tinakon Wongpakaran, Dararatt Anantanasuwong, Pimolpun Kuntawong

**Introduction:** Depression among older people exhibits some different symptoms from those among younger age groups, in particular, feeling bored and complaint of memory problems. Patient health questionnaire (PHQ-9) is a common screening tool, but mainly used among adults. This study aimed to evaluate the use of PHQ-9 among community dwelling elderly Thais. **Methods:** Data on depression was collected using the PHQ-9 among 1,235 elderly Thais from Bangkok and all other regions from the Center for Aging Society Research and in collaboration with the National Institute of Development Administration NIDA Poll. The mean age of the respondents was 67.7 years (SD, 5.2), with 50.2% male, 59% had obtained education at no more than elementary level, 87% were married and 57.7% resided in an urban area. Rasch analysis was used to investigate the construct validity of the PHQ-9.

**Results:** The majority of participants (32.8%) scored 0 while 9.1% scored 10 or above (considered as having depression). The mean score of the PHQ-9 was 3.39 (SD 4.09), and the min-max was 0-27. Using the principal component analysis of residual, 47.0% was explained by the measure. The eigenvalue in the first contrast was 1.62, no local dependence and no item misfit was found. All values indicated unidimensionality. No disordered category or threshold was illustrated; however, item 6 (feeling bad about oneself) and item 9 (better off dead) demonstrated poor category response (<10 observations). While Cronbach's alpha was excellent (0.85), Rasch's person reliability was low (0.52). In addition, differential item functioning due to educational level was found in item 9, while poor targeting was shown on the item – person map (> 1 logit).

**Conclusion:** The PHQ-9 exhibited too low reliability score among the elderly even though the data fit the Rasch measurement model by demonstrating unidimensionality and local independence. This indicated that the PHQ-9 may not be sensitive enough to distinguish between high and low performers. Poor targeting denoted that the elderly with a low level of depressive symptoms were unable to be assessed using the PHQ-9. In addition, screening tools that were specifically developed and tested for use among the elderly are recommended.

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### Determinants of Intention Among Primary Care Physicians in Puerto Rico to Make an Early Diagnosis of Alzheimer's disease: An application of the Theory of Planned Behavior

Mirna L. Arroyo Miranda, Jessica Irizarry, Ernesto Rosario Hernandez, Lillian Valcarcel

**Background:** Although Alzheimer's disease (AD) is the fourth leading cause of death in Puerto Rico, it can take a patient up to 2 years to receive a physician diagnosis; this delay may be related to physicians' beliefs about AD. This is the first study in Puerto Rico about attitudes and practices of Primary Care Physicians (PCPs) towards AD and, to our knowledge, the first to address the problem using the Theory of Planned Behavior (TPB).

**Objectives:** Study addressed barriers and limitations of PCPs to make an early diagnosis of AD, using the TPB framework. The study aimed to determine: (a) intention of PCPs to perform an early diagnosis of AD; (b) association between theoretical constructs and intention of PCPs; and (c) if salient beliefs under each construct hinder or promote PCPs' intention.

**Methods:** A questionnaire was specifically designed for this cross-sectional study, to measure each construct. Final sample size was 103 participants. Validity and reliability measures were assessed and structural equation analysis conducted using PLS-SEM (SmartPLS, 3.0).

**Results:** Attitudes, Subjective Norm and Perceived Behavioral Control (PBC) constructs reached validity and reliability standards. Direct structural model reached predictive relevance of .268. Combined, the three constructs in our direct model explained 35.7% of the variance, reflecting a strong intention of PCPs to perform an early diagnosis of AD ( $R^2 = .357$ ,  $p < .001$ ). PBC was the strongest predictor of intention, suggesting that training and years of experience are key to having a positive outlook for early diagnosis ( $\beta = .378$ ,  $p < .001$ ).

**Conclusion:** TPB is a good model to examine intention to make an early diagnosis of AD. Our findings could be of use to design interventions to improve PCPs diagnosis practices and dispel myths about AD. Training by modeling is key to changing PCPs' Perceived Behavioral Control. Study data could also be useful to patient associations for advocacy purposes.

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### **Older people with depressive symptoms have higher rates of needs assessed by cane. An epidemiological study.**

Javier Vicente-Alba, María Vidal-Millares, Tania Blanco-Pena, Carmen García-Mahía, Ana Gago-Ageitos, M<sup>a</sup> José Durán-Maseda, Raimundo Mateos

**Background.** The Camberwell Assessment of Need of the Elderly (CANE) is a tool that it's used to quantify the needs met, partially met or unmet in the older people, particularly those with a mental disorder. The CANE has adequate psychometric properties and facilitates to elicit a list of needs based on the perception of the user, the professional and the caregiver. **Objectives.** To study the relationship between needs and depressive symptomatology in a community sample of people older than 65 years.

**Methods.** This was epidemiological community two-phase study. From an initial sample of 800 people in the first wave, 373 subjects were interviewed in the second wave using the CANE. Depressive symptoms were assessed by means of the Geriatric Depression Scale of Yesavage (15 items). The statistical package SPSS v.19 was used to process the data.

**Results.** The most frequent unmet needs on the depression sample would be social contact problems (18.8%), problems of distress / suffering (17.8%), memory problems (9.9%) and problems of falls (9.9%). As partially met needs, the most frequent were physical problems (86.1%), distress / suffering problems (59.4%) and home care (37.6%).

In the whole sample, the most important unmet needs were memory problems (5.9%) and the ability to manage money (5.9%). The most important partially met needs were physical health problems (77.7%) and problems related to vision / hearing and communication (33.5%).

#### **CONCLUSIONS:**

Identifying the needs is essential to carry out comprehensive psychogeriatric care. The fact that older population with depressive symptoms have higher level of met and unmet needs than the average population has implications in prevention and care.

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### **Association of Lifetime History of Depression, Alzheimer's Disease, and Vascular Disease with Hippocampal and Entorhinal Cortical Volume in Late Life Depression**

Craig Nelson, David Bickford, Ruth Morin, Scott Mackin

**Background.** Depression is common in older adults and frequently accompanied by cognitive impairment. The hippocampus (HC) and entorhinal cortex (EC) play an important role in cognition and can be adversely impacted by factors such as repeated episodes of depression, early Alzheimer's Disease, and vascular disease. In this study we examine HC and EC volume in relation to these factors and to memory function.

**Methods.** Participants from the two-site (UCSF and U of Pittsburgh) NIMH sponsored Alzheimer's Disease Network Initiative-Depression Study (ADNI-D) included men and women age  $\geq 65$  years of age who met DSM 5 criteria for Major Depression and had a 17-Item Hamilton Depression Rating Scale  $\geq 15$ . Exclusion criteria were a Mini Mental State Score (MMSE)  $< 25$  or a clinical diagnosis of dementia; another psychiatric disorder (except for simple phobia or generalized anxiety disorder); a neurological disorder, a contraindication to Magnetic Resonance Imaging (MRI); or current medications likely to impair cognition. A lifetime history of depression with and without antidepressant treatment was obtained and a comprehensive neuropsychological test battery performed. Subjects completed 3-Tesla MRI sequences for cortical volume. Amyloid burden was assessed with Positron Emission Tomography (PET) using Florbetapir as the ligand. Genotyping for APOE-4 was performed and a modified Hachinski index completed. Data analysis. HC and EC volume in the depressed participants will be



compared with non-depressed controls from the ADNI database matching for age and sex. We will examine associations of HC and EC volume with 3 factors: 1) Lifetime history of depression and antidepressant treatment; 2) Markers for Alzheimer's Disease (APOE 3/4 or 4/4 and amyloid burden); and 3) Markers for vascular disease (Hachinski index and MRI index of small vessel disease).

Results: 121 participants were enrolled including 82 women and 39 men; mean age was 70.9±5.3; mean years of education 16.3±1.9; baseline HAMD 18.3±2.6; and MMSE 29.1±1.0. 61% had impaired cognition in at least one domain. The results of the analyses described above will be presented.

Implications: the contribution of the 3 factors to HC and EC volume loss and to deficits in cognitive function will be discussed.

### **Gender differences in traumatic events and suicidal behavior mediated by PTSD and anxiety-depressive disorder**

Helen-Maria Vasiliadis, Catherine Lamoureux-Lamarche, Djamal Berbiche, Isabelle Pitrou

**Background:** PTSD and anxiety-depressive disorders have been associated with suicidal behaviour (SB) 1, 2. It is not clear however which lifetime traumas are associated with SB in men and women. The objectives of this study were to assess the direct and indirect effect, through the mediating role of PTSD and anxiety-depressive disorders, of trauma on SB in older adults. **Methods:** The analytic sample consisted of 1456 older adults participating in a primary care cohort study (2011-2013) in the province of Quebec (Étude sur la Santé des Aînés-Service). Suicidal behavior in the past 6 months was assessed with the following questions: "participant thought they were better off dead"; "participant refused treatment or stopped taking medications with the goal to die"; "participant stopped eating enough food for several days to die". The presence of lifetime traumatic events was captured from a list of 14 events similar to those found in the DSM-5. The 6-month presence of PTSD was measured with the validated PTSD scale (scores 0-12; cut-off 10)<sup>3</sup> based on number of lifetime events, IES-R, and impairment in daily activities. Diagnosis of an anxiety-depressive disorder was based on medical administrative data. Study variables controlled for: age, marital status, social support, daily hassles, pain. PROC CALIS in SAS was used for the path analysis. Model fit indices showed good fit for both males and females.

**Results:** The past 6-month prevalence of SB reached 8.9% and 3.6% in females and males. In females, exposure to violence/stalked was associated with SB; exposure to violence and natural disaster and trauma related to accident or illness of close other was associated with PTSD, but did not lead to SB. In males, exposure to sexual assault and trauma related to war /combat/imprisonment was associated with SB; trauma related to violence / stalked and SB was mediated through the presence of an anxiety-depressive disorder and trauma related to accident or illness of a close one was mediated through PTSD.

**Conclusion:** SB is common in primary care older adults. The traumas and pathways leading to SB are more complex in males than females.

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## FC8: New Research (Session 1)

### The APA DSM-5 Cultural Formulation Interview

Nery Diaz

Patients' cultures and life experiences have a profound impact on their understanding of their symptoms and attitudes toward care. The Outline for Cultural Formulation (OCF) was introduced in DSM-IV as a narrative framework for what an open, empathic and thorough cultural assessment should consist of during a diagnostic interview. Although professional organizations and government guidelines recommend cultural competence training for providers, until recently the lack of a standardized cultural assessment format hindered research and training. The DSM-5 Cross-Cultural Issues Subgroup operationalized the OCF into a questionnaire, the Cultural Formulation Interview (CFI), to facilitate the implementation of the OCF model in a routine evaluation. The CFI was tested in an APA-supported field trial led by the NYS Center of Excellence for Cultural Competence at the New York State Psychiatric Institute (NYSPI). The DSM-5 CFI field trial was the largest international collaboration for cultural assessment, involving 321 patients in 12 cities and 6 countries, with the aim of assessing the CFI's feasibility, acceptability and perceived clinical utility. To foster person-centered, culturally competent, recovery-oriented treatment planning, an interactive, online training module on the CFI is available to behavioral health providers around the world. More research is needed on CFI implementation to explore how it is best used in clinical practice and how implementation of the CFI can affect patient satisfaction, symptoms, and quality of life as well as engage providers in lifelong learning about cultural competence.

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### Substance abuse in old age inpatients in a psychiatric ward

Marta Diaz Varela, María Vidal Millares, Javier Vicente Alvarez, Ana Gago Ageitos, M<sup>a</sup> Carmen García Mahía, M<sup>a</sup> José Durán Maseda

Background:

The previous literature indicates a low percentage of alcohol and others substances use in the elderly. In Epidemiologic Catchment Area study, the estimated prevalence were 3.1% for men and 0.4% for women. (1)

Addictive behaviours usually decreased with age and psychiatric problems in old age are different from those of younger ages (2, 3, 4)

In studies on geriatric patients admitted to psychiatric wards, the percentage of substance abuse is 11.7%, being alcohol the most common, 8.6% (2).

Aims:

Studying the prevalence of substance use in geriatric inpatients.

Analysing the differences in the substance use among inpatients older than 65 years old vs. younger than 65 years old.

Material and method:

A retrospective observational study were designed with 347 inpatients in a psychiatric ward during a period of 2 years.

As a data source we have analysed the history and clinical records and determination of toxic in urine

Results:

25.6% of the patients older than 64 years have a pathological toxic consumption. Patients over 64 years have only alcohol consumption, not appearing cases of others drugs consumption.

Statistical difference was found in alcohol consumption by sex in elderly (Chi-square,  $p = 0.000$  47.6% men vs 4.5 % women). If we analyse the diagnoses received in patients with toxic consumption, we found statistically significant differences by age group (Chi-square,  $p = 0.041$ ).

Elderly patients in simple have a substance background less frequently than younger ones (Chi-squared;  $p=0.001$ ).

Conclusions:

Psychogeriatric patients do not present a significant consumption of toxics with the exception of alcohol. Alcohol consumption is an influential factor in the admission of these patients in more than a quarter of patients.

The rates of alcohol consumption in geriatric patients in our environment have been higher than those observed in other studies.

This alcohol consumption occurs more importantly in psychogeriatric men; alcohol consumption is present in almost half of these patients.

Despite the high percentages of alcohol consumption found in the sample, no psychogeriatric patient was admitted exclusively due to a disorder of alcohol dependence, the consumption is accompanied by another psychiatric disorder of greater severity; usually bipolar disorder and schizophrenia.

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### **Self-care of long term conditions in dementia: Systematic review of factors affecting self or proxy management**

Jessica Rees, Claudia Cooper, Alex Burton, Remco Tuijt, Kate Walters

Background: Long Term Conditions (LTCs) are common in people living with dementia; their self-management or proxy management (where people carry out self-management activities for those who are unable to do so) is an important determinant of wellbeing.

Objectives: To conduct the first systematic review of how self and proxy management of LTC in dementia is best supported, including enabling and inhibiting factors.

Methodology: We systematically searched MEDLINE, PsychINFO, Embase and Allied and Complementary Medicine databases in November 2018. We identified the LTCs most frequently requiring self or proxy management in people with dementia through expert consensus. We included qualitative and quantitative peer reviewed journal articles that described the self-management or proxy self-management of LTCs in people with dementia. Two authors independently rated study validity. We narratively synthesised qualitative and quantitative findings using a data driven convergent synthesis approach.

Results: We included 12 articles meeting predetermined inclusion criteria: 7 qualitative, 2 case studies, 2 quantitative and 1 mixed methods. We identified three themes within the included studies: 1) dementia symptoms impeding treatment regimens 2) negotiating self-management support 3) collaborating with professionals. Communication and partnership between stakeholders is important in the management of LTC in dementia. Proxy carers take responsibility for self-management due to safety concerns. Empowerment of people with dementia to remain involved in their care as far as possible improves the loss experienced by this transition. Healthcare professionals support proxy management through simplifying routines and providing LTC specific education, and acknowledge proxy care role in care planning.

Conclusions: Findings can inform future interventions to support self and proxy management of LTC in dementia.

Personalised treatment plans are required to understand how cognition affects an individual's adherence to treatment regimes. Special attention must be paid to identifying a proxy carer to support self-management as cognition declines.

Exploring the values and beliefs of stakeholders is suggested to be a target for future interventions to improve adherence.

### **The 10/66 Cohort Study. Description and main findings of the different phases of the study.**

Daisy Acosta

The 10/66 population-based study is a longitudinal study of adults aged 65 and over, living in 11 defined catchment areas in eight low and middle-income countries (China, Cuba, Dominican Republic, India, Mexico, Peru, Puerto Rico, Venezuela). The surveys, which commenced in 2003, use the same cross-culturally validated assessments. This includes measures of cognitive function, mental disorders, physical health, anthropometry, socio-demographics, health and lifestyle risk factors, disability/dependence, health service utilisation, care arrangements, caregiver strain and biological measures. A second follow up was carried out between 2007 and 2010 and a third wave of assessment using an extended form of the basic 10/66 survey started in 2017 and still present. This is both a new prevalence sweep, with a re-door-knocking of the original catchment areas to generate a new representative prevalence sample of all older adults, and a final follow-up of the original baseline cohort. The original sample consisted of 15901 individuals.

Morbidity in the baseline surveys of the cohort has been described in detail, with publications on the prevalence of dementia, mild cognitive impairment, mental disorder, sleep disorder, hypertension, stroke, anaemia and dependence. More recently, we have been focusing on determinants of longitudinal outcomes, specifically incident dementia, mortality, and dependence. In this presentation we will focus on the trajectory of the research group and describe the main findings. The data set is openly

available and data access forms can be found on our website, together with a full list of findings and publications (<http://www.alz.co.uk/1066>).

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### Validation of three versions of the mini-mental state in the framework of an epidemiological study of older people in Galicia, Spain

Lluna-Maria Bru, María Pérez-Haro, Raimundo Mateos

**Background.** The Mini-Mental State Examination (MMSE) (Folstein & Folstein, 1975) is the world's most widely used instrument for measuring cognitive impairment in adults. It is a usual part of epidemiological research protocols, and it was incorporated into the DIS-III for the Epidemiological Catchment Area (ECA) study. It was introduced in Spain by Lobo, who first made an adaptation of the MMSE to Spanish, the 35-item Mini Cognitive Exam (MEC-35) in 1979; and in 1999 he revalidated its 30-item version (MEC-30).

**Objectives.** The aim of the present study is to compare the psychometric properties of three Spanish versions of the Mini-Mental State Examination (MMSE): the 30-item MMSE as it was incorporated in the epidemiological survey DIS-III, the MEC of 35 items and the MEC of 30 items, in a community older population.

**Methods.** The three versions of the MMSE were used in the framework of a community-based epidemiological study aimed at studying the cognitive impairment and needs of a community sample of people older than 65 years, representative of the Health Area of Santiago de Compostela, Spain. The statistical analysis included: Factor analysis (Keizer-Meyer-Olkin index), internal consistency (Cronbach's alpha), ROC curves, and agreement between instruments (Lin index). Statistical software package: R Core Team 2017.

**Results.** The sample showed an expected low level of education (8.1% illiterate, 73.2% less than primary). The three instruments presented a similar internal structure of 5 dimensions, with an internal consistency between 0.6 and 0.9. The sociodemographic variables gender, age and educational level correlated with the total scores of the three instruments. The ideal cut-off points to detect dementia in this geographical area were lower than those commonly used in the literature, 15/16 for the MEC-30, 16/17 for the MEC-35 and 16/17 for the MMSE.

**Conclusions.** Sociocultural factors affect the performance of screening tests of cognitive impairment, which makes revalidation studies convenient in populations with specific social and cultural characteristics.

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## **End-of-Life Care in Schizophrenia: A Systematic Review**

Joshua Baruth, Sohail Mohammad, Maria Lapid

Schizophrenia is a severe and persistent mental illness with profound effects on patients, families, and communities. It causes immense suffering on personal, emotional, and socioeconomic levels. Individuals with schizophrenia have poorer health outcomes and die 10-20 years earlier than the general population. The economic costs associated with schizophrenia are substantial making up approximately 2.5% of total healthcare expenditures worldwide. Despite the psychosocioeconomic impacts, individuals with schizophrenia are subject to several inequities of care, particularly at the end-of-life. We performed a systematic review to examine end-of-life care in schizophrenia, in order to identify factors that can enhance end-of-life care for this vulnerable population. A comprehensive search was conducted using the databases Ovid MEDLINE(R) and Epub Ahead of Print, In-Process & Other Non-Indexed Citations, and Daily, Ovid EMBASE, Ovid PsycINFO, Ovid Cochrane Central Register of Controlled Trials, Ovid Cochrane Database of Systematic Reviews, and Scopus from 2008 to 2018. Keywords included schizophrenia, palliative, end-of-life, and hospice. Two authors independently reviewed titles and abstracts, and disagreements were resolved by consensus. Studies were excluded if they were not within scope, personal perspectives, or letters-to-the-editor. The search identified 212 articles, of which 33 met criteria, including 13 case reports, 12 retrospective reviews, 5 reviews, 2 prospective interviews, and 1 prospective cohort. The case reports describe patients with schizophrenia and comorbid terminal conditions, most commonly cancer, and highlight a pattern of suboptimal intervention, increased mortality, and greater use of health services. The retrospective reviews provide evidence that patients with schizophrenia have reduced access to specialty care, palliative, and hospice care compared to controls. The review articles discuss the importance of multidisciplinary collaboration in caring for these patients at the end-of-life. The prospective interviews investigate differences between suicide completers and controls within a year of death using a psychological autopsy method, and examine the perceptions of mental health professionals. The prospective cohort study demonstrates higher rates of hospitalization and death among heart failure patients with schizophrenia. In conclusion, individuals with schizophrenia are at risk of unmet needs at the end-of-life, and early recognition can enhance care by incorporating adequate interventions including palliative and hospice approaches

## **FC9: New Research (Session 2)**

**Ageing disease and cognitive function – an exploratory study of Portuguese elderly population.**



Marlene Rosa, Daniana Dores, Miguel Pires, Luís Ferreira, Canaverde Maria João, Martins Natália, Joaquim Guardado, Teresa Rodrigues, Janine Henriques, Ana Carvalho

**Introduction:** Age is the main risk factor for the prevalent diseases such as cancer, cardiovascular disease, neurodegeneration (1), balance and vestibular disorders, musculoskeletal impairments (2), kidney dysfunction (3), or others. Diagnostic of multiple diseases (e.g., kidney and cardiovascular) might be associated with cognitive decline (3), demonstrating a potential correlation with declines in semantic memory, episodic memory, and working memory but not visuospatial abilities or perceptual speed (4). Understanding exactly the incidence of multiple diseases and the cognitive function in elderly is needed to help to monitor this growing problem.

**Aim:** To characterise the incidence of multiple diseases diagnosis between elderly Portuguese people with cognitive impairment and elderly people without cognitive impairment.

**Methods:** An exploratory descriptive study was conducted in four senior residences of Portugal Centre region. Elderly people were included if they had at least 60 years old and were not bedridden elderly. To assess the cognitive status, it was implemented the Mini-Mental State Examination (MMSE), a simple test of cognitive function based on a total possible score of 30 points. Different cut-off scores were established according to patient's educational level (5). Incidence and identification of diseases were collected through interviews and confirmed in elderly's medical processes. Frequencies and t-tests for independent samples ( $p < 0.05$ ) were used to characterise differences in aging disease incidence between elderly with cognitive impairments and elderly with preserved cognitive function.

**Results:** Hundred and four elderly ( $78.58 \pm 10.30$  years) participated in this study, fifty-four with cognitive impairment. Neurological (30% vs 54%), cardiac (11% vs 6%), orthopedic (30% vs 12%,  $p = 0.028$ ), metabolic (9% vs 8%), earing/vision (9% vs 8%), falling (9% vs 8%), respiratory (6% vs 2%), digestive/kidney (7% vs 4%) syndromes were more incident in elderly with cognitive impairments, comparing with elderly with no cognitive impairment, except for neurological diseases.

As a conclusion, Portuguese elderly people with cognitive impairments demonstrated higher significant incidence in orthopedic disease, but also a trend to higher incidence in cardiac, metabolic, earing, falling, respiratory and digestive/kidney diseases.

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### **How much do long-term aged care staff know about psychotropic medication? Identifying knowledge gaps and evaluating the impact of interactive educational sessions on knowledge about the pharmacological management of common old age mental health conditions.**

Juanita Westbury, Donnamay Brown, Kathleen Franks

**Background:** The Older Age Psychotropic (OAP) quiz was developed as a 10-item validated quiz in which to test the knowledge levels of aged care staff before and after an intervention, RedUSE (Reducing Use of Sedatives) (Westbury J et al, 2010). For the subsequent expansion to 150 homes, (Westbury et al, 2018) a 'don't-know' option was also included to improve internal consistency (Brown D, 2015).

**Aims:** To evaluate and compare the psychotropic knowledge of aged care staff (registered nurses, enrolled nurses and personal care assistants), to assess knowledge gaps and to evaluate the impact of training on their psychotropic knowledge.

**Methods:** Two 1-hour staff training sessions were developed, one at baseline and the second, three months later. The OAP quiz was taken at the start of the first session and repeated at the end of the second session, with the two scores compared.

**Results:** Quiz data was obtained from the full sample of 150 homes at baseline and 145 homes at the 3-month training. More than half (57%) of participants at both sessions were registered nurses; 32% and 37% were enrolled nurses, and 11% and 7% were personal care assistants at the first and second sessions, respectfully. The OAP quiz was completed by 1273 staff at baseline and 780 at 3-months. All staff, in general, knew more about the practical aspects of psychotropic medication such as the reasons they were used. Conversely, their knowledge of adverse effects and guidelines was significantly lower. Average scores differed between the three groups, with scores increasing between training sessions for all categories. The table below



shows baseline and 3-month scores of the three professional groups (N.B. Maximum score is 10/10) Scores were significantly higher at the 3-month training than at baseline, with the average number of correct answers improving from 50% to 70%. Further, 55% of participants had at least one answer reported as 'don't know' at baseline, which reduced to 31% by the 3-month training

Conclusion: The OAP quiz proved effective at identifying the key deficits in staff knowledge. Average psychotropic knowledge scores differed between the three participant groups and increased between training sessions for all levels.

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### **People with Dementia as a Victim of Financial Abuse: A Content Analysis of News Coverage in Taiwan, 2009-2019**

Li-Jung Ku, Yi-Chin Huang, Yu-Ling Huang

Introduction: By 2018, the number of people with dementia (PWD) in Taiwan has exceeded 270,000 (or 8 percent of the population aged 65 and above), according to a nationwide epidemiology study of dementia in Taiwan. PWD not only face difficulty in handling their own finances due to declining mental capacity, but are also vulnerable to financial abuse or scams. This study examines the types of financial abuse, stakeholders involved in the incidence, associated financial losses, and related safeguarding procedures regarding suspected cases of financial abuse reported in the news media over the past ten years (2009-2019).

Methods: Google Searches using keywords including both dementia and financial abuse related terms were performed to identify relevant news sources written in Traditional Chinese language. A thematic content analysis was next performed on 22 unique cases that met the eligibility criteria for this study. The overarching themes and differences were observed as follows.

Results: The cases could be divided into three types of financial abuses by alleged abusers: family members, non-family members, or the PWD oneself due to declining capacity. In the category of family members, the majority of stakeholders involved in the incidence were adult children, followed by the spouse of PWD. The financial losses associated with the incidence included cash, bank deposits, insurance benefit, bullion, housing property, and even debts. In 7 of the 22 cases identified, alert bank professionals reported suspicious scams to the police that led to successful prevention of actual financial losses from taking place.

Discussions: Comparing to the rapidly-increasing civic and criminal cases involving PWD in Taiwan over the past decade, the news coverage of PWD-related financial abuses cases during the same period appeared to be under-reported. Despite this low news coverage, our findings suggest if banking professionals are more alert to the situation faced by the PWD, third-party reports of suspected financial abuse could prevent potential financial losses and safeguard the individual's assets. Therefore, more media attention and dementia-friendly training programs may help to increase the public's awareness of this important issue.

### **Reduction of Inappropriate psychotropic drug use in residents with Dementia: a stepped wedge cluster randomized controlled trial on the effects of tailored intervention- and implementation plans using participatory action research in nursing home residents with dementia**

Charlotte van Teunenbroek, Claudia Groot Kormelinck, Debby Gerritsen, Martin Smalbrugge, Sytse Zuidema

Background: Although guidelines recommend a restricted use of psychotropic drugs because of serious side effects and a limited effectiveness, psychotropic drugs have yet a substantial place in the treatment of neuropsychiatric symptoms in nursing home residents with dementia. Only 9.6% of psychotropic drugs is prescribed appropriately. To reduce inappropriate psychotropic drug use, we used participatory action research to optimize implementation and to enhance the effects of facility tailored interventions.

Methods: We carried out a stepped wedge cluster randomized controlled trial integrated with participatory action research, which allowed us to adapt to local differences and needs of nursing homes. Within the intervention group a problem analysis was carried out to identify local needs with respect to psychotropic drug use and neuropsychiatric symptoms. With this analysis as the basis, a tailored intervention- and implementation plan was chosen. Primary outcome was the reduction of inappropriate psychotropic drug use as measured with the Appropriate Psychotropic Drug Use in Dementia index, secondary outcome was the percentage of psychotropic drug use. Results were analyzed using multilevel analysis according to Twisk et al.

Results: The study was carried out in 16 nursing homes in the Netherlands and we included 576 residents with dementia at baseline, of which 312 used psychotropic drugs. Preliminary results show a small reduction of inappropriate prescribing behavior, yet this reduction is not significant. Future multilevel analyses will take into account the degree of implementation (extent of performance), once the process evaluation is completed. In addition, data on percentage of psychotropic drug use will be analyzed and presented at the conference.

Conclusion: Preliminary results show that both control and intervention groups display a reduction of inappropriate psychotropic drug use. However, this reduction is small and not significant, which suggests that our intervention had no effective contribution, possibly due to suboptimal implementation.

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## FC10: New Research (Session 3)

### Shared Neural Substrates of Cognitive Function and Postural Control in Older Adults Living in Place

Caterina Rosano, Sparto Patrick, Rosso Andrea, Divecha Ayushi

Introduction: Early detection of older adults at risk to develop dementia is a critical public health problem. 1, 2 Current screening approaches are either only useful in those who already have existing impairment (i.e. neuropsychological

assessments), or are too invasive and costly to be used at a population level (i.e. imaging or biomarker measurement). There has been a growing interest in examining postural control as a marker of early cognitive impairment.<sup>3-9</sup> However, the neural correlates of these associations have not been well studied.

**Objective:** To examine postural control as an early indicator of dementia.

**Hypothesis:** Postural sway is higher (e.g. worse) among those with dementia as compared to those with normal cognition (NC) or mild cognitive impairment (MCI). We further hypothesize postural control is inversely related to gray matter volume (GMV) of regions important for cognitive function and memory.

**Methods:** Neuroimaging, posture, and cognition were measured concurrently in 179 adults aged 82.38 (2.51) years, 56% female, 56% white. Posture was measured via a computerized forceplate platform during quiet standing and while performing a visual tracking (VT) task requiring attention.<sup>10</sup> Adjudication of NC, MCI, or dementia was based on ADRC criteria.<sup>11</sup> GMV normalized by total brain atrophy was computed for hippocampus, parahippocampus, entorhinal cortex, basal ganglia, posterior parietal and cingulate cortex.<sup>12</sup> Multivariable regression models tested associations of postural sway with cognitive function and GMV, adjusting for demographics, education, chronic diseases, and neuromuscular characteristics.

**Results:** Postural sway while performing a VT task predicted higher odds of dementia compared to NC (adjusted OR: 2.30, 95% CI: 1.40-3.77). GMV of bilateral hippocampi and left parahippocampus was related to postural sway ( $p < 0.05$ ) and explained >20% of postural sway differences between dementia and NC. Results were similar, albeit weaker for dementia compared to MCI. Results were not significant for quiet standing.

**Discussion:** Postural control while performing a VT task, can distinguish between older adults with dementia and those with either NC or MCI. Selected GMV loss may be contributing both to cognitive impairment and lower postural control. Postural control under attention-demanding conditions may be a clinically useful biomarker to distinguish between dementia and MCI or NC.

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### **Determinants of cognitive performance and decline in diverse ethno-regional groups: the COSMIC collaboration**

Perninder Sachdev, Darren Lipnicki, Steve Makkar, John Crawford, Anbu Thalamuthu, Nicole Kochan, Henry Brodaty

**Background:** Cognitive decline and dementia are growing global burdens, and identifying risk factors amenable to interventions is a priority. However, differences in prevalence or associations with outcomes mean particular risk factors may have differential effects in different populations internationally. We investigated how various demographic, medical, lifestyle, and physical and mental health factors are associated with cognitive performance and decline in numerous ethno-regional groups from around the world.

Methods: We harmonised longitudinal data for 20 cohorts from 15 countries (Australia, Brazil, Cuba, France, Germany, Greece, Hong Kong, Italy, Japan, Singapore, Spain, South Korea, The Netherlands, United Kingdom, United States), for a total of 48,522 individuals aged 54–105 years (58.4% female) at baseline. Each study had 2–16 assessment waves (median=3) and a follow-up duration of 2–15 years. We analysed standardised scores for the MMSE and tests of memory, language, processing speed, and executive functioning, as well as global cognition.

Results: Older age and less education were associated with worse cognition, and women had better memory scores than men. There were significant declines in cognition over time, though less extensively for Asians than Whites (Table 1). At the mean time in study (3.14 years), factors associated with worse performance included anxiety, depression, diabetes, stroke history and poor health, and those associated with better performance included greater physical activity, some alcohol use, and an upper-normal BMI (Table 2). Factors associated with faster decline included an APOE  $\epsilon$ 4 allele, smoking, stroke history, wide pulse pressure and poor general health, while moderate alcohol use and higher diastolic blood pressure were associated with slower decline (Table 3). The effects of risk factors in Asians and Whites differed, often showing a stronger association in one group but sometimes tending to have opposing effects. There were similar regional differences when comparing Asia, Australia, Europe or Latin America against North America (Tables 1–3).

Conclusions: Several health and lifestyle factors are related to cognitive performance and rate of cognitive decline, but their associations vary in strength in different ethno-regional groups. Strategies and interventions to minimise cognitive decline may thus benefit from tailoring to particular ethno-regional groups.

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### **Some psychometric properties of the CASP-19: a preliminary study in community-dwelling older people**

Gabriela L. Frias-Goytia, Cristina Lojo-Seoane, Sabela C. Mallo, María Campos, Ana Nieto, Arturo X. Pereiro

Background: CASP-19 is a scale built to measure quality-of-life (QoL) in aging. It has been used in more than 20 countries and translated into 16 languages proving to be an instrument with good psychometric properties. However, we have not yet information about the Spanish version.

The aim of this preliminary study was to analyze some psychometric properties (i. e., internal consistency, test-retest reliability, convergent and divergent validity, and construct validity) of the Spanish version of CASP-19 in a sample of 515 participants belonging to the Compostela Aging Study.

Method: CASP-19 was adapted to Spanish through forward and back-translations. We recruited people over 50 years old (mean=66.4 years, SD=8.9; range= 50-88) from primary care health centers without previous diagnosis of psychiatric or neurological disorders. Most of them were women (71.5%), married (70.5%) and with a mean of 10.4 (SD=5.13) years of schooling. From the total sample, 44.08% were diagnosed as Mild Cognitive Impairment and 55.92% as cognitively unimpaired. To test convergent and divergent validity we administered Ryff's Psychological Well-Being Scale-PWBS and Cambridge Cognitive Examination-Revised-CAMCOG-R respectively. The predictive validity was assessed the short version of the Geriatric Depression Scale-GDS-15.

Results: Cronbach's alpha indicated good internal consistency ( $\alpha=.82$ ). The Split Half Reliability showed similar levels of internal consistency for the two halves ( $\alpha$ 1st half=.78;  $\alpha$ 2nd half=.71). Spearman's correlation coefficients for the test-re-test reliability ( $r=.89$ ) showed almost excellent levels. Convergent (CASP-19/PWBS;  $r=.66$ ) and divergent (CASP-19/CAMCOG-R;  $r=.22$ ) validity values were acceptable. The Exploratory Factor Analysis (KMO=.84; Bartlett's test  $p<0.01$ ), carried-out on the cognitively unimpaired participants, confirmed the original structure of the scale. All items loaded on the four factors model, explaining the 49% of the total variance. The predictive validity showed reverse correlation with GDS-15 ( $r=-.73$ ). Age and sex did not show significant correlations.



Conclusions: Spanish version of CASP-19 showed good psychometric properties (test-retest reliability, internal consistency, convergent and divergent validities) proving to be a valid and reliable instrument. The structure was similar to that showed for the original version, although level of explained variance was moderate. The predictive results indicated that as the depression symptomatology increased, the QoL decreased.

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### **Peripheral blood biomarkers coupled with the Apolipoprotein E4 genotype are strongly associated with semantic and episodic memory impairments in elderly subjects with amnesic mild cognitive impairment and Alzheimer's dementia**

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**Background:** The Apolipoprotein E4 (ApoE4) genotype is strongly associated with Alzheimer's disease (AD), although the presence of the ApoE4 allele alone is not sufficient to explain AD. The pathophysiology of amnesic mild cognitive impairment (aMCI) remains unclear. This study aims to examine associations between peripheral blood biomarkers coupled with ApoE4 and episodic and semantic memory.

**Methods:** The CERAD battery was completed and various biomarkers were assayed in 60 subjects with aMCI, 60 with AD and 62 healthy controls.

**Results:** Deficits in semantic and episodic memory were significantly predicted by anion gap and bicarbonate, albumin and glucose coupled with Apo E4. Furthermore, these peripheral biomarkers interacted with ApoE to predict greater memory impairments.

**Conclusions:** Peripheral blood biomarkers may interact with pathways related to ApoE4 to predict greater semantic and episodic memory impairments, thus contributing to the pathophysiology of aMCI and AD. Our data suggest that the transition from aMCI to AD could at least in some cases be associated with significant interactions between ApoE4 and those peripheral blood biomarkers.

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### **Cognitive functioning and cortisol reactivity to stress among older adults: Does the association varied according to sex?**

Catherine Lamoureux-Lamarche, H  l  ne Forget, Yvon Chagnon, Helen-Maria Vasiliadis

#### Background and objectives

Cognitive functioning has been associated with daily cortisol levels in older adults (Beluche et al. 2010; Greenling et al. 2015). However, few studies have looked at the association between cognitive functioning and cortisol reactivity to stress in older adults. The objectives were to study the association between cognitive functioning and salivary cortisol levels, in an epidemiologic setting, and to assess whether sex moderates this association in community living older adults.

#### Methods

This study included 703 older adults ( $\geq 65$  years) who participated to subsequent waves of the ESA-Services longitudinal study (2014-2016) and did not present with cognitive impairment at baseline (2011-2013), that is  $\geq 22$  on the Mini Mental Scale Examination (MMSE) (Folstein et al. 1975). Cognitive functioning was measured 3 years (wave-2) and 4 years (wave-3) after baseline with the MMSE. Salivary samples were obtained during wave-3 data collection at the beginning (S1) of the at home interview and towards the end of the interview (S2), after having responded to questions on the presence of family violence, adverse childhood experiences, traumatic life events and post-traumatic stress symptoms. Salivary cortisol samples were analyzed using ELISA cortisol kits with the reagent provided. Cortisol reactivity was measured as the increase (reference) or

decrease of cortisol levels (Nmol/L) (S2 – S1). Multivariate logistic regressions were carried out to study the cortisol reactivity as a function of the cognitive status controlling for demographic and clinical factors. The analysis was then stratified by sex.

#### Results

The results showed that for every increase in MMSE score at wave-2 there was a 1.10 (95% CI: 1.01-1.21) times likelihood of a decrease in cortisol levels post stressor. When stratified by sex, this association was only significant in women (OR 1.18; 95% CI 1.04-1.35). Overall, the MMSE score at wave-3 was not associated with cortisol reactivity. However, the stratified analyses showed an association in women (OR 1.12; CI 1.00-1.25).

#### Conclusions

Better cognitive status was associated with lower cortisol reactivity in women. This was not observed in older men. Future studies should focus on these gender differences and underlying mechanisms.

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### **Canadian Guidelines for Older Adults: Prevention, Assessment and Treatment of Alcohol, Benzodiazepine, Cannabis and Opioid Use Disorders**

David Conn, Kiran Rabheru, David Hogan, Peter Butt, Marilyn White-Campbell, Launette Rieb, Zena Samaan, Jonathan Bertram, Amy Porath, Dallas Seitz

The Canadian Coalition for Seniors' Mental Health received funding from Health Canada to develop evidence-based clinical guidelines, focusing on Substance Use Disorders among older adults. Four sets of guidelines have been developed and a series of user-friendly tools are being produced. The guidelines focus on best practices for the prevention, screening, assessment and treatment of Alcohol, Cannabis, Benzodiazepine and Opioid Use Disorders among older adults. The guidelines have been prepared by 4 multidisciplinary working groups each consisting of 8-10 experts from the fields of geriatrics, addiction and mental health from across Canada. Each group included "a person with lived experience". The guidelines target all healthcare providers who care for older adults. Because of physiological changes, older adults are much more vulnerable to the negative effects of substance use and misuse. Physical health problems and long-term prescription of certain medications are important factors in the development of substance misuse in older people. Substance use disorder may also be co-morbid with a range of physical and mental conditions including chronic pain, falls, cognitive disorders, depression, anxiety, self-harm and suicide. Its development can also be effected by psychosocial issues often experienced by older adults such as loneliness and bereavement. The unique physiological, psychological, social and pharmacological circumstances of older adults, which make them more vulnerable to the effects of substances, will be outlined. Some key Guideline Recommendations regarding prevention, assessment and treatment of Substance Use Disorder among older adults will be summarized. The Guidelines will be available for download from [www.ccsmh.ca](http://www.ccsmh.ca)

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# Posters

## **P1: Study on the acceptability of an ICT platform for older adults with mild cognitive impairment**

Leslie Maria Contreras Somoza, Eider Irazoki, Diana Castilla, Cristina Botella, Jose Miguel Toribio Guzman, Esther Parra Vidales, Carlos Suso Ribera, Pilar Suarez Lopez, Maria Victoria Perea Bartolome, Manuel Angel Franco Martin

Cognitive impairment makes older people vulnerable to social isolation which also poses a threat to their independent living by affecting their cognitive and motor skills, besides it increases their mortality. Therefore, it is important the development of tools aimed at fostering social interaction as well as cognitive stimulation and training to improve the elderly population's wellbeing. EhcoBUTLER is an Information and Communication Technology funded by the European Union (H2020; ID: 643566) and intended especially for elderly people with mild cognitive impairment to improve their health, independence and quality of life, particularly at the social level. In order for this tool to be developed, the needs and expectations of the users must be taken into account, which will favor its acceptability.

**Objective:** The purpose of this study is to assess the acceptability of ehcoBUTLER based on a survey delivered to potential users and actors involved in their care, exploring their expectations and preferences, while anticipating the system's functional requirements.

**Method:** The online survey was completed by 375 representative users from eight countries, but 62 did not meet the inclusion criteria. The analysis was based on the answers of 313 participants (11% end users, 25% informal caregivers, 48% formal caregivers and 16% administration/management staff).

**Results:** Participants rated the different functionalities of ehcoBUTLER positively, 86.1% perceived it as an interesting and useful system. Likewise, they assessed it as a commercially attractive product (75.1%). End users expressed a stronger preference for the social module. Nevertheless, they would be ready to pay a low monthly price for ehcoBUTLER, but administration and management staff would be willing to pay the highest price for it. Professionals would be willing to pay choosing its functionalities modularly, but they would also expect it to be funded by the National Health System, centres or businesses.

**Conclusion:** All participants found ehcoBUTLER interesting, useful and ergonomic. However, to effectively implement it, it is necessary to bridge the digital gap and address the issue of insufficient investment in products aimed at older adults with cognitive impairment. To supplement cognitive training systems with social, emotional or entertainment functionalities could improve adherence to their use.

## **P2: Cognitive impairment in older adults with depression and diabetes mellitus in a specialized psychogeriatrics outpatient clinic in Mexico.**

Luis Moncayo-Samperio, Ismael Aguilar-Salas, Oscar Ugalde-Hernández

**OBJECTIVE:** To determine cognitive functions in older adults with depression and diabetes, according to their glycemic control, as well as the repercussions this could have on self-care abilities and functionality.

**BACKGROUND:** Diabetes is one of the main causes of morbidity and mortality in the world. In Mexico the highest prevalence is observed among men aged 60 to 69 years (29.7%) and women of this same age range (32.7%). The control of the disease among these patients is poor: 38% of patients are in poor control and 56% in very poor control. International studies have shown a correlation between type 2 diabetes and cognitive impairment, so in this study we seek to replicate these findings in a clinical population in Mexico, adding depressive factor, as well as functionality and diabetes self-care abilities.

**MATERIALS AND METHODS:** In this study 20 patients were enrolled at the psychogeriatrics clinic of the National Institute of Psychiatry of Mexico. Each patient had been diagnosed with depression, type 2 diabetes and underwent metabolic profile studies (including blood glucose and A1C test), according to this results they were divided into 2 groups (controlled and uncontrolled diabetes). Cognitive functions, diabetes self-care abilities and functionality were measured with the following instruments: • Yesavage depression scale • Mini Mental State Examination (MMSE). • Clock Test to order • Katz Index • Summary of Diabetes Self-care Activities.

**RESULTS:** Out of the 20 patients that were enrolled in the study 10 of them had controlled diabetes while the other 10 were uncontrolled. Patients with uncontrolled diabetes performed worse in the MMSE with an average score of 23.2 points compared with the 26.4 of the controlled group. Both groups revealed poor self-care abilities, with the controlled group performing slightly better with an average score of 19/50. Functionality remain stable in both groups according to de Katz Index with 85% of patients being independent to perform all basic activities of daily living.

**CONCLUSIONS:** Our findings suggest that depressed patients with uncontrolled type 2 diabetes performed worse at cognitive functions and in diabetes self-care abilities, without any repercussions to basic activities of daily living,

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### **P3: Motor disorders associated to depression in elderly patients. Literature review.**

Beatriz Banga González, Yolanda Pieta Paredes, Vanesa Aller Lavandeira, Alfonso Núñez Boquete, Luis Miguel Martínez Agulleiro, Sonia María Gómez Pardiñas

In elderly patients, somatic symptoms are frequent manifestations of depressive disorders, appearing in up to 65% of cases. Among them, motor symptoms have special relevance, because of their frequency and because they are often underdiagnosed, leading to erroneous diagnoses of dementia or Parkinson's disease.

With this work we propose to clarify which are the most frequent alterations of the movement in the depression in elderly patients and what are their neurobiological bases. For this purpose, a review of the available literature is made in the main databases (Pubmed and Embase), using as key words: depression, motor alterations, motor signs, motor symptoms and elderly. At the beginning, 30 articles were obtained, and 13 were finally selected, using as inclusion criteria those articles that describes the motor alterations in the elderly patients secondary to a depressive episode, removing those articles that described depressive symptoms secondary to motor pathology. It is also illustrated with a clinical case.

It is a 65-year-old woman, who presented a compatible clinic with a severe depressive episode with psychotic symptoms for more than a year, with significant somatic component (weight loss, digestive problems, bradykinesia and tremor) having been diagnosed at the beginning, by Neurology, of dementia and pharmacological Parkinsonism. The patient made a suicide attempt, so she was admitted to the psychiatric hospitalization unit. She didn't improve with different psychopharmacological approaches, so it was necessary to apply ECT. After 11 sessions he recovered the euthymia and remitted the psychotic symptoms as well as the somatic symptoms and within them the motor alterations.

As the main results of this review, we have seen that the most frequent movement disorders in depression in the elderly consist in both agitation and motor slowing, consisting of increased decision time, motor response and total reaction, and reduction of the speed of movement.

These alterations have their neurobiological basis in the reduction of cerebral dopamine levels. Current results support a common underlying mechanism in Parkinson's disease and melancholic depression.

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#### **P4: Development of new biomarkers for the early diagnosis of Alzheimer's disease based on proteomic techniques.**

Daniela Rodrigues-Amorim, Tania Rivera-Baltanás, María Blanco-Formoso, Cynthia Rodríguez-Jamardo, Marta Iglesias-Martínez-Almeida, Patricia Fernández-Palleiro, María del Carmen Vallejo-Curto, Elena De las Heras, Jose Manuel Olivares, Carlos Spuch

In neurodegenerative diseases a progressive loss of cells of the CNS occurs. One of the reasons why this phenomenon occurs is due to the activation of neuroinflammation, at least, it has been shown that this phenomenon precedes the clinical symptomatology of these diseases.

Within the neuroinflammatory phenomenon, MMPs are essential and play an important role in their activity. Although MMPs are indispensable for the physiological development and functioning of cells, as it is the case with inflammation, they have a dual behaviour, given that their excess activity or malfunctioning is capable of inflicting substantial damage in various neuropathological conditions. The activity of MMPs is strictly controlled, and their deregulation leads to a variety of pathologies. This activity is the responsible of RIP signaling in several receptors, such as Lipoprotein Receptor-related Protein (LRP) and others.

We developed a new patent focused for the diagnosis of Alzheimer's disease (AD). The method comprises measuring the level of expression or the concentration level of LRP fragment thereof. In 2015, we published that sLRP2 has been linked to AD by clearing brain A $\beta$  across the BCSFB at the choroid plexus. Here, we found a soluble form of LRP2 secreted from choroid plexus epithelial cells that has being reduced in CSF samples of AD patients. We identified new potential biomarkers by LC-ESI-MS/MS, identifying new soluble fragments of both receptors (LRP1 and LRP2) in CSF and blood samples, three new LRP2 fragments (220KDa, 86KDa, 40KDa) and two for LRP1 (85KDa, 48KDa). We described the levels of sLRP2-220 in CSF and serum samples in AD patients and also diagnosed with Major Depressive Disorders with ages between 45-60 years and controls. We quantified the levels by ELISA and found that the CSF levels are decreased in AD patients and are correlated with the progression of the disease and in serum the levels of sLRP2 decrease significantly ( $p < 0.05$ ) in MDD patients as compared with healthy controls

This results suggested that sLRP2 and sLRP1 could be used as a potential biomarker of AD and early stages of the disease. Funding: Rede Galega de Investigación en Demencias, GAIN (REGIDEM IN607C 2017/02), IN607B 2018/17, ISCIII project P16/00405, CIBERSAM and ACIS (PRIS2-17)

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#### **P5: Salivary cortisol levels and perceived antidepressant nonresponse for anxiety and depression in older adults.**

Helen-Maria Vasiliadis, Catherine Lamoureux-Lamarche, Yvon Chagnon, Hélène Forget

Background: Up to 55% of older adults with depression and 35% with anxiety do not respond to antidepressant (AD) therapy [1-3]. A recent meta-analysis [4] on HPA axis functioning -and AD response reported important heterogeneity in studies: Higher pre-treatment cortisol levels in non-responders while others showed lower cortisol levels in depression. The aim was to assess in older adults if cortisol reactivity was associated with a history of AD non-response in an epidemiologic setting. Methods: The sample consisted of n=59 older adults ( $\geq 65$  years) recruited in primary care reporting AD use and participating in Quebec's Étude sur la Santé des Aînés-Services longitudinal study (2011–2017) and having agreed to produce saliva samples. Perceived AD nonresponse was based on whether during the past 5 years there was improvement in symptoms while taking AD and whether physician added an AD to increase effectiveness (yes/no) [5]. Salivary cortisol samples were kept on ice and frozen rapidly at  $-20^{\circ}\text{C}$ . ELISA cortisol kits with the reagent provided were used following the manufacturer's directions (Salimetrics, LLC, State College, PA). Salivary samples were obtained at the beginning (S1) of the in-home interview, towards the end of the interview (S2), after having responded to questions on the presence of traumatic life events,

adverse childhood experiences and family violence. Multivariate logistic regression was used to study AD nonresponse as a function of cortisol reactivity (increase yes/no) of cortisol levels (Nmol/L) (S2 - S1). Analysis controlled for sex, age, number of chronic physical conditions, physical activity (# of times exercised per week), psychological distress (K-10; GAD-7), beliefs about medicines questionnaire and time of interview.

Results: AD non-responders were 12.7 OR (95% CI: 1.6, 103.0) times more likely to show increased cortisol reactivity following interview stressors.

Conclusions: In epidemiologic settings, older adults with a history of AD nonresponse show higher cortisol reactivity following stressors. Future focus should be aimed to study whether psychotherapy that can lead to coping strategies and locus control can improve outcomes in older adults.

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### **P6: A Descriptive Analysis about cognitive performance before and after (4 months) cognitive rehabilitation treatment by using or not the GRADIOR program in people with MCI and mild dementia- Randomized Clinical Trial (RCT)**

Angie Alejandra Diaz-Baquero, Manuel Ángel Franco-Martin, Henriëtte Van Der Roest, María Victoria Perea Bartolomé, José Miguel Toribio-Guzmán, Esther Parra-Vidales

Cognitive rehabilitation is a highly individualised, non-pharmacological intervention for people with mild cognitive impairment (MCI) and dementia to support coping with cognitive deficits. This paper shows the preliminary results on the evaluation of the effectiveness of the cognitive rehabilitation program Gradior on the cognition of people with mild cognitive impairment and mild dementia. Method: A Randomized Controlled Design was adopted. Persons with MCI and mild dementia were randomized. The experimental group (n = 16) with an age between 73-84 (M: 79, 63 DS: 3, 37) followed Gradior training twice a week, for four months; in this group, there were 3 (37, 5%) people with MCI and 5 (62, 5%) people with mild dementia for each of the pre and post-intervention conditions. The control group (n = 16) with an age between 65-88 (M: 74,25 DS: 7,16) received care as usual; in this group, there were 6 (75%) people with MCI and 2 (25%) people with mild dementia for each of the pre and post-intervention conditions. At baseline and four month follow-up the Gradior evaluation protocol (Vanova, et al. 2018) was applied, containing a battery of cognitive tests. Results: A descriptive analysis was made comparing the experimental and control group for pre and post-intervention conditions. We found the following: Increase of means for the tests at 4 months of intervention with respect to the baseline in control and experimental group, except in the Adas Cog test. The control group had higher means compared to the experimental group for both conditions (Pre-post Intervention) in the tests: digits, processing speed, arithmetic, semantic fluidity, phonological fluency P and M; however, the experimental group presented higher means compared to the control group for both conditions (pre-post-intervention) for the AdasCog test. Discussion: The results indicate that there is an increase in the cognitive performance at 4 months of intervention with respect to the baseline in the control and experimental group. The cognitive performance in the tests was greater for the control group compared to the experimental group; however, there was a greater performance of the experimental group with respect to the control group in the AdasCog test

Vanova, M., Irazoki, E., García-Casal, J. A., Martínez-Abad, F., Botella, C., Shiells, K. R., & Franco-Martín, M. A. (2018). The effectiveness of ICT-based neurocognitive and psychosocial rehabilitation programmes in people with mild dementia and mild cognitive impairment using GRADIOR and ehcoBUTLER: study protocol for a randomised controlled trial. *Trials*, 19(1), DOI 10.1186/s13063-017-2371-z.

### **P7: First consultations attended in a psychogeriatric unit of a second level hospital, in six months**

Yolanda Prieto, Sonia Gomez

The Catchment Area of the Ferrol University Hospital attends a population near to 200,000 people. It is an area with a high population aging. In the Psychiatry Service of this area we have a Psychogeriatric Unit with 1.5 psychiatrists and one administrative to serve this population.

With the present study we describe the socio-demographic and clinical characteristics of the population attended in the last six months in our unit. For that, we drive an observational and descriptive study of socio-demographic and clinical variables of the population attended in first consultations by the Psychogeriatric Unit of the health area in a six months period, between November 1, 2018 and April 30, 2019.

It is a population group that includes patients older than 65 that are referred to the Unit by other psychiatrists of the service based on certain criteria.

Within the sociodemographic variables, sex, age, marital status, coexistence situation or social support resources are included, among others.

Regarding the clinical variables, origin and reason for referral to the Unit are studied, as well as diagnosis and treatment fundamentally.

The data is collected from the medical records and from the referral sheets to the Unit.

**P8: Is it possible to develop a complex intervention to improve the outcome of fall-related Injuries in people with dementia? A mixed methods study to develop and assess the feasibility of the DIFRID intervention**

Louise Allan, Alison Wheatley, Amy Smith, Elizabeth Flynn, Chris Fox, Robert Barber, Denise Howell, Fiona Beyer, Tara Homer, Claire Bamford

Background: Fall-related injuries are a significant cause of morbidity and mortality in people with dementia (PWD). There is presently little evidence to guide the management of such injuries, and yet there are potentially substantial benefits to be gained if the outcome of these injuries could be improved. This study aimed to design an appropriate new healthcare intervention for PWD following a fall and to assess the feasibility of its delivery in the UK National Health Service.

Design: Mixed-methods feasibility study.

Methods: A systematic review explored the existing evidence base and developed programme theories. Qualitative methods (semi-structured interviews, focus groups, and observation) were used to explore: current practice; stakeholder perspectives of the health and social care needs of PWD following a fall; ideas for intervention; and barriers and facilitators to change. Each of these datasets informed intervention development, via Delphi consensus methods. Finally, a single-arm feasibility study with embedded process evaluation was conducted.

Setting: Community.

Participants: PWD presenting with falls needing healthcare attention in each setting at 3 sites and their carers.

Interventions: A complex multidisciplinary therapy intervention delivered in PWDs' own homes. Physiotherapists, occupational therapists, and support workers delivered up to 22 sessions of tailored activities in the PWD's home or local area over a period of 12 weeks.

Main outcome measures: Assessment of feasibility of study procedures; assessment of the acceptability, feasibility and fidelity of intervention components; assessment of suitability and acceptability of outcome measures for PWD and carers (number of falls; quality of life; fear of falling; activities of daily living; goal setting; health utilisation; carer burden).

Results: The intervention was delivered to 11 PWD. The study suggested that the intervention is both feasible and acceptable to stakeholders. A number of modifications was recommended to address some of the issues arising during feasibility testing.

Measurement of outcome measures was successful.

Conclusions: The study has highlighted the feasibility of delivering a creative, tailored, individual approach to intervention for PWD following a fall. Although the intervention required greater investment of time than usual practice, many staff valued the opportunity to work more closely with PWD and carers.

**P9: A Perceived Needs Assessment after Natural Disaster using the HESPER Scale: Puerto Rican elderly after Hurricane Maria.**

Ginette González-Ramírez, Ivonne Jiménez-Velázquez

Disaster-related stressors have a significant influence on the mental and functional capacity and the thus the health of the geriatric population. The Humanitarian Emergency Settings Perceived Needs (HESPER) Scale was used for the first time in Puerto Rico to measure the possible problems faced by individuals 65 years and older after Hurricane Maria. A Cross Sectional Community Survey (n=1000) was conducted in hurricane affected Puerto Rico, using the HESPER Scale, where the sample was divided into four age groups (65-75, 75-85, 85-95, 95 and older) for comparison between the frequency of perceived needs. Comparison was also made in terms of time (6 months-1 year after the disaster event), gender, housing (government public housing vs private), geographical area (rural vs urban), and prioritization (top three most serious problems). The effects of health and distress on the perceived needs was also assessed. The results displayed common perceived needs through all age groups, with health and distress predominating as top and recurring necessities.

Approximately half (44.3%) of participants reported living with a serious health issue while, about a third (31.2%) perceived themselves experiencing a seriously distressed state. Although health and distress persisted as the two most frequent perceived needs in every age group, disparities emerged between the third most frequent need, being income, transportation and separation from family members in an ascending age group order. The results were consistent after six and twelve months reevaluations. Adequate help had the largest change when compared 6.35% at six months and 20.45% at one year. Participants that perceived themselves lacking adequate medical attention were nine times (OR: 9.12) as likely to report suffering a serious health issue. Likewise, participants that reported serious needs concerning transportation and hygiene were about six times (OR: 6.76/OR: 6.44 respectively) as likely to perceive themselves as having a health issue.

Interestingly, a smaller correlation (OR: 3.55) was observed between distress and health. 221 participants identified with dementia died, relocated outside the catchment area or unable to answer. Data gathered after natural disaster is important for future public policy considering the elderly which continue to be a growing and vulnerable demographic.

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### **P10: Cultural differences in attitudes to aging: a comparison between Portugal and Spain**

Laura Rubio, Margarida Pedroso de Lima, Cristina G. Dumitrache

**Background:** Attitudes towards aging are shaped from childhood to old age, and from a societal level to an individual level. They lead to a negative societal conception of old age that entail negative consequences for the individuals who grows old. Also, since stereotypes can become self-perceptions and negatively influence the subjective experience of aging, they compromise active and successful aging.

The AAQ assesses the subjective perception of ageing, focusing primarily on three different aspects of ageing: Physical Changes (PC), Psychosocial Loss (PL) and Psychological Growth (PG). This instrument allows to understand how individuals age in different contexts and cultures, how they develop and assimilate attitudes towards aging and identify stereotypes and gains and losses associated with old age.

**Aims:** To explore the attitudes towards aging of the elderly people from two different cultural contexts, Portugal and Spain, and to analyze differences according to gender and age group (age younger than 80 years-old and 80 plus).

**Method:** A cross-cultural design was used with a sample of 71 Portuguese and 73 Spanish elders (32.9% men, and 67.1% women) aged 60 years-old and older, who provided data on sociodemographics and filled the Attitude to Aging Questionnaire (AAQ). MANOVAS analyses were carried out to test the interaction between attitudes towards aging, nationality, gender and age.

**Results:** The MANOVA analysis showed a main effect of age group and cultural context on participants' attitudes towards aging. Specifically, the Portuguese elderly scored higher on physical changes than Spanish elderly. On the other hand, people with ages over 80 years-old scored higher on psychosocial loss than young older people. Similarly, an interaction effect was found between gender and the cultural context, Portuguese men scored higher in psychosocial loss than Spanish men, but there are no differences between the women from both countries.

**Conclusions:** Attitudes towards aging seem to be influenced by the cultural context, at least in some of its components. So being aware of culture stereotypes about ageing is very important because they can influence attitudes towards ageing and, consequently, the aging process of older adults' life satisfaction, well-being and life project.

### **P11: Not all orthopaedics units are the same: Lessons Learnt. A comparison of delirium care practices in hospitalised older hip fracture patients in Australia and Netherlands**

Tarandeep Oberaj, Ruurd Jaarsma

Delirium is a complex clinical syndrome characterised by disturbed consciousness, attention, cognitive function, or perception that usually develops over hours to few days (Young et al., 2010). While delirium can occur in patients of any age, older patients with cognitive impairment, dementia, severe medical illness or a hip fracture are considered those at greatest risk during a hospital admission (Young et al., 2010).

Various best practice guidelines provide healthcare professionals in the acute care setting with a set of evidence based recommendation statements regarding optimal care of older adults with delirium (American Geriatric Society 2015, Leentjens et al., 2014, ACSQHC 2016).

In this study we focus on environmental setups, routine nursing practices and family engagement in hospitalised older hip fracture patients with delirium. We aim to compare these three components as performed at an orthopaedic unit in a trauma centre in Australia with an orthopaedic unit in a trauma centre in the Netherlands.



Participant observation was identified as the most appropriate method as it allows for the regular nursing practices to be observed first hand, undertaking their normal responsibilities in their normal setting (Mulhall, 2003).

Data was collected on environmental setup, routine nursing practices whilst undertaking normal care and responsibilities, nurse interaction with family as well level of family engagement allowed in the care of older hip fracture patients. Data was analysed using descriptive statistics and thematic analysis.

Patients with hip fracture experiencing delirium related symptoms were observed to anticipate holistic and patient-centered care. The environmental set-up, clinical care practices and processes followed by nurses and level of family engagement permitted in the two orthopaedic units was vastly different. The trauma center in Netherlands provided systematic high level of person-centered care. The patient environment was set up to encourage re-orientation and independence. The clinical care processes followed by nurses were deeply embedded in the routine care. The provisions made by the trauma center in Netherlands promoted high level of family engagement.

Despite the guidelines giving recommendations to clinicians on early detection, prevention and management of delirium the actual practices in the various clinical settings across the globe remains vastly different.

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## **P12: Prevalence and risks factors for Delirium among Patients admitted to Intensive Care Units: data from an Italian multicenter study.**

Luca Bianchetti, Enrico Tinti, Alessandra Marengoni, Giuseppe Bellelli

**Objectives:** To identify prevalence of delirium among patients admitted to Intensive Care Units (ICUs) and to assess the association between development of delirium and subjects' demographics, medical conditions, reason for ICU admission, drugs administered and the use of restraints.

**Methods:** All the data have been gathered through a multicentric cross-sectional study called "Delirium Day" which took place on September 27, 2017. The study enrolled 2944 patients hospitalized in Medical and Surgical facilities, Emergency Rooms, ICU and Rehabilitation Ward. Only data from the 261 patients admitted to ICUs have been analyzed. Delirium has been diagnosed through the CAM-ICU scale (Confusion Assessment Method for ICU). Results are presented as descriptive statistics (percent, mean, standard deviation) and inferential statistics (Chi-square test, odds ratio (OR) with 95% confidence interval (CI), Student's- t-test for independent samples).

**Results:** of the 261 patients 160 were male. The mean age was 65.3 (SD 16.79). 36 subjects (13.79%) received a diagnosis of delirium. Patients who developed delirium were older (71.3 vs 65.3,  $p=0.022$ ) and were more likely to have been admitted to the ICU for intensive treatment (OR 2.47; 95%CI =1.13–5.92). Delirium patients had a lower prevalence of sepsis (OR=0.39; 95% CI=0.18–0.84) or renal failure (OR=0.36; 95% CI=0.15–0.85), but more likely needed a tracheostomy tube (OR: 2.21; 95%CI=1.07–4.58) or a central venous catheter (OR: 3.39; 95%CI=1.00–11.50). Patients diagnosed with delirium received overall more drugs (8.9 vs 7.3,  $p=0.025$ ) and among these a statistically significant association has been found with antibiotics (OR: 2.32; 95%CI=1.10–5.31) and typical antipsychotics (OR=11, 5; 95% CI=2.4-55.3). Patients developing delirium were more likely to be subjected to restraint devices (OR: 5.33; 95%CI=2.54–11.17).

**Conclusions:** Data from our study show a high prevalence of delirium among older patients admitted to the ICU. We found an association between this condition and both a high number of administered drugs and specific drug classes, such as typical antipsychotics and antibiotics. The main strength of this study is the relatively high number of subjects recruited from several different centers, although its cross-sectional design does not allow to infer causality.

## **P13: Activities in Nursing Home Residents: the Association between specific Activity Components and Depression**

Inge A.H. Knippenberg, Ruslan Leontjevas, Jennifer S.A.M. Reijnders, Jacques J.D.M. van Lankveld, Debby L. Gerritsen

**Background:** Research indicates that participation in activities contributes to decreased depressive symptoms among nursing home (NH) residents. However, more insight is needed into which specific activities are more effective.

**Objectives:** To longitudinally explore the association between activities and depressive symptoms of NH residents, taking into account that each activity may contain multiple components (i.e., physical, creative, social, cognitive, and musical).

**Method:** A study with a baseline and two follow-ups (four and eight months). Participants were forty physically frail residents of four NHs in the Netherlands. Residents were interviewed about depressive symptoms (CES-D) and activities they conducted over the previous week. Three researchers independently scored each activity on the degree to which it could be regarded as



having physical, creative, social, cognitive, and musical components. The researcher's average score per component of the activity and the time the resident spent on that activity determined four activity levels: absent, low, medium, and high. Results: Compared with the lowest activity level, mixed models predicting depressive symptoms from individual activity components showed less depressive symptoms for medium and high levels of the creative and social components, and for the high level of the cognitive component. However, a mixed model adjusted for all activity components showed no unique effect of the cognitive component, while the effects of creative and social components remained significant. The analyses did not show a temporary effect (i.e., differences between the baseline and the two follow-ups).

Conclusion: The results suggest that the effects of activities on depressive symptoms might be explained by their creative, social and, to some degree, cognitive components. It can, thus, be advisable to develop and apply interventions that combine these activity components. However, intervention research is needed to confirm the suggested causal relationships.

#### **P14: AGEDEP: Building an International Consortium on Geriatric Depression**

Simone Reppermund, Sarah Cohen-Woods, Henry Brodaty, Helen Christensen, Julian Trollor, Karen Mather, Perminder Sachdev

Background: The aetiology and pathophysiology of late-life depression (LLD) and differences between early-onset and late-onset depression are not well understood. Given the increasing ageing population, it is crucial to understand the disorder and its implications in more detail to advance treatment and preventative strategies. We propose an international consortium to pool relevant data to investigate the aetiology and pathophysiology of LLD, with a focus on late-onset depression, by uncovering the genetic, biological, psychological and environmental determinants and their interactions.

Methods: National and international study leads of population and clinical studies will be/have been invited to join the consortium. We will perform joint or mega-analyses using combined, harmonised datasets that yield collated results with enhanced statistical power, in addition to comparisons across geographical regions, ethnicities and sociocultural groups. By combining studies and analysing pooled data, we will be able to examine environmental and bio-markers of LLD with sufficient statistical power.

Results: We have contacted relevant international collaborators and received positive feedback. CHeBA contributes to the consortium with data from 3 ongoing, longitudinal studies: 1) The Older Australian Twins Study investigates healthy brain ageing in older twins (65+ years), 2) The Sydney Memory and Ageing Study examines clinical characteristics and prevalence of mild cognitive impairment and determines the rate of change in cognition over time, 3) The Sydney Centenarian Study investigates determinants of successful aging in a cohort of very old Australians (95+ years). All studies include measures of depression, cognition, physical health, genetics and biomarkers.

Conclusion: The consortium will address the global unmet health priority of understanding the aetiology of LLD through collaboration, innovation and partnership. By pooling data and knowledge, we will shed light on the aetiology and pathophysiology of LLD and will contribute to the knowledge base for the development of prevention and treatment strategies.

#### **P15: Antidepressant Strategies Used by Nursing Home Carers Alongside or in Place of Official Treatment in Dementia: Preliminary Results of a Group Concept Study**

Peter Reniers, Ruslan Leontjevas, Slavi Stoyanov, Inge Knippenberg, Jacques Van Lankveld, Debby Gerritsen

Depression is an undertreated problem in nursing home (NH) residents with dementia (RwD), associated with increased mortality and low quality of life. Our previous research on a multidisciplinary depression care program suggested that NH staff might change their behaviour towards a RwD alongside or in place of an official treatment after a depression has been diagnosed. A carer can act deliberately (intentionally) or intuitively (spontaneously, e.g. a spontaneous hug to comfort a sad RwD). Research on such informal Deliberate and Intuitive Antidepressant Strategies (DIAS) is lacking. We conducted a Group Concept Mapping to reveal potential DIAS that professional carers might use alongside or in place of an official treatment. We used an online package to combine qualitative and quantitative approaches for generating and structuring content. Individual coding schemes were aggregated across professional carers (N=15) to objectively reveal thematic clusters. First, participants provided their ideas on DIAS. Second, they sorted the strategies and rated them on feasibility and importance to reduce depression in RwD. The hierarchical cluster analysis revealed seven categories: Planned Activities (e.g. painting, petting animals); Physical Contact (e.g. holding hands); Physical Involvement (e.g. involvement in housekeeping activities); Family Input and Reminiscence (e.g. using familiar items in the residents' room); Acknowledging Emotions (e.g. listening to the RwD); Empathetic and Structuring Actions of Carers (e.g. providing structure); and Pleasant and Stable Environment (e.g. pleasant odours in the living area). Surprisingly, carers rated Planned Activities as the least important and least feasible, while the category Pleasant and Stable Environment was rated as most important and Acknowledging Emotions as most feasible to reduce depression in RwD. It is necessary to repeat this study with a larger group of participants to seek confirmation of the DIAS categories. Further research is needed to explore which strategies are the most effective for reducing depression in RwD. Furthermore, more insight is needed to understand whether our results reflect the attitudes of NH staff that may affect their deliberate or intuitive actions.

**P16: Antidepressant treatment resistance in elderly with depression: Taiwan experience**

Cheng Chih-Ming, Chen Mu-Hong, Tsai Chia-Fen

Background: Major depressive disorder (MDD), especially treatment resistance depression contributes to elevate the morbidity and mortality in elderly, which impacted significantly on the late life. However, what factors may influence and associate with the treatment resistant in depression needs further evaluation.

Method: MDD patients aged  $\geq 65$  years and the prescribed medication were identified from the Taiwan national insurance database and followed for one year from the enrollment time. After evaluating the antidepressant prescription regimen in a year, all patients were divided into four antidepressant response groups according to the antidepressant treatment regimens and the response to antidepressant. Psychiatric comorbidities and physical comorbidities and urbanization were also included in the analysis.

Results: 26,159 elderly patients with major depressive disorder were included in our study. The average age was 72 years and female predominance was found. During one year follow up, only 1.6% elderly MDD patients met the criteria of treatment-resistant depression, but 22.1% failed to respond to the first antidepressant treatment, classified as treatment-resistance tendency. Several psychiatric comorbidities and physical comorbidities showed significantly impacts on the risk of treatment-resistant depression based on the logistical regression analysis.

Conclusion: The treatment for depression may be influenced by aforementioned psychiatric and physical comorbidities. Physicians should pay attention to other treatable factors to potentially benefit depression treatment.

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**P17: Conceptualizing depression and anxiety among Peruvian older adults: A qualitative study**

Oscar Flores-Flores, Alejandro Zevallos-Morales, Ivonne Carrión, Dalia Pauer, Lorena Rey, José F. Parodi, Suzanne Pollard, Joseph Gallo

Background: Among older populations (people 60 years or over), mental disorders such as depression and anxiety are frequent and often coexist. In urban Peruvian communities, 1 in 10 older adults experience depression. Nevertheless, depression and anxiety in late-life are often neglected, underdiagnosed and poorly treated. Diagnosis and treatment led only by a bio-medical model may overlook important social and contextual factors of mental health, which can inform management. Therefore, we sought to understand the perspective of Peruvian older adults regarding depression and anxiety and to lay groundwork for designing an intervention for this population.

Methods: This was a cross-sectional qualitative study nested in a larger community-based study, GECO [Global Excellence for COPD], conducted in Lima, Peru between October 2018 and April 2019. We purposely selected a group of older adults with higher scores (more symptoms) of depression and/or anxiety based on the Patient Health Questionnaire-9 (PHQ-9  $\geq 10$ ) and the Beck Anxiety Inventory (BAI  $\geq 16$ ), respectively. The interview guide was carefully designed and tested. All interviews were digitally recorded with consent and transcribed verbatim by an external personnel. Data collection was collected until saturation was reached.

Findings: We interviewed 39 older adults (16 males, 23 females), with ages between 60 to 88 years old. Some of them were receiving some mental health treatment. The main topics emerged where: 1) conflicting family environments (women experience considerable gender violence, both genders had to work since very young). 2) Anxiety was related to impulse to eat, commonly called "nerves" and understood as something close to depression that shared common causes. 3) About depression, people described their causes related to loneliness, other factors such as concerns regarding their finances or health or those of other relatives, and your own personal character ("personality"). 4) Support to overcome depression was referred to being found in their pair/friends, family, and from people from their Churches.

Conclusions: This study highlights that people perceived that anxiety and depression share common roots which includes loneliness and personal factors. It is therefore vital to consider these elements when designing health services for older adults.

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### **P18: Efficacy, safety, and tolerability of a single subcutaneous dose of ketamine to treatment-resistant depression in the elderly: a case report**

Leandro Costa, Vitor Cavenaghi, Debora Bassit, Jefferson Folquitto, Edson Hirata, Renerio Fraguas

**Purpose:** There is an urgent need for new treatment strategies for treatment-resistant depression (TRD). Low dose intravenous ketamine infusions proved to be effective in TRD, causing remission in up to 30% of patients with one dose. However, there is few data addressing TRD treatment in the elderly, particularly using the subcutaneous route, a less expensive and easier way of administration. Here, we report a case of a 75 year-old patient with TRD, submitted to a subcutaneous ketamine administration.

**Case:** 75-year-old male with bipolar disorder type 2, current depressive episode lasting one year with suicidal thoughts. **Clinical history:** hypertension, gout and thrombophilia.

**Current episode treated with escitalopram 30 mg/day, quetiapine 200 mg/day and aripiprazole 2.5 mg/day without response. Augmentation with bupropion 300 mg/day and methylphenidate for 2 months each failed. Strategy with venlafaxine 225 mg/day, olanzapine 5 mg/day and aripiprazole 2.5 mg/day also failed. No response to 12-session electroconvulsive therapy (ECT).**

**Method:** 0.5 mg/kg subcutaneous ketamine administered at abdominal wall, split in two bolus applications at 0 and 40 minutes. Efficacy assessed with Montgomery-Åsberg Depression Rating Scale (MADRS) at baseline and 24 hours after infusion. Safety and tolerability assessed with continuous oxygen saturation and heart rate measures, blood pressure measures every 20 minutes, Clinician-Administered Dissociative States Scale (CADSS) at 40 and 120 minutes, Young Mania Rating Scale (YMRS) Items 1 and 2 every 30 minutes, Modified Observer's Assessment of Alertness/Sedation Scale (MOAA/S) every 30 minutes.

**Results:** Patient achieved remission after 24h of the infusion (MADRS score of 20 at baseline and 2 at 24 hours), had mild dissociative symptoms (CADSS score of 23 at 40 minutes and 3 at 120 minutes), low sedation (MOAA/S score of 4 at 30 and

60 minutes), 20% variation in systolic pressure (returned to baseline levels at 80 minutes), had no hypomanic symptoms (YMRS items 1 and 2 scored zero at all points) and had no clinically significant variation in oxygen saturation and heart rate. Conclusion: low dose subcutaneous ketamine was effective, safe and well-tolerated, with no psychotomimetic symptoms and mild dissociative effects in a geriatric patient with TRD including non-response to 12 ECT sessions.

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### **P19: Gender differences in prevalence, incidence, persistence and remission of clinically significant depressive symptoms in general population aged 60 years and over: preliminary results of a prospective study in the province of Girona (Catalonia, Spain)**

Josep Garre-Olmo, Ruth Martí, Pascual Solanas, Jaume Marrugat, Rafel Ramos, Roberto Elosua, Esther Gelada-Batlle, Oriol Turró-Garriga, Joan Vilalta-Franch

Introduction: Depression is a common mental health disorder in late-life. We sought to estimate several frequency indicators of clinically significant depressive symptoms in people aged 60 years and over, and to explore differences among gender.

Methods: Cohort design nested to the Regicor project, a prospective population-based cohort study of cardiovascular risk factors in the province of Girona (Catalonia, Spain). We used a population-based sample of participants aged 60 years and older that were examined between 2007 and 2013, and reexamined between 2017 and 2018. The Patient Health Questionnaire-9 (PHQ-9) was used to assess clinically significant depressive symptoms (PHQ-9  $\geq 10$  points). Point-prevalence was estimated for each cross-sectional examination, and incidence, persistence and remission rates were estimated after 7.1 years (SD=1.8) of follow-up. Odds ratios (OR) and incidence rate ratios (IRR) were calculated to quantify the association of gender at baseline and at follow-up.

Results: At baseline 1,521 subjects were 60 years and older (40.3%) and 1,243 completed the PHQ-9 (81.7%). The mean age was 67.6 years (SD=6.1; range=60-91) and 54.4% were female. Point-prevalence at baseline was 6.1% (95% CI=4.7-7.4), 9.8% for women (95% CI=7.6-12.3), and 1.8% (95% CI=0.8-3.2) for men (OR=6.0; 95% CI=3.1-11.8). At follow-up 1,208 participants completed the PHQ-9 (mean age=74.3 years; SD=6.1; range=64-97), and point-prevalence was 4.5% (95% CI=3.4-5.6), 7.1% for women (95% CI=5.0-9.1), and 1.6% (95% CI=0.5-2.7) for men (OR=4.6; 95% CI=2.2-9.6). Incidence rate was 3.5 per 1,000 person-years (p-y) (95% CI=3.8-7.2), 8.1 per 1,000 p-y (95% CI=) for women, and 2.2 per 1,000 p-y (95% CI=) for men (IRR=3.7; 95% CI=1.6-9.3). Persistence rate was 31.4 per 1,000 p-y (95% CI= 17.6-51.8), 33.8 per 1,000 p-y for female (95% CI=18.5-56.7), and 15.6 per 1,000 p-y (95% CI=0.4-87.1) for male (IRR=2.1; 95% CI=0.3-91.2). Remission rate was 117.2 per 1,000 p-y (95% CI=88.5-152.1), 113.5 per 1,000 p-y for female (95% CI=83.4-151.0), and 114.6 per 1,000 p-y (95% CI=64.3-267.0) for male (IRR=0.80; 95% CI=0.39-1.64).

Conclusion: Point-prevalence of clinically significant depressive symptoms slightly declined between the two periods. Women presented higher prevalence and incidence rates than men. Persistence and remission rates were similar for men and women aged 60 years and over.

### **P20: Primary hiperparathyroidism and refractory depression - A case report**

Camila Truzzi Penteadó, Débora Pastore Bassit, Jefferson Cunha Folquitto, Jorge Augusto Alves Silveira, Rafael Richard C. Sá

Last century the diagnosis of primary hyperparathyroidism (PHPT) started to admit other findings, in addition to the already known bone and renal disease. It was observed that a great part of the patients also evolved with a myriad of neuropsychiatric symptoms and cognitive alterations, among them treatment-refractory depressive episodes. This finding motivated a series of studies evaluating the cognitive and mood response of individuals with PHPT undergoing parathyroidectomy. In this sense, we present the case report of a patient from our psychogeriatric ward:

R.M., 68 years old, Brazilian, widowed, without children, 4 years of schooling, ex-housewife, retired, entered our ward in February in a severe refractory depressive episode with psychotic symptoms. She presented a mild depressive illness 18 years ago completely responding to SSRI, this being her 3rd depressive episode of life. During the hospitalization, medical management had been performed, in addition to being sent to ECT (16 sessions), with a modest response. At the same time, in the investigation of organic causes, she presented hypercalcemia (total Calcium 11.3mg / dL - VR: 8.5 - 10.2 mg / dL, ionic Calcium 6, 03 mg / dL - VR: 4.0-5.0 mg / dL), PTH increase (123 pg / mL-VR: 10-65 pg / mL) and changes suggestive of



central hypothyroidism. After exclusion of multiple endocrine neoplasia, scintigraphy suggestive of parathyroid adenoma and bilateral nephrolithiasis confirmed by ultrasonography, a diagnosis of PHPT was made and the patient was referred to the surgery team to perform a parathyroidectomy even during hospitalization. She presented, before the surgical approach, GDS: 14/15 and HADS: 33/42. To date, the patient is undergoing pre-surgical evaluation.

The above report will help compose the cohort of patients diagnosed with PHPT who underwent surgery. Through this, we could perceive that nuances in the presentation of previous psychiatric settings (egg, non-refractoriness vs. refractoriness) should lead the psychiatrist to develop clinical reasoning in order to investigate organic-metabolic changes and to optimize treatment and provide quality of life for patients. Also, the importance of multidisciplinary and interdisciplinary work free from a stigmatized view of mental illness is emphasized to guarantee the best care to the individual.

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### **P21: Prospective association between metabolic syndrome and depressive symptoms in young and middle age adults**

Seunghui Chae, Young-Chul Shin, Kang-Seob Oh, Dong-Won Shin, Sang-Won Jeon, Seong-Jin Cho

**Object:** Recent studies on the prospective association between the metabolic syndrome (MetS) and depression have reported conflicting findings. We examined the prospective association between MetS and incident depressive symptoms.

**Methods:** We conducted a prospective cohort study in 138,522 middle age adults without depression who underwent at least 2 comprehensive health exams between January 1, 2012 and December 31, 2015. Metabolic syndrome was assessed according to the National Cholesterol Education Program Adult Treatment Panel III (NCEP ATP-III). The study endpoint was new onset of depressive symptom defined as a CES-D score  $\geq 16$ . We used flexible parametric proportional hazard models to account for interval censored events.

**Results:** During a median follow-up of 2.2 years, incident depressive symptoms occurred in 6,833 participants. The multivariable-adjusted HR for incident depressive symptoms comparing absence to presence of MetS was 1.00 (95% CI, 0.92–1.09). When the participants with zero MetS component was set as a reference, HR for incident depressive symptoms formed U-shaped relationship with number of MetS components: 1 component (1.07 [CI, 1.01–1.14]); 4 components (1.15 [CI, 1.04–1.51]); 5 components (1.21 [CI, 1.10–1.88]). Of the five MetS components, only waist circumference was significantly related to new-onset depression (HR, 1.76 [CI, 1.68–1.85]), and it had a greater impact when combined with lipid profile abnormality.

**Conclusion:** Because of this U-shaped association between number of MetS component and depressive symptoms, it was confirmed that presence of MetS was not statistically significant with incidence of depressive symptoms.

### **P22: Self-stigma formation process among younger and older Israeli Arabs diagnosed with depression.**

Fareeda Abo-Rass, Shiri Shinan-Altman, Perla Werner

**Background:** Self-stigma is increasingly recognized as associated with serious harmful consequences among younger and older adults diagnosed with depression. However, studies that examined the process of self-stigmatization have concentrated only on younger adults (ages 18-65) with mental illness.

**Aim:** To examine and compare the self-stigma process formation and its relation to self-esteem among younger (ages 18-64) and older adults (age 65+) diagnosed with depression.

**Method:** A total of 160 Israeli Arabs - 85 younger adults (aged 18-64), and 75 older adults (aged 65+) - diagnosed with depression participated in the study. The majority of the participants in both groups were female and married. Their mean age was 37 among the younger group, and 75 among the older group.

Self-stigma was assessed using the Self-Stigma of Mental Health Scale (Corrigan et al., 2006), which include the stages of the self-stigma formation model (stereotype awareness, stereotype agreement and self-concurrence). Self-esteem was assessed using Rosenberg's Self-Esteem Scale (Rosenberg, 1965). All data were coded and analyzed using SPSS-25.

**Result:** Compared to younger adults, older adults reported significantly higher scores in all the stages of the self-stigma model. In both age groups we found that awareness of stereotypes was significantly higher than agreement with stereotypes which in turn was higher than self-concurrence. Additionally, the relationship between proximate stages was stronger than the relationship between distant stages. Stereotype agreement was found to be a strong mediator between stereotype awareness and self-concurrence for both younger and older adults.

Moreover, no statistically significant correlations were found between awareness and self-esteem in both age groups, while significant correlations were found between agreement and self-concurrence and self-esteem. Self-concurrence had a higher and stronger correlation with low self-esteem in both age groups.



Conclusions: Our findings indicate that self-stigma is a multilevel and progressive process among both younger and older adults diagnosed with depression. Thus, the model as suggested by Corrigan and colleagues (2006) is relevant among both age groups.

Moreover, older adults with depression appear to be a more vulnerable group since they reported higher self-stigma. This might be the result of the 'double stigma' experienced by older persons with mental illnesses.

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### **P23: Suicide Risks are Associated with Childhood Trauma in Late Life Depression**

Shwu-Hua Lee, Chemin Lin

Background: The population of the elder adult is rapidly increasing globally. Late life depression is highly prevalent and associated with committing suicide which has been a serious public health issue. We aimed to assess the cognitive function and test the relative involvement of childhood trauma in late life depression.

Methods: We evaluated 56 consecutive outpatients who had been diagnosed with DSM-5 major depressive disorder, including 15 late life depression with suicide attempt, 18 late life depression with suicidal plans and 23 late life depression without suicidality. We enrolled 14 mentally healthy elders from the community. Analysis of variance (ANOVA) was used to compare neuropsychological function and childhood trauma among the four groups.

Results The score of Childhood traumatic questionnaire of emotional and physical neglect of the attempt are significantly higher than the control group. There are no significant differences in the cognitive function among these four groups.

Conclusions: Our preliminary data reveal that late life depressive patients with suicide attempts have experienced more childhood traumatic events, involving emotional and physical neglect. We demonstrate suicide attempts are associated with childhood Trauma in late life depression.

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### **P24: The Impact of Chronic Disease and Negative Life Events on Depressive and Anxious Symptoms in Late Life: Does the Tendency to Worry Play a Part?**

Tjeerd Idger de Zeeuw, Roeslan Leontjevas, Lilian Lechner, Aartjan T.F. Beekman

The current study explored whether, in Dutch community-dwelling adults aged 65 years and older (N = 1093), the number of chronic diseases and/or the occurrence of a negative life event, were cross-sectionally linked with anxious and/or depressive symptomatology, and whether these relationships were moderated by the tendency to worry. Participants belonged to a cohort created based on a random selection from the population registers of 11 municipalities, located in three areas of the Netherlands. Data for the present study was collected in 2001 – 2002, and assessments consisted of a standardized face-to-face interview performed by trained interviewers with an additional self-report questionnaire. Hierarchical linear regression models were built to explore the associations, while controlling for potential covariates. Results showed a positive relationship between the number of chronic diseases and the severity of depressive and anxious symptoms. Also, the tendency to worry was positively associated with affective symptomatology. Older adults that had experienced a negative event, reported more severe depressive symptoms, but not more anxiety, than those that had not experienced a negative event. However, the variance in depressive symptoms explained by a negative event was limited. A vulnerability-stress model, with the tendency to worry as the vulnerability, and chronic illness and negative events as the stressors, got limited support; the variance in affective symptoms was, in the current study, mainly explained by adding up the depressogenic and anxiogenic effects of the tendency to worry and the number of chronic diseases. When older adults with varying numbers of chronic diseases and tendencies to worry were compared, in multimorbid older adults with a high tendency to worry, the most serious symptoms of depression and anxiety could be observed. Screening for the tendency to worry, therefore, can help identify chronically ill older adults with an elevated risk of severe symptoms of anxiety and depression.

### **P25: White matter integrity and depressive symptoms in general population aged 50 and over: preliminary results from the Imagenomics of Ageing Study**

Josep Garre-Olmo, Carles Biarnés, Domènec Serrano, Esther Gelada-Battle, Oriol Turró-Garriga, Josep Puig, Joan Vilalta-Franch

**Introduction:** Depressive disorders are believed to be originated due to a susceptible genotype, chronic stress and adverse developmental environmental that leads to changes in the biochemistry and brain structure. Magnetic resonance (MR) diffusion tensor imaging (DTI) can assess the integrity brain white matter (WM) tracts. We aimed to explore the association between WM integrity and depressive symptoms in general late-life general population.

**Methods:** We used data from 838 participants aged 50 years and over from the Imagenomics of Ageing, a population-based study in the province of Girona (Catalonia, Spain) that underwent into a comprehensive clinical examination including a 1.5 tesla whole-body MR imaging. We extracted quantitative tract-specific measures based on DTI to examine their microstructural integrity according to fractional anisotropy (FA) values. The Patient Health Questionnaire-9 (PHQ-9) was used to assess depressive symptoms. PHQ-9 score was regressed on specific-tract FA values adjusted for age, gender, depression history, educational level and total cortical WM volume.

**Results:** The mean age was 67.1 years (SD=7.3), 47.6% were women, and depression history was more frequent in women (42.9% vs. 17.1%). PHQ-9 score mean was 4.1 points (SD=4.0; range=0-24), and 10.7% scored 10 or more points. 21.0% of the PHQ-9 score variability was explained by the adjusted multivariate regression analysis. In addition to covariates, cerebral peduncle left, superior corona radiata right, posterior corona radiata left, external capsule right, superior longitudinal fasciculus left, and uncinate fasciculus right were significantly related to the PHQ-9 score.

**Conclusion:** Our results suggest that depressive symptoms in late-life are related with reduced WM integrity in some brain regions. Further research is needed to fully characterize these imaging markers and to understand how structural damage explains the various clinical manifestations of depressive symptoms in late life.

### **P26: Development of a new cognitive screening test for primary care: a preliminary report**

Shih-Cheng Chang, Tzu-Ying Lee, Pei-Ning Wang, Cheng-Sheng Chen, Hung-Yu Chan, Jiahn-Jyh Chen, Chih-Cheng Hsu, Tzung-Jeng Hwang

**Background:** The Brain Health Test (BHT) was developed by the Taiwan Dementia Society in 2015. It showed good sensitivity and specificity to differentiate dementia subjects from normal. Based on BHT, we aimed to develop a new test, which consisted of seven items with total scores of 23 to investigate its potential to differentiate subjects with mild cognitive impairment (MCI) from normal controls.

**Methods:** Subjects were recruited from psychiatry/neurology outpatient clinics of different hospitals and community. They were classified into normal controls, MCI group, and dementia group based on Mini-Mental Status Examination (MMSE) and Clinical Dementia Rating (CDR). The scores of this new exam, including scores of individual items and total scores, among the three groups were compared by analysis of variance (ANOVA). Diagnostic values of the new test were analyzed, using receiver operating characteristic (ROC) curves analysis. Sensitivity, specificity, positive and negative predictive values, and areas under ROC (AUC) were also calculated to determine the optimal cutoff scores for the new test in differentiation between normal controls and MCI group and between dementia and MCI group.

**Results:** This is a preliminary analysis with a total of 202 subjects, including 83 normal controls, 69 subjects with MCI, and 50 subjects with dementia. The total scores of this new test were significantly different among these three groups. When the cutoff score was set to 17.5 in differentiation between MCI and normal controls, the AUC was 0.80, with sensitivity of 76%, specificity of 76%, positive predictive value of 79%, and negative predictive value of 72%. To differentiate dementia from MCI, the AUC was 0.90, sensitivity 82%, specificity 90%, with an optimal cutoff score of 12.5. The differentiation between normal and dementia group was very good (sensitivity 99%, specificity 90%, AUC 0.98, cutoff score 12.5).

**Conclusions:** The preliminary analysis showed the new test had high sensitivity and specificity in differentiation among dementia, MCI and normal controls. It may serve as a potential tool for primary care staffs to screen and detect MCI and early dementia.

### **P27: REAGERA-S: Validation of a new self-administrated brief instrument to identify experiences of abuse among older adults**

Mikael Ludvigsson, Johanna Simmons, Nicolina Wiklund, Katarina Swahnberg

**Background:** Older adults are subjected to different forms of abuse both by professionals, partners and other family members (Dong, 2015). Abuse is associated with ill-health and increased health care utilization (Schofield et al., 2013). Health care providers are often unaware of their patients' victimization. This study was a part of the larger project "REAGERA-Responding to elder abuse in geriatric care", aiming at improving health care response to victimized older adults.

**Objective:** To validate REAGERA-S, a new brief self-administrated instrument to identify abusive experiences among older adults.

**Method:** REAGERA-S includes nine questions concerning physical, psychological, sexual, financial abuse and neglect. It was audited by experts in the field and face validity was tested using cognitive interviews. Blinded interviews were used as gold standard for patients who had answered the REAGERA-S. Respondents (n=179, response rate 58%) were consecutively recruited during 2018 at two acute internal medicine and geriatric wards. Inclusion criteria was age  $\geq$  65 years. Exclusion criteria was insufficient somatic, cognitive or language capacity to answer the instrument.

Results: Properties of the instrument was monitored during data collection and after including 84 patients (63 of whom had agreed to be interviewed), we decided that the first version of the instrument did not perform satisfactorily. Adjustments in wordings were therefore made before continued testing. The final version of the instrument was answered by 95 patients. Among them 71 (75%) agreed to be interviewed and could be included in the validation. Sensitivity for elder abuse was 0.88, specificity 0.92 and likelihood ratio 11.4. For life-time experiences of abuse sensitivity was 0.72, specificity 0.92 and likelihood ratio 9.3.

Conclusion: REAGERA-S is a new brief self-administered instrument with good properties for in-hospital screening for elder abuse. The instrument is more comprehensive, and showed a better sensitivity than previous alternative instruments. When abusive experiences are revealed it should be followed by a thorough assessment of patients' experiences and needs.

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## **P28: Depressive symptomatology in elderly patients diagnosed of schizophrenia**

María del Carmen García Mahía, Francisco Javier Vicente Alba, María Vidal Millares

Introduction: Previous studies indicate the difficulty of correctly diagnosing depressive symptomatology in the schizophrenic patient, and its influence on the evolution of patients presenting both syndromes, hindering therapeutic adherence and worsening the prognosis of those who suffer from it.

Aims:

1. To determine the prevalence of depressive symptoms in patients older than 65 years, diagnosed with Schizophrenia
2. To analyze the relationship of depressive symptomatology with other sociodemographic and clinical variables.

Material and methods:

The sample is constituted by 36 institutionalized patients aged 65 or over, diagnosed of Schizophrenia, according to ICD-10 criteria.

As an instrument, the Scale for Positive and Negative Syndrome (PANSS, Kay et al, 1987) was used, classifying patients in a positive, negative or mixed subtype. Data on clinical and sociodemographic variables were obtained from the clinical records of the centers.

Results:

The average age of the patients is 69.2 years (SD: 7.2).

Objective depression was detected in 30.3% of the sample and subjective depression in 59.5%.

The prevalence of depressive symptoms is higher in women, in unmarried patients and in the most disadvantaged social classes. When analyzing the characteristics of the disease, more depressive symptoms are detected in patients with a positive subtype of schizophrenia. With respect to the years of evolution of schizophrenia, a greater prevalence of depressive symptoms is detected in patients with fewer years of disease evolution.

The presence of comorbid somatic diseases increases the prevalence of depressive symptoms.

Conclusions: Depressive symptomatology presents high prevalence in patients diagnosed with schizophrenia, especially in the first years of the disease. Its influence on the evolution and prognosis of patients with severe mental disorder, requires its detection and early treatment in this type of population.

## **P29: Electroconvulsive therapy in a patient with very late-onset schizophrenia-like psychosis**

Yuto Satake, Kenji Yoshiyama, Shunsuke Sato, Syoko Sasaki, Masao Iwase, Manabu Ikeda

We report a 74 year-old female patient with very late-onset schizophrenia-like psychosis (VLOSLP) who achieved remission by electroconvulsive therapy (ECT). She was admitted to our hospital for auditory hallucinations. It was accusatory, abusive and third-person running commentary. It was her first psychotic episode and her formal thought was almost intact. We excluded organic diseases such as DLB, and diagnosed her as VLOSLP. We tried several antipsychotics, which did not have any sufficient response or tolerability. Her symptoms gradually aggravated through the course and she finally couldn't eat and drink enough because of command hallucinations. Because of urgency, we introduced ECT and it was so dramatically effective that her psychosis totally disappeared after a series (10 treatments). Since her discharge, she had lived by herself without any apparent psychosis over a year with only 1mg of risperidone. It is known that antipsychotics are effective to VLOSLP, but elderly persons are tend to be vulnerable to them. ECT is thought as a very useful treatment option for elderlies because of its fewer side effects and better effectiveness to affective disorders. On the other hand, there are no reports suggesting the efficacy of ECT in patients with VLOSLP. It is often difficult for patients with VLOSLP to accept prescription because of their relatively preserved formal thought and lack of insight into their symptoms. However, we could introduce subsequent maintenance drug therapy because of achievement of remission by ECT contributed to obtaining an insight. Therefore, ECT may be one of most reasonable treatment options for VLOSLP. We will try to review previous reports regarding ECT on elderly psychotic patients and discuss the possibility of ECT in patients with VLOSLP.

**P30: Psychotic symptoms in the elderly: A narrative review of the literature**

Luis Moncayo-Samperio, Ismael Aguilar-Salas, Oscar Ugalde-Hernández, Raúl Escamilla-Orozco, Guillermo Velázquez-López

**OBJECTIVE:** To conduct a narrative review of the most common psychotic symptoms in the elderly and determine their differences and particulars in order to help clinicians with the correct diagnosis for their patients.

**BACKGROUND:** Psychotic symptoms (hallucinations and delusions) are more common in the elderly compared to young adults, and it implies a more difficult approach to diagnosis because of the wide range of possible etiologies that produce them like early-onset schizophrenia, late-onset schizophrenia, delusional disorder, various dementias, various neuropsychiatric disorders, delirium, and secondary to organic causes. The prevalence of the psychotic symptoms can change depending in the environment with hospital, clinics and retirement homes having almost five times more patients with psychotic symptoms than people living at home.

**METHODS:** We used MEDLINE, PubMed, Embase, and Google Scholar database to identify relevant articles published until January 2019. The search strategy comprised an electronic search of those four bibliographic databases, supplemented by exploration of a web-based search engine and hand-searching. The keywords utilized in the search were: elderly, psychosis, older, delusions, hallucinations and psychotic. Only articles in English and Spanish were included.

**RESULTS:** The search yielded 54 articles from which we provide a narrative synthesis. Research primarily originated from Europe and the United States, with a recent spike in publications from Asia. There was a great variability of participants in the included studies, with only a few of them having an important sample size. There was a homogeneity regarding the studied symptoms but important variations in the prevalence depending on the country of origin. Some articles compared the sensitivity of these particular symptoms in order to come to a diagnosis.

**CONCLUSIONS:** In a world of new technological advances, performing a complete and proper psychiatric interview with detailed semiology can help today's clinicians come to a diagnosis in a challenging age group to study.

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Iglewicz, A., Meeks, T.W. and Jeste, D.V., 2011. New wine in old bottle: late-life psychosis. *The Psychiatric Clinics of North America*, 34(2), p.295.

Widakowich, C., 2014. Parafrenias: nosografía y presentación clínica. *Revista de la Asociación Española de Neuropsiquiatría*, 34(124), pp.683-694.

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**P31: Psychopathological dimensions in catatonic elderly people**

Jorge Cuevas-Esteban, Maria Iglesias-Gonzalez, Antoni Serrano-Blanco, Maria Rubio-Valera, Anna Butjosa, Luisa Baladon

**BACKGROUND:** Whether the presentation of catatonia differs among those with schizophrenia or mood disorders is an unresolved issue. We aim to study the factorial structure of catatonia to describe different dimensions and to distinguish presentations in schizophrenia and mood disorders.

**METHODS:** The present study was conducted at the acute psychiatric unit of Parc Sanitari Sant Joan de Déu (Sant Boi de Llobregat, Barcelona, Spain). A total of 106 patients were included. Admissions aged over 64 years during a year were selected. The assessment of catatonia was conducted on the first 24 h of admission. Assessment of catatonia:

The BFCRS is one of the most used rating scales in routine clinical practice, because of its reliability, validity, and ease of administration. It comprises 23 items. The first 14 items are used as a screening tool, constituting the Bush Francis Catatonia Screening Instrument (BFCSI).

**Statistical Analysis:** A principal component analysis was carried out, followed by a varimax rotation. Factors with eigen-value >1 were included. Any item loading more than 0.40 was considered significant. An analysis of variance (one way-ANOVA) with Bonferroni post-hoc correction was performed to assess for overall differences in the diagnostic groups.

**RESULTS:** The Kaiser Meyer Olkin measure of sampling adequacy was 0.856 and the Bartlett's test of sphericity was 819.06 (DF=78;  $p < 0.001$ ), indicating that data was adequate to run a factor analysis. Factor solution (Eigenvalue greater than 1.0) gave a three-factor solution accounting for 68.5% of the variance. In a second step, the factor analysis was extended to include all 23 items of the BFCRS (catatonic sample). The initial factor solution (Eigenvalue greater than 1.0) gave seven-factor solution accounting for 76.72% of the variance. Nevertheless, some items loaded in two or more factors, and one factor had only one item. The three factor-model accounted for 52.23% of the variance and provided a better fit for the data. Factor 1 loaded on the items concerned with "excitement" (Excitement, grimacing, echopraxia, stereotypy, mannerisms, verbigeration, grasp reflex, and combativeness), factor 2 on the "inhibition" items (immobility, mutism, staring,



posturing, rigidity, withdrawal and perseveration) and factor 3 on “volition” items (Automatic obedience, Mmitgehen, ambitendency)

Sienaert, P., Rooseleer, J., De Fruyt, J., 2011. Measuring catatonia: a systematic review of rating scales. *J. Affect. Disord.* 135, 1–9.

Peralta, V., Cuesta, M.J., 2001a. Motor features in psychotic disorders. I. Factor structure and clinical correlates. *Schizophr. Res.* 47, 107–116

### **P32: Validity and Reliability of the 36-item Satisfaction and Well-being of the Elderly Scale (SWE-36)**

Chumphot Phromsida, Nahathai Wongpakaran, Tuntima Doungyota, Sam-ang Phanprathum

Introduction: The Satisfaction and Well-being of the Elderly Scale (SWE) was initially developed to have 55 items demonstrating 9 factors. The 36-item version was then developed and showed good construct validity using exploratory factor analysis.

Objective: This study aimed at examining the validity and reliability of the SWE-36 among community-dwelling older people in Thailand.

Methods: Six-hundred elderly Thais, (aged 60 years and older) who were neither depressed nor cognitively impaired, completed the SWE, a self-report inventory, using a 5- response Likert scale, addressing 9 domains of satisfaction and well-being, i.e., enjoyment, resolution, fortitude, congruence, positive self- concept, giving up authority, mood tone, reconciliation with others and self-sufficiency. Participants also completed the Rosenberg Self-esteem Scale (RSES), Gratitude Scale, and EQ5D. Factor analyses were performed to determine which model best fit the data. A 4-week interval retest was also conducted.

Results: Mean age was 69.4 years, comprising 74.7% females of whom 57.3% had obtained an elementary level of education. Cronbach’s alpha was 0.96 for the entire scale ranging 0.72-0.86 for each factor. The bifactor model best fitted the data. All fit indices exceed the cut-off value, except for that of the chi-square, i.e., the comparative fit index (0.971) and Tucker-Lewis Index (0.967). The Root Mean Square Error of Approximation was 0.060 (90%CI, 0.053-0.063), and Standardized Root Mean Square Residual was 0.052. The intraclass correlation coefficients for test-retest was 0.74. Regarding the criterion validity, SWE-36 was positively correlated with the RSES, Gratitude Scale and EQ5D, i.e., 0.367 ( $p<.0001$ ), 0.163 ( $p<.05$ ), and 0.105( $p<.05$ ), respectively.

Conclusion: The SWE-36 was proved valid, and demonstrated good internal consistency and acceptable temporal reliability. The bifactor model of SWE-36 indicated that it had sufficiently unidimensionality, which ensured that the single construct of Satisfaction and Well-being could be measured, and the sum score of SWE could be legitimately used in clinical practice.

*Phromsida, C. et al. (2019). Satisfaction and well-being of the elderly: a new tool for measuring life satisfaction among the aged.*

*European Psychiatry, 565, 210.*

*Phromsida, C. et al. (2019). Factor structure of a 36-item satisfaction and well-being of the elderly scale (SWE-36). European Psychiatry, 565, 223.*

### **P33: Sleep Disturbances in Nursing Home Residents in Spain: Links to Quality of Life and Daily Functioning**

Patricia Concheiro-Moscoso, Betania Groba, Javier Pereira, María del Carmen Miranda-Duro, Laura Nieto-Riveiro, Thais Pousada

Introduction: Sleep disturbances, including insomnia and sleep-disordered breathing, are common among older adults. Major financial resources are being allocated to accommodate Spain’s rapidly growing older population, yet sleep’s role in promoting health-related quality of life (HRQOL) and physical function have not been thoroughly evaluated in this population. The current study sought to determine the association of sleep with HRQOL and physical function among older nursing home residents.

Methodology: Participants were 37 older adults attending or residing in a semi-urban nursing-home facility in Galicia, Spain (70.3% cognitively normal, 29.7% cognitively impaired, aged  $84.1\pm 8.0$ , 81.1% women) who completed the Pittsburgh Sleep Quality Index (PSQI), the 5-level EuroQol-5D, a measure of HRQOL, and the International Classification of Functioning, Disability and Health (ICF) Core Sets for Sleep, a measure of physical functional.

Results: After adjustment for age, poor (PSQI score  $\leq 14$ ) and/or worse sleep quality (continuous PSQI score) was associated with several indices of lower HRQOL, including greater immobility ( $b=0.19$ ,  $p=0.012$ ) difficulty completing self-care ( $b=0.23$ ,  $p<0.001$ ) and daily activities ( $b=0.18$ ,  $p=0.004$ ), more severe anxiety/depression ( $b=0.10$ ,  $p=0.042$ ), and a lower overall health index ( $b=0.06$ ,  $p=0.001$ ). Further, poor/worse sleep quality was associated with several indices of functional impairment, including greater difficulty maintaining body position ( $b=0.32$ ,  $p=0.004$ ), walking ( $b=0.17$ ,  $p=0.001$ ), and moving around ( $b=0.45$ ,  $p=0.009$ ).

Conclusions: Among older nursing home residents/patrons in Spain, poor/worse sleep quality is associated with lower indices of HRQOL and physical function. Moreover, several aspects of the physical environment were associated with sleep.

Longitudinal studies and sleep interventions are necessary to improve health and physical function in this population. To better understand these relationships and improve resource allocation for elderly people in Spain, future studies should utilize different devices to objectively measure sleep in this population.



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### **P34: Study of sleep disturbances in patients older than 65 years**

María del Carmen García Mahía, María Vidal Millares

Introduction:

Sleep disturbances are frequent in elderly people, significantly influencing the quality of life, and the risk of institutionalization.

Objectives:

- To know the prevalence of sleep disturbances in patients older than 65 years, with anxious or depressive symptoms.
- Analyze the relationship of sleep disorders with other clinical or sociodemographic variables.

Sample:

85 outpatients, aged 65 years or older, treated in a Mental Health Unit, and diagnosed with some type of anxiety or depression disorder.

Methods:

Instruments:

- Beck Depression Scale (cut-off point 13-14).
- Hamilton Anxiety and Depression Scale (cut-off point 10-11)
- Pittsburgh Sleep Quality Scale.

Results:

63% of the sample were diagnosed with depressive disorder and 37% with anxiety disorder.

The subjective quality of sleep is more altered in women.

Women also presented, with respect to men, greater sleep disturbances  $p < 0.05$ .

Patients with depressive disorders have a worse subjective quality of sleep, use more medication to sleep and have a higher overall score.

Conclusions:

1. Sleep disturbances have a high prevalence among elderly patients with anxious and depressive disorders
2. The greater the severity of the anxiety or depressive disorder, the greater the alteration in the subscales that measure sleep disorders.
3. Given the influence on the quality of life of sleep disturbances, it is necessary to pay attention to the etiology of insomnia and to carry out an adequate treatment.

### **P35: Diabetes mellitus as a severe mental disorder risk factor in old age people included in an ECT program**

María Vidal-Millares, Javier Vicente-Alba, Carmen García-Mahía, Ana Gago-Ageitos, María José Durán-Maseda, Jose Berdullas-Barreiro

BACKGROUND: Comorbidities with different pathologies are frequent. The most frequent comorbidities in the elderly are chronic pain, diabetes, cataracts and cardiovascular disease (Patten, Lavorato et al., 2018).

It is known that there is an interrelation between psychiatric and somatic pathologies. It is known that Depression and Diabetes mellitus share etiological factors, such as the decrease in BDNF or the increase in inflammatory cytokines, which produce a decrease in cortisol levels (Alagikrishnan, Sclater 2012).

This means that people with a major depressive disorder and diabetes will have a worse prognosis, with higher relapse rates, a higher frequency of hospitalizations, higher suicide risk and a poorer response to antidepressants (Kim, Woo et al. 2015).  
AIMS: To study Diabetes Mellitus as a risk factor or poor prognosis for the development of a psychiatric disorder.

METHODS: A prospective study was conducted on a sample of 27 patients who received ECT during one year (2012) in Santiago de Compostela.

The sample has been divided into patients older / under 65 years of age. To look for significant differences the statistical package SPSS 16 for Mackintosh has been used.

RESULTS: No differences were observed regarding the age group or the sex variable, nor for the reason for referral to ECT according to criteria of the APA (1990) or regarding the referral to maintenance programs.

No statistically significant differences were observed regarding the number of comorbid pathologies suffered by patients referred to this therapy (ANOVA 3.14 vs 2.38) although it is somewhat higher in the younger age group. On the other hand, there are statistically significant differences regarding the fact of suffering diabetes mellitus being significantly higher in the group of people over 65 years (Chi-square  $p = 0.016$ )

CONCLUSION: Although medical comorbidity is frequent in these patients, diabetes were the most frequent disease.

Diabetes seems to be related to a greater severity of psychiatric illness in these elderly patients.

It would be necessary to expand the sample and carry out more studies in this line to verify this relationship.

ALAGIAKRISHNAN, K. and SCLATER, A., 2012. Psychiatric disorders presenting in the elderly with type 2 diabetes mellitus. *The American Journal of Geriatric Psychiatry*, 20(8), pp. 645-652.

KIM, G., WOO, J., JUNG, S., SHIN, S., SONG, H., PARK, J. and AHN, J., 2015. Positive association between serious psychiatric outcomes and complications of diabetes mellitus in patients with depressive disorders. *The International Journal of Psychiatry in Medicine*, 50(2), pp. 131-146.

PATTEN, S.B., LAVORATO, D.H., WANG, J.L., JETTÉ, N., SAJOBI, T.T., FIEST, K.M., WILLIAMS, J.V.A., BULLOCH, A.G.M. and JETTE, N., 2018. Patterns of association of chronic medical conditions and major depression. *Epidemiology and psychiatric sciences*, 27(01), pp. 42-50.

### **P36: Geriatric Bipolar Disorder: a review**

Alfonso Núñez Boquete, Sonia Gómez Pardiñas, Vanesa Aller Labandeira, Beatriz Banga González, Luís Miguel Martínez Agulleiro, Yolanda Prieto Paredes

According to forecasts, the population over 60 years old will grow three times faster than the general population. This growth means that we cannot categorize geriatric bipolar disorder as a special subgroup whose management is extrapolated from the experience acquired in mixed age groups. A literature review on Bipolar Disorder in the elderly is carried out and a clinical case is presented about the manic-like manifestations in the elderly patient.

The patient is a 79-year-old man with no known drug allergies. Smoker of 10 cigarettes a day and chronic alcohol consumption. He presents two admissions in psychiatry. The first was due to alterations in behavior and manic-like symptoms while he was admitted to the Digestive Department after a high digestive hemorrhage secondary to peptic duodenitis. After discarding organic pathology, Bipolar Disorder type I was diagnosed and treatment at discharge included Risperidone, Levomepromazine and Lorazepam, achieving remission from the clinic and being referred to Psychogeriatric consultations. It leaves the follow-up and reappears a year later again due to behavioral alterations and heteroaggressive episode at home, being necessary the involuntary admission in Psychiatry for manic episode. According to family reports, the patient had suffered two previous episodes of depression from 55 years of age. The treatment at discharge is valproic acid, risperidone and lorazepam. It is derived again for follow-up in Psychogeriatric consultations, where he regularly goes accompanied by his son and a favorable evolution is confirmed, persisting euthymia and an adequate behavior.

In conclusion, it is necessary to emphasize the increasing quantitative importance of the third age, being necessary more studies that allow us a specific approach and management without the need to extrapolate the results of studies done in mixed age groups. The need for a comprehensive differential diagnosis that allows us to reduce the rates of delay in diagnosis (between 40-70%) and thus achieve a greater functional recovery of the patient. Finally, the information that the family can provide us with is essential in order to elaborate a pathobiography as rich as possible that allows an early and accurate diagnosis.

Sajatovic, M., Chen, P., (2011), "Geriatric bipolar disorder" in *Psychiatr Clin North Am.* 34:319.

Sajatovic, M., Strejilevich, SA., Gildengers AG., (2015), "A report on older-age bipolar disorder from the International Society for Bipolar Disorders" in *Bipolar Disord.* 17:689.

Sajatovic, M., Kessing LV., (2010), "Bipolar disorder in the elderly" in *Bipolar Disorder: Clinical and Neurobiological Foundations.* 488.

Depp, CA, Jeste DV., (2004), "Bipolar disorder in older adults: a critical review" in *Bipolar Disord.* 6:343.

**P37: Is catatonia the ultimate response to fear in elderly people?**

Jorge Cuevas-Esteban, Maria Iglesias-Gonzalez, Antoni Serrano-Blanco, Maria Rubio-Valera, Anna Butjosa, Luisa Baladon

**BACKGROUND:** Fear emerges as central in catatonia. Does this give us new insight into the physiological and psychiatric sequelae of trauma, stress, and sexual violence?

We aimed to assess if anxiety is related to catatonia in a sample of elderly people.

**METHODS:** The present study was conducted at the acute psychiatric unit of Parc Sanitari Sant Joan de Déu (Sant Boi de Llobregat, Barcelona, Spain). A total of 106 patients were included. Admissions aged over 64 years during a year were selected. The assessment of catatonia was conducted on the first 24 h of admission.

**Assessment of catatonia:**

The BFCRS comprises 23 items. The first 14 items are used as a screening tool, constituting the Bush Francis Catatonia Screening Instrument (BFCSI).

**Assessment of psychopathology**

The Spanish version of Hamilton Anxiety Rating Scale (HARS) (Lobo) was used for evaluating the severity of anxiety symptoms

Depression was examined using the Yesavage Geriatric Depression Scale (GDS) validated for the Spanish language

**Statistical Analysis:** Data was analysed using the Statistical Package for Social Sciences version 20 (Version 20.0; IBM, Armonk, New York). Two-sample t-test and chi-square tests ( $\chi^2$ ) were used to test for group differences (catatonic and non-catatonic patients)

**RESULTS:** We find significant statistical differences in HARS between catatonic and non-catatonic patients. We did not find significant differences in Yesavage score between catatonic and non-catatonic patients.

Our study shows that fear may be the precipitating and sustaining component of catatonia, independently of diagnosis.

Fink M, Shorter Does persisting fear sustain catatonia? *E. Acta Psychiatr Scand.* 2017 Nov; 136(5):441-444

**P38: Longitudinal changes of the Paired Associates Learning test (PAL) in a sample of people with Subjective Cognitive Complaints.**

María Campos-Magdaleno, Arturo X. Pereiro, David Leiva, David Facal, Cristina Lojo-Seoane, Ana Nieto-Vieites, Onésimo Juncos-Rabadán

**Background:** The Paired Associates Learning (PAL), for assessing visual episodic memory, integrated into the Cambridge Neuropsychological Test Automated Battery (CANTAB), has proved to be useful to differentiate between Mild Cognitive Impairment (MCI) and Cognitively Unimpaired (CU) in people with subjective cognitive complaints (SCCs) (Juncos-Rabadán et al., 2014). However, studies to determine PAL profiles over time in MCI are scarce. The aim of this study is to compare the PAL performance in MCI participants who remain stable with MCI participants who worsened over time.

**Method:** Two hundred eight participants over 50 years old, referring SCCs, were assessed at baseline and twice in follow-up with an interval of 18-24 months between visits. Participants were classified at baseline as CU or MCI following NIA-AA criteria (Albert et al., 2011), and categorized at the last assessment in three groups depending on stability or worsening: CU-stable (71, 49%), MCI-stable (15, 45%), and MCI-worsened (13, 04%). Linear Mixed Models were used to test differences between groups in the three evaluation times, using the 6 shapes errors adjusted PAL measure. We included random effects for the intercept, and fixed effects for groups (with the CU as the reference group), using age as covariable.

**Results:** Descriptive values (means and standard deviations) in the last assessment suggest an increase in the 6 shapes errors adjusted for the MCI-worsened group and stability for the other two groups. The Mixed Models which included groups, time and their interactions confirmed the descriptive results. The MCI-worsened group had a high increase of errors through time in comparison with the reference group (CU-stable).

**Conclusion:** Six shapes errors adjusted PAL measure showed a sensitive evolution in visual episodic memory deterioration for MCI participants. Results indicated that MCI-worsened group had an increasing number of errors in comparison with the other groups.

**P39: Metabolic Syndrome in aged psychiatric outpatients: prevalence and associated factors**

María del Carmen García Mahía, María Vidal Millares, Francisco Javier Vicente Alba, Lucas Mera Gallardo, David Castedo Rodríguez

**Introduction:** Previous studies indicate that patients with mental illness treated with antipsychotics are a high-risk group for Metabolic Syndrome (MS) and related cardiovascular morbidity and mortality, but there are few studies analyzing older patients

**Purpose of the study**

To analyze the prevalence of MS in an outpatient sample aged 60 or over with mental disorders and study sociodemographic and clinical variables associated.

**Methods:** Retrospective descriptive study of patients receiving treatment in a Community Mental Health setting in a period of five years. (N = 96). Data were obtained from clinical records.

All patients diagnosed of any disorder on Axis I of DSM-IVTR that received continuous treatment with antipsychotics during at least 3 years prior and up to study initiation. Patients with antecedents of previous metabolic disorders were excluded. MS was diagnosed using the International Diabetes Federation Criteria.

Results: From the whole sample 64 were female and 22 male, mean age 72.2 years (SD 9.8).

Prevalence of MS was 81.25% with higher prevalence in women than in men and in the oldest patient of the sample ( $p < 0, 05$ ). Hypertension was found in 91% of the sample, raised fasting plasma glucose levels were found in 44% of patients, BMI 23 or over was found in 92 % of patients and low levels of LDL in 59. %.

MS was more prevalent in patients with psychotic disorders, followed by patients with dementia.

Prevalence of MS was higher patients treated with olanzapine and quetiapine, with lower prevalence in patients treated with aripiprazole and ziprasidone.

Higher doses of treatment were associated to higher prevalence of MS.

Conclusions: Elevated prevalence of MS are detected in psychiatric outpatients aged 60 or over receiving treatment with antipsychotics. Prevention, diagnose and treatment of MS should be part of the clinical management of these patients.

Alberti, K., Zimmet, P., Shaw, J. 2006. Metabolic syndrome—a new world-wide definition. A Consensus Statement from the International Diabetes Federation. 2006 Diabetic Medicine. Volume 23 (5), 469–480.

#### **P40: Pseudologia fantastica in Psychogeriatry: case report and review of the literature.**

Luís Miguel Martínez-Agulleiro, Vanesa Aller-Labandeira, Alfonso Núñez-Boquete, Beatriz Banga-González, Sonia María Gómez-Pardiñas

In Psychiatry we are presented sometimes with complex diagnosis which need the performing of an adequate anamnesis and heteroanamnesis for a correct filiation. That is usually the case of pseudologia fantastica.

The aim of this work is to review the literature about the diagnosis and therapeutic implications of pseudologia fantastica in relation to a case of a 74-years-old male who was brought to the emergency department after a suicide attempt by hanging, and later admitted for hospitalisation. During the interviews, the patient extensively spoke about his financial problems, noting that he should be paid a big amount of money and that he was owner of 1,000-people company. This information was confronted with his family, which confirmed the tendency of the patient to storytelling and lying.

Psychopharmacological treatment was initiated with dual antidepressants and low doses of antipsychotics. After a review of the literature, we took in consideration two different psychotherapeutic approaches: in one hand confrontation, which usually cause an increase of the patient's defences and the pseudological content; and in the other hand an "inexact interpretation", in which the content is avoided in order to know the psychopathology and be able to treat the symptoms. This last approach was employed in this case due to its closeness to the phenomenological method as a therapeutic tool, noticing an improvement in the affection.

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Thom R, Teslyar P, Friedman R. Pseudologia fantastica in the emergency department: a case report and review of the literature. Case Rep Psychiatry. 2017; 2017: 8961256.

#### **P41: Improvement in cognitive impairment: two cases with (Parkinson and CVA) and treatment in elderly day-ward**

hung pin Tan, Min-Hung Wen, bo-yen Chen, Tso-Jen Wang, Wen-Chen Ouyang, Ching-ming Cheng

There are few cases about improvement in cognition impairment in dementia combined with stroke or Parkinson diseases. Our study showed two improvement dementia patients in elderly day ward and to clarify their cognitive function, characteristics and other physical condition during admission periods.

There were two married patients A and B reported here. A graduated from occupational school major in the electronic field. B graduated from the chemistry department in a university. We used laboratory, psychological tests (CASI、MMSE、CDR...), and image data to make a definite diagnosis and follow the change of the cognitive function after 0.5 years after admission to the elderly Day ward. CDR score were both improved (1 to 0.5), and Case A (CASI : 84±92、MMSE : 24±28) and Case B (CASI: 92, MMSE: 26±28) , and they got improved in self-care and emotion expression.

These two old men got comprehensive psychiatry studies such as diagnosis, disease courses, brain damage degree and psychological differences among them. The improvement of these two patients with dementia may due to the rehabilitation of nurse, occupational therapist and psychiatrists, and some nutrition deficiency. It's necessary to study a large number of a cohort to evaluate every kind of variables to set up a local psychiatric assessment model and could be used for the useful reference of the elderly care and rehabilitation program.

Folate deficiency in dementia patients

Ozaki, Akihiko et al. Alzheimer's & Dementia: The Journal of the Alzheimer's Association, Volume 8, Issue 4, P121  
Reynolds E. H. (2002). Folic acid, ageing, depression, and dementia. BMJ (Clinical research ed.), 324(7352), 1512-5.



## **P42: Revealing blind spots of care for people with dementia recently institutionalized in long-term care: Results from a mixed method longitudinal study in Portugal**

Sonia Ferrao, Adriana Henriques

**Introduction:** The transition from home care to long-term institutional care is a significant turning point for people with dementia and their family caregivers. Healthcare providers must be aware of increased vulnerability and risk of undesirable outcomes, particularly immediately post-transition, and develop and design interventions taking into account the needs of people with dementia during this period.

**Objectives:** identify key areas of potential improvement in the quality of care for people with dementia recently admitted to long-term care facilities.

**Methods:** This study is part of a larger ongoing mixed-method longitudinal observational study that includes replication of WP3 of RightTimePlaceCare Project in Portuguese context. Participants are people with dementia with  $\geq 65$  years within one to three months after admission in long-term care. Quality of care indicators were evaluated at baseline and after three months, including psychotropic medication use (antipsychotics, anxiolytics, hypnotics/sedatives, and antidepressants), physical restraints, pain in last week, pressure ulcers, fall incidents, and depressive symptoms.

**Results:** Participants ( $n=55$ ) were mostly women (63, 6%) aged between 70 and 100 years (mean 83, 4), recently admitted to 16 long-term care facilities in Lisbon and Tagus Valley Region. High recourse to antipsychotic medication and physical restraints at baseline and follow up were identified. The prevalence of the use of one or more antipsychotic medication was 67, 3% at baseline and 76, 5% at follow up. Regarding physical restraints use, the percentage of participants that were physically restrained with at least one restraint measure was 63, 6% at baseline assessment and 76, 5% at follow up. Bilateral bedrails were the most common restraint measured used, followed by belt restraints.

**Conclusions:** Development and design of interventions supporting people with dementia recently institutionalized in long-term care should take into account the adequacy of physical restraints and antipsychotic medication use.

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## **P43: Specific components of a complex care program affected differently job demand and job satisfaction in nursing home staff: a cluster randomized trial**

Ruslan Leontjevas, Martin Smalbrugge, Raymond Koopmans, Debby Gerritsen

**Background:** Effective depression care programs are needed in nursing homes because staff often lacks knowledge about recognizing and responding to depression. Next to direct effects on patients' outcomes, it is important to understand intervention effects on job satisfaction and working conditions of care staff, because job satisfaction affects the patients' quality of life and staff turnover, while job demand and lack of autonomy predict staff burnout.

**Aim:** To explore the effects of a depression care program Act in case of Depression (AiD) on job satisfaction (Maastricht Work Satisfaction Scale for Healthcare), job demand (De Jonge 8-item scale), and autonomy (Experience and Assessment of Work) in nursing home staff.

**Design:** Secondary data from a six-time-points stepped-wedge cluster-randomized trial on patients' outcomes.

Participants were recruited in 33 care units in nursing homes in the Netherlands, and consisted of certified care staff or trainees ( $N=717$ , 90.1%), paramedical staff such as activity therapists ( $N=34$ , 4.3%) and other staff members such as hostess and unit manager ( $N=45$ , 5.7%). The response rate varied from 53.5% at baseline to 40.9% at last time point.

**Analyses:** Mixed models for intention-to-treat and exploratory analyses accounted for repeated measurements and nesting of subjects within units. In exploratory analyses, the models included implementation grades for program components assessment, treatment and monitoring (ratio of residents at the unit for whom the component was conducted when indicated).

**Results:** No significant changes in job demand, job satisfaction and autonomy were found in intention-to-treat analyses. When specific program components were considered, the implementation of treatment procedures was associated with reduced job demand and improved job satisfaction and autonomy. The implementation of assessment and monitoring procedures was associated with increased job demand, while monitoring was associated with reduced autonomy.

**Conclusion:** The results implied that components of complex care programs may affect the staff outcomes in opposite directions and, taken together, produce a zero-sum or a statistically insignificant effect. It is important to account for determinants of job satisfaction and working conditions when new interventions are designed and implemented, and to account for specific components of complex interventions when evaluating intervention effects on staff outcomes.



#### **P44: Trends in Antipsychotic and Mood Stabilizer Prescribing in Long-Term Care in the U.S.: 2010–2014**

Donovan Maust, Lauren Gerlach, Helen Kales, Myra Kim, Claire Chiang

**Background:** Antipsychotic prescribing has declined in long-term care (LTC) in the U.S., while prescriptions of mood stabilizers have increased (Maust et al., 2018). It is unclear both whether these prescribing changes are concentrated among specific patient populations and how use of individual agents has changed over time.

**Objective:** Determine whether specific demographic or clinical subpopulations have been differentially affected by changes in antipsychotic and mood stabilizer prescribing in long-term care (LTC), as well as trends in use of specific medications.

**Participants:** Repeated cross-sectional analysis of long-stay nursing home residents (i.e., >100 days) in a national U.S. sample, 2010–2014 (n=562,485).

**Main Outcome:** Quarterly prevalence of antipsychotic and mood stabilizer use overall, as well as use of specific agents. We used multivariable logistic regression to model the odds of medication use with continuous time (i.e., quarter) as the primary predictor. We used the logistic regression model to calculate the predicted probability of treatment for a long-term care patient in the U.S and how this probability changed over time.

**Results:** Using models accounting for patient characteristics, geography, and presence of dementia, the probability of antipsychotic treatment fell from 0.120 to 0.100 from 2010–2014, a significant decrease ( $p<0.001$ ). The decrease was found across all population strata (e.g., age, sex, race/ethnicity, geography), though was larger among those with dementia than without ( $p<0.001$  for dementia x time interaction). Quetiapine was the most commonly prescribed individual agent; while the predicted probability of use decreased, as a share of all antipsychotic prescribing, it grew to 45.6%. In contrast, mood stabilizer use rose from 0.140 to 0.185 from 2010–2014, a significant increase over time ( $p<0.001$ ). The growth in mood stabilizer use occurred essentially across all population strata (e.g., age, sex, race/ethnicity, dementia, geography).

Gabapentin was the most commonly prescribed mood stabilizer, accounting for over 70% of the class.

**Conclusions:** The antipsychotic decrease and mood stabilizer increase in psychotropic prescribing in U.S. LTC settings have generally been consistent for all patient strata. The growth in gabapentin use merits further investigation, as there is limited evidence for its use (Goodman and Brett, 2019, Konovalov et al., 2008).

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#### **P45: Efficacy of transcranial direct current stimulation in patients with Parkinson's disease: A meta-analysis**

Md Azharuddin, Mohammad Adil, Pinaki Ghosh, Prem Kapur, Manju Sharma

**Background:** Parkinson's disease (PD) is a neurodegenerative disorder characterized by motor deficits, with the severity of the disability, which poses a therapeutic challenge.

Transcranial direct current stimulation (tDCS) has been proposed as a noninvasive brain stimulation approach for Parkinson's disease (PD). However, there is limited evidence related to effectiveness in improving outcomes in patients with PD. The objective of this study to evaluate the efficacy of tDCS for PD patients.

**Methods:** A systematic search on MEDLINE and Cochrane Central Register of Controlled Trials was performed with pairing relevant keywords to identify English language articles for last 10 years. The eligible studies compared tDCS versus control for improving health-related quality of life, disability, and impairment in patients with PD. A random-effects model was used to calculate the pooled mean difference (MD) with 95% confidence interval (CI). Meta-analysis was performed using RevMan 5.3 software.

**Results:** A total of 10 relevant studies met the inclusion criteria with a total of 231 participants. The primary outcome measures, impairment, as measured by the Unified Parkinson's Disease Rating Scale (UPDRS) and secondary outcome measures, as gait speed. Results from the pooled meta-analysis showed very low-quality evidence for no effect of tDCS vs control group on UPDRS III score (MD -0.02, 95% CI -1.94 to 1.89;  $P = 0.98$ ).

One study measured the reduction in off and on time (hours) with dyskinesia, but there was no evidence of a significant effect (MD 0.10, 95% CI -0.14 to 0.34;  $P = 0.41$  and MD 0.00, 95% CI -0.12 to 0.12;  $P = 0.98$  respectively). However, there was no significant difference in gait speed (m/s) in tDCS plus movement therapy compared to control (MD 0.06, 95% CI -0.01 to 0.14;  $P=0.11$ ).

**Conclusion:** The current meta-analysis found, no significant effect in improving health-related quality of life, disability, and impairment in patients with PD between tDCS and control groups. However, further RCTs and real-world studies required to make this finding more robust.

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#### **P46: Performance in instrumental daily activities – characterisation of Portuguese elderly people with cognitive decline and according to the care-support contexts.**

Marlene Rosa, Daniana Dores, Miguel Pires, Luís Ferreira, Maria João Canaverde, Natália Martins, Joaquim Guardado, Teresa Rodrigues, Janine henriques, Ana Carvalho

Introduction: Basic daily activities are generally categorized separately from Instrumental Activities of Daily Living (IADLs), which include more complex activities related to independent living in the community (e.g., managing finances and medications). The performance during IADLs seems to be affected by cognitive decline (1), being a prognostic factor of elderly institutionalisation (2). There are few studies exploring the correlation between the cognitive status and the performance in IADL activities on Portuguese elderly population (3)(4) and these not include older people in different contexts of support. Characterisation of impairments in IADL activities of Portuguese elderly people in different contexts would provide useful information for ageing care policies.

Aim: To characterise the performance in IADLs on elderly with different cognitive status and in different care-support contexts.

Methods: An exploratory descriptive study was conducted in four senior residences of Portugal Centre region. Elderly people were included if they had at least 60 years old and were not bedridden elderly. To assess the cognitive status, it was implemented the Mini-Mental State Examination (MMSE), a simple test of cognitive function based on a total possible score of 30 points. Different cut-off scores were established according to patient's educational level (5). To assess the performance in IADLs the Lawton IADL scale was implemented, which takes 10 to 15 minutes to administer and contains eight items, with a summary score from 0 (low function) to 8 (high function) (6). T-tests for independent samples were performed to characterise differences in the IADLs performance between elderly inpatients and elderly in day-care/home-care systems ( $p < 0.05$ ). The Pearson correlation test was used to understand the relationship between MMSE and IADLs performance.

Results: Hundred and four elderly ( $78.58 \pm 10.30$  years) participated in this study. Forty-three elderly were in day-care/home-care systems (Group 1) and sixty-one were inpatients (Group 2). There are statistical differences in IADLs performance between groups ( $p = 0.012$ ): Group 1 ( $3.75 \pm 0.60$ ); Group 2 ( $1.88 \pm 0.39$ ). Furthermore, there is a significant positive correlation ( $r = 0.37$ ;  $p = 0.012$ ) between cognitive score in MMSE and the IADLs score. As a conclusion, the performance in IADLs is significant low in Portuguese elderly inpatients and this is correlated with poor cognitive function.

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#### **P47: The factors associated with willingness to provide saliva samples and pay for pharmacogenomics testing for antidepressant response in older adults**

Alexandra Chapdelaine, Helen-Maria Vasiliadis

Background: There has been a growing interest in the potential of pharmacogenomics testing to improve treatment choices of psychotropic drugs for mental disorders such as depression and anxiety for more personalized care. The aim of this study was to assess the factors associated with willingness to provide saliva samples and willingness to pay for genetic testing to assess antidepressant response rates for more personalized care.

Methods: Services cohort study of primary care older adults completed a telephone and web based survey on whether they would be (1) willing (yes/no) to provide physician with saliva sample for genetic testing to help physician prescribe a more appropriate treatment; and (2) how much would they be willing to pay out-of-pocket for such a test. Multivariate regression analyses were carried out to study outcomes as a function of sociodemographic, clinical, lifestyle factors, psychological distress, and beliefs about medicines questionnaire (overuse and harm scales and necessity and concern scales).

Results: 88.8% of respondents said they would provide a saliva sample to help physician prescribe a more appropriate treatment. Among these, 42.1% would pay out of pocket for such test. Close to 89.9% would pay up to 25\$, 10% would pay between 26\$- 50\$ and <15 would pay >100\$. Older age (0.85 OR; 95 % CI: 0.73-0.99) and the general harm subscale of the BMQ (0.55 OR; 95% CI: 0.33-0.91) decreased whereas specific concerns subscale of the BMQ (1.42 OR; 95% CI: 1.01-1.99) increased the likelihood of providing a saliva sample. Education was the only variable associated with the amount of out-of-pocket cost willing to pay for test.

Conclusions: The majority of older adults are willing to provide saliva samples to equip physicians with more personalized treatment options. Less than half are willing to pay out-of-pocket.

#### **P48: Problematic alcohol consumption in aged patients with anxiety of depressive disorders: prevalence and clinical characteristics.**

María del Carmen García Mahía, María Vidal Millares, Javier Vicente Alba

Introduction: Depression and alcohol problems are common in psychiatric outpatients, but there are few studies including aged patients.

Aims: To study the prevalence of problematic alcohol consumption in a sample of patients aged 65 or more years and diagnosed of anxiety or depressive disorder and treated in a mental health clinic and to analyse clinical and sociodemographic variables associated to alcohol consumption.

Methods: The sample studied included 194 outpatients aged 65 or more years (31.9% men and 68.1% women) treated in an outpatient clinic and diagnosed of any anxiety or depressive disorder included in DSM-IVTR as main diagnose.

Instruments used were Beck Depression Inventory (BDI), and the Alcohol Use Identification Test (AUDIT).

Other variables studied included age, civil status, level of studies, and specific psychiatric diagnoses.

Results: 64.9 % were diagnosed of anxiety disorder and 35.1% were diagnosed of depressive disorder.

The prevalence of problematic alcohol consumption was 7.8 %, being more frequent in men, especially in men and in the younger group of the sample  $p < 0.05$ ). Problematic alcohol consumption was found with more frequency in patients with generalized anxiety disorder and major depression, in this order.

Conclusions: Problematic alcohol consumption presents high prevalence in patients with anxiety or depressive disorders in the sixth decade of life, decreasing in older patients. Dual diagnose usually is associated with poor prognosis.

It is necessary to make efforts to detect alcohol problematic consumption in aged psychiatric patients and develop specific treatment programs directed to this group of patients in both primary and specialized care units.

#### **P49: Attachment anxiety, depression and perceived social support: a moderated mediation model of suicide ideation among the elderly**

Awirut Oon-arom, Nahathai Wongpakaran, Tinakon Wongpakaran

Objectives Issues concerning associations among attachment anxiety, depression and suicidal ideation among elderly has been rarely explored. The present study investigated the relationship between suicidal ideation, attachment anxiety and perceived support among the elderly.

Methods The authors recruited 191 elderly patients from tertiary care settings in Thailand. They provided data on their suicidal ideation and suicidal attempts using module C of the Mini-International Neuropsychiatric Interview. Their attachment anxiety was determined using the experience of close relationship questionnaire; their level of depression was ascertained using Geriatric Depression Scale; as well as their perception of being supported using the multidimensional scale of perceived social support. We performed two mediation and moderation analyses separately using the product-of-coefficients approach. First, we conducted a mediation model to examine the role of attachment anxiety and depression concerning suicidal ideation. Second, a moderated mediation model was conducted to explore the relationship of perceived social support as a moderator of depression.

Results: Among all participants, 50.8% were females, mean age was 70.26 years (SD = 7.4), and 15.2% reported having suicidal ideation during one month. We found that depression mediated the association between attachment anxiety and suicidal ideation. The association between depression and suicidal ideation was moderated by perception of social support.

Conclusion The findings of this study may broaden our understanding of the development of suicidal ideation among the elderly and stimulate future research exploring the interaction of positive and negative factors of suicidality among the elderly. Implications of the findings were also discussed.

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## **P50: Development of Burden Scale Using Rasch Analysis**

Nahathai Wongpakaran, Tinakon Wongpakaran

Objectives: Caregivers' burden may be interpreted differently across cultures. In most cultures, especially Asian, caregiving is related to filial responsibility, financial burden and psychological distress. The impact of the personal and social life of caregivers could affect the quality of care. The aim of this study was to develop a brief burden scale (BS) that covered essential concerned issues.

Methods: Developing the BS involved two phases: item development and construction and item evaluation. During the item development phase, 40 items from extensive reviews were content validated by experts. Exploratory factor analysis was then used to construct items. Each item was then evaluated to finalize the BS. The final BS was tested in another independent sample to ensure its construct validity.

Results: Twenty-four items were approved by the experts with IOC values more than 0.75 each. Exploratory factor analysis of the 24 items was conducted in 160, yielding 16 items addressing dependence, psychological distress, financial problems and impact on physical and social life (4 items per dimension). Rasch analysis, conducted on the 16-BS, showed a violation of unidimensionality and local dependence. Consequently, 4 items (1 from each domain) were deleted. This created the final 12-item scale. In testing the BS-12 among patients with stroke, the data was shown to fit the Rasch requirement. Despite only 4 dimensions, it showed sufficient unidimensionality of the scale. No local dependence or misfitted items was found. Person reliability was 0.89 (Cronbach 0.91), item reliability was 0.99, and items favorably targeted the sample.

Conclusion: The final BS contained 12 items, demonstrated acceptable internal consistency person and item reliability and adequate construct validity. The 12-BS is relatively short; and therefore, useful for clinical use.

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## **P51: Cognitive deficit in hospitalized diabetic and non-diabetic older patients**

Lia Fernandes, Sónia Martins, Rosa Mendes

Background: Diabetes Mellitus/DM type 2 and cognitive impairment are very prevalent in older persons. DM and chronic multisystemic metabolic disease have adverse effects on cognitive system and memory disorders. These are often accompanied by numerous comorbidities, which in turn, worsen the negative effects on cognitive function. On the other hand, DM type 2 increases the risk of dementia, in the form of multi-infarct dementia, Alzheimer's Disease/AD and mixed type dementia. Insulin signaling dysregulation and small vessel disease in the base of diabetes, are important determinant factors for AD.

Aims: To compare cognitive function of hospitalized diabetic and non-diabetic older patients.

Methods: Cross-sectional study with hospitalized older patients in three Units of the National Network for Integrated Continuous Care/RNCCI in northern Portugal. Inclusion criterion were age  $\geq 65$ y.o. and acceptance for participation. Patients unable to communicate were excluded. Participants were assessed with Mini Mental State Examination/MMSE for cognitive evaluation. Socio-demographic and clinical characterization was obtained from interview and medical records. Socioeconomic status/SES was measured by Graffar Index/GI. MMSE scores were compared between diabetic and non-diabetic patients, using Mann-Whitney test.

Results: The sample included 202 older patients (98 diabetics and 104 non-diabetics) with a mean age of 77(sd=7) y.o., mostly were female (70%), widowed (50%) and 49.5% had low educational level (<4 years). Most of patients had a low SES (83.7%). Moreover, 41.1% lived alone, 38.6% with the partner and mostly had a family caregiver (59.4%). Patients had on average 5(sd=2) comorbidities and took 8(sd=3) medications daily. Also, 43.1% of patients had cognitive deficit. Comparing the two groups, diabetics presented a lower total in MMSE (median=23vs26;  $p<0.001$ ), revealing more cognitive deficit.



Discussion and Conclusion: Diabetic older patients presented more cognitive deficit, compared with non-diabetics, which is in accordance with literature. In this context, early identification of DM risk factors and associated comorbidities with negative effects on cognition, are essential to delay cognitive decline. In this way, the progression of cognitive deterioration seems to be associated with disease duration and poor quality of metabolic control. As a result, a good management of DM is crucial to prevent cognitive deterioration and therefore to achieve better health outcomes.

### **P52: Psychotherapy for Anxiety and Anxiety related symptoms in Mild Cognitive Impairment - A Case Treated with Morita Therapy**

Keisuke Inamura, Masahiro Shigeta, Shunichiro Shinagawa, Kazuyuki Hashimoto, Kei Nakamura

Morita Therapy is a psychotherapy which originated in Japan. Conventionally, it had been applied to 'neuroses. Recently, its application has been broadened to include mood disorders and other anxiety-related disorders. The fundamental concept of Morita Therapy is to accept that the uneasy feeling is a natural experience that humans have, not to control or exclude it. The patients who have anxiety symptoms make various efforts in order to be free from the unpleasant emotion, but it often leads to the worsening of symptoms. Morita Therapy (1) does not try to eliminate anxiety and its symptoms and builds the patients' attitude to leave these symptoms as a natural course, and (2) to focus on the feeling that they should aspire to enhancing their life and to encourage them to exert their lust for life. The authors presumed that this concept can be applied to anxiety symptoms in patients with mild cognitive impairment (MCI) and attempts to intervene.

This case is for a male patient aged 74 years old with MCI who was admitted to an outpatient psychiatry clinic with the primary complaint of subjective cognitive impairments. He had severe anxiety for his own cognitive impairment and recognized a severe decrease of Quality of Life (QOL) due to worrying about his own excessive anxiety. The authors implemented the Morita therapeutic approach to address his anxiety and encouraged him to improve his QOL by accepting the anxiety, not excluding it. During the therapeutic process, various problems were evident, such as the caregiver's excessive fear of dementia, so education about the nature of dementia was provided to dispel the stigma for the family members. As a result, the patient's anxiety was decreased, and his daily activities were observed in spite of his subjective cognitive decline and an improvement in his QOL was also observed.

This case suggested that Morita therapy was effective for anxiety symptoms in patients with MCI.

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### **P53: A Healing Journey for the Older Adult on the Camino de Santiago**

Nery Diaz

The Camino de Santiago is a journey experienced by pilgrims of all ages from all over the world. In addition to pilgrims from Spain, in 2018, Santiago welcomed 183,237 pilgrims, from 176 countries around the world. Of the total pilgrims arriving in Santiago that year, 18% were 60 years of age or older. This represents a staggering 76% increase over the last 8 years in for pilgrims in this age-group. Although the Camino de Santiago is growing in popularity among adults, the healing properties of this pilgrimage are not well understood and may be associated with a combination of exercise, walking in nature and spirituality. Many studies support the positive influence of exercise in promoting mental and physical health. Physical activity is associated with a lower prevalence of major depression, panic attacks, social phobia, specific phobia and agoraphobia.

Although the underlying mechanisms are not clear, the role of tryptophan, serotonin, and brain derived neurotrophic factor are postulated to be the brain chemicals involved in the positive effect of physical activity. Walking in nature is also known to lead to positive health outcomes. Natural environments engender a restorative effect and a means to transform negative psychological states into more positive ones. One study reported lower levels of activity in the subgenual prefrontal cortex in participants who went on a 90-minute walk through a natural environment. The subgenual prefrontal cortex is a brain region that previously has been shown to be associated with negative ruminations in both depressed and healthy individuals. In another study, time in nature was found to have a positive effect on mood and anxiety. This positive effect is also been shown in aspects of cognitive functions in measure of attention, concentration, memory, and impulse inhibition. It is also possible that other psychological processes, such as stress or anxiety or hormones, such as dopamine and oxytocin, may mediate the affective benefits of the experience of nature. Religious motivations are a reason 42.78% of pilgrims undertake their journey. For the 67.22% that did not identify with religious expressions, the Camino offers the opportunity to explore spiritual and



meaning-centered beliefs and practices. There are also cultural and culinary experiences that may entice the pilgrim on their journey, whether it be undertaken on foot, wheelchair, bike or horse.

The renaissance of the Camino de Santiago and the increase in the number of older adults undertaking this pilgrimage provides an exciting opportunity for the psychogeriatric professional to consider offering the older adult a pilgrimage as part of their armamentarium of recovery and healing. Research into the therapeutic benefits of a pilgrimage for healing in the care of the older adult is needed to identify the benefits and risks of such journeys, with outcome measures and improvements in markers of mental health and comorbid medical illness.

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#### **P54: Effectiveness of a dog-assisted therapy programme to enhance quality of life in institutionalized dementia patients.**

María Ángeles Briones Peralta, Isabel Pardo García, Francisco Escribano Sotos

The aim of this study was to assess the effectiveness of a dog-assisted therapy with regard to the use of psychotropic medication and quality of life in persons with dementia institutionalized in a care home.

A dog-assisted therapy intervention was designed, in which 34 residents of a public residential aged care facility in Cuenca (Spain) participated. The participants were assigned to two groups, one experimental group and one control group. The programme consisted of one weekly 50-minute session during nine months. Analysis of covariance (ANCOVA) was used to compare post training values between groups, using baseline values as covariates.

Our findings do seem to support the hypothesis that AAT may be effective to enhance quality of life in residents in an aged care home. However, aspects such as the format, time and content of the sessions as well as their possibilities of reducing or eliminating psychotropic medication require more research.

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**P55: Effects of a mindfulness intervention in middle-aged and old adults with asthma.**

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Background: Mindfulness-based cognitive therapy (MBCT) has been shown to improve psychological distress and health-related quality-of-life in chronic respiratory diseases, and to improve cognitive performance in old adults. Mindfulness skills could mediate these effects. The aim of this study is to compare differences between two 8-weeks group-based interventions, MBCT and asthma-education programs, in middle-aged and old adults with asthma.

Method: Fifty-five adults with asthma in Galicia, NW of Spain. Mean age 53.9 years ( $\pm 11.7$ , range 38-74), 29 women (64.4%), mean education was 12.2 years ( $\pm 4.6$ , range 8-20). Participants were randomized to receive either MBCT program (n= 24) or asthma-education program (n= 21). MBCT consisted of 2-hour sessions intended to practice nonjudgmental attention and sharing life experiences. Primary outcomes were quality of life (Mini-AQL domains: symptoms, activity limitation, emotional function, and environmental stimuli) and affective state (alexithymia measured with TAS20, anxiety and depression with HADS). Secondary outcomes were cognition (measured with MoCA and Trail-Making test A and B), and mindfulness skills (FFMQ facets: Observe, Describe, Acting with Mindfulness, Non-judge, and Non-react). Repeated measures models were conducted with SPSS using intervention arms (MBCT or education) as factor and age as covariate.

Results: Statistically significant time-arm effects were found for MiniAQL symptoms ( $F=4.17$ ,  $p<0.05$ ), HADS anxiety ( $F=5.02$ ,  $p<0.05$ ), and FFMQ observe ( $F=4.95$ ,  $p<0.05$ ). Tendency-to-significant time-arm effects were found in MiniAQL activity limitation ( $F=3.5$ ,  $p=0.07$ ) and FFMQ non-react ( $F=3.8$ ,  $p<0.06$ ). Time effect but not time-arm interactions were found in MiniAQL emotional function ( $F=7.28$ ,  $p=0.01$ ) and Trail-Making-A ( $F=5.28$ ,  $p<0.05$ ). No treatment effects were found for MiniAQL activity limitation and environmental stimuli, HADS depression, MoCA, Trail-Making-B, TAS-20, and FFMQ describe, acting-with-mindfulness and non-judgment. No significant age influences were found.

Conclusions: MBCT can be an effective intervention model for improving emotion-related quality-of-life, anxiety and self-observation skills. The lack of age effects suggests that interventions can be successfully used in different age groups of asthma patients.

**P56: Including informal caregivers in decision making regarding the treatment of neuropsychiatric symptoms in dementia**

Sarah Janus, Esther Warmelink, Cecile Nieuwenhuys, Jeannette van Manen, Wilco Achterberg, Sytse Zuidema

Background: In the Netherlands, physicians are legally obliged to ask informal consent for medical decisions in patients with insufficient decisional capacity. In addition, the informal caregiver's knowledge may be important in preventing occurrence or escalation of neuropsychiatric symptoms in nursing home patients. However, it is not yet clear in what way informal caregivers are involved in decision making regarding treatment of neuropsychiatric symptoms. This study aims to get an overview on the current involvement of the informal caregiver.

Methods: Participants were selected by applying purposive sampling. In-depth interviews with 10 quadruplets - informal caregiver, primarily responsible nurse, physician and psychologist of one patient – were conducted regarding either a start, stop or change in dose of a psychotropic drug for the treatment of a neuropsychiatric symptom. Interviews took place between February 2018 and April 2019. The data was thematically analyzed

Results: Although there was some involvement of the informal caregiver in most cases, informal caregivers were not present during the phase of discussing treatment options. During the interviews, professionals indicated to take the perspectives of the informal caregiver into account either explicitly (by asking) or implicitly. However, informal caregivers were only informed about a treatment decision or presented with one treatment option and were asked for consent. Professionals were more likely to involve informal caregivers during the decision process that were more assertive. Children were more likely to insist on getting involved in the decision process in comparison to spouses who more often expressed their trust in professionals and were satisfied with leaving the decision to the professional.

Conclusion: More structural contact moments might be needed with the informal caregiver linked to the behavioral consultations to explore possible treatment options together. This is likely to result in better treatment decisions. Furthermore, discussing treatment options with the informal caregiver early on might stimulate spouses to take part in the decision making.

**P57: Individualized psychological intervention for people with comorbid dementia and visual impairment in a day-care center. Two single cases.**

Lucía Jimenez-Gonzalo, María del Sequeros Pedroso-Chaparro, Samara Barrera-Caballero, Andrés Losada-Baltar

**Introduction:** Research on behavioral and psychological symptoms of the dementias (BPSD), such as apathy or reduced social contact, show that these are not a direct consequence of the disease, but are influenced by environmental factors. Having a comorbid problem such as visual impairment may increase the occurrence or consequences of BPSD in the functional, social and psychological spheres of the persons. Drawing upon theoretical models such as the progressively lowered stress threshold model, the unmet needs model and the behavioural model, an intervention was designed in a day care center for individualizing the attention received by two persons with comorbid dementia and visual impairment. The objectives were to decrease the apathetic behaviors and to increase their social and engagement behaviors. A clinically relevant reduction of the depressive symptomatology was expected.

**Method:** Two male users of a day-care centre with Alzheimer's disease and severe visual impairment (macular degeneration) participated in this study. Face-to-face interviews were carried out at baseline and after the intervention measuring cognitive and functional status as well as depressive symptomatology. For the measurement of BPSD, an adaptation of the Dementia Categorization Recording Observational System (D-CROS) was used. The intervention lasted eight weeks, with two sessions per week, one hour long each. Through individual talks with each of the participants, and information obtained through reminiscence techniques, adaptations were included in other activities (e.g., music therapy and group cognitive stimulation) aimed at encouraging social interaction.

**Results:** The results show a decrease on the apathetic behaviors and an increase in the engagement and social behaviors as measured through the D-CROSS. A clinically significant decrease in depressive symptomatology was observed in both participants.

**Discussion:** The results provide additional support for the usefulness of theory-driven interventions aimed at reducing the behavioral and psychological symptoms of dementia. Detecting the reasons that make it difficult for persons with dementia and other comorbid problems to express their needs and fulfil them, through strategies to individualize the attention they receive, may significantly increase their well-being.

#### **P58: Making the manual of how to cope with symptoms of dementia on various daily scenes.**

Yoshiyama Kenji, Kazui Hiroaki, Fujisue Hiroshi, Ikeda Manabu

**Introduction:** A person with dementia should live in the environment where he or she lived until illness. In this point, it is important to resolve problems caused by not only cognitive dysfunction but also Behavioral and Psychological Symptoms of Dementia (BPSD). The aim of this study is to understand the methods for coping with these problems on various daily scenes by using the questionnaire and to make the manual of how to cope with symptoms of dementia on various daily scenes.

**Methods:** Subjects were shop clerks, fire station staffs, and care managers in Kawanishi city. We asked all subjects to answer the questionnaire that we made to understand what problems occurred on various daily scenes and how these problems were coped with.

**Results:** We got 84 answers from shop clerks, 24 answers from fire station staffs and 95 answers from care managers respectively. In the 84 answers from shop clerks, 39 clear statements were included. In the 24 answers from fire station staffs, 24 clear statements were included. In the 95 answers from care managers, 113 clear statements were included. Of all these 176 clear statements, the number of problems due to an erroneous recognition was the largest ( $n = 25$ , 14%), the number of problems due to an impairment in understanding was the second largest ( $n = 22$ , 13%) and the number of problems due to getting lost was the third largest ( $n = 18$ , 10%). In these 176 clear statements, the number of the methods for coping with problems that were effective was 133. From these 133 methods, we made the manual of how to cope with symptoms of dementia on various daily scenes.

**Conclusion:** On various daily scenes, many problems were due to not BPSD but cognitive dysfunction. In this point, anti-dementia drugs play an important role in resolving these problems. Moreover, our manual plays an important role in resolving these problems.

#### **P59: Process evaluation of a participatory action research-RCT aimed at reducing inappropriate psychotropic drug use in nursing home residents with dementia by tailored intervention-and implementation plans**

Claudia Groot Kormelinck, Charlotte Van Teunenbroek, Sytse Zuidema, Debby Gerritsen, Martin Smalbrugge

**Background:** Psychotropic drugs are frequently used and often inappropriate prescribed for nursing home residents with dementia with neuropsychiatric symptoms, despite their side effects and limited effectiveness. Non-pharmacological (psychosocial) interventions are recommended as first-line treatment. Multidisciplinary care programs targeting staff is another way to enhance appropriate psychotropic drug use (PDU). However, effects of the latter, 'complex interventions' are regularly small due to suboptimal implementation. Given the complexity of implementation, standardized interventions are less likely to be successful.

We integrated participatory action research (PAR) with a stepped wedge cluster RCT to reduce inappropriate PDU. Using PAR, we adapted to local differences and needs. Two strategies were aimed at increasing effectiveness, being coaching, and tailored information provision which was provided at several time points on PDU. This included a problem analysis prior to



start, targeting perceived problems in managing NPS and PDU. Chosen interventions by the nursing homes were required to match the experienced problems, resulting in a tailored intervention- and implementation plan.

Methods: A process evaluation was carried out to gain insight into internal and external validity, using a model proposed by Leontjevas et al. Data about sample quality, intervention quality en implementation knowledge was evaluated. Data were collected from internal project leaders and coaches, using a digital questionnaire and semi-structured interviews.

Conclusion: Preliminary results show that implementation is likely to be facilitated by collaboration and communication between stakeholders, key-persons taking the lead, involvement of staff, and management support. Organizational changes and staff turnover seem to negatively impact implementation. Implementation within nursing homes showed varying degrees of success, indicating that implementation is complex despite our implementation strategies. Results will be presented at the symposium.

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## **P60: Development of a mobile application to monitor psychotropic drug prescriptions**

Sarah Janus, Naomi Rasing, Sytse Zuidema, Charlotte Teunenbroek

Introduction: Rational use of psychotropic drugs as treatment of neuropsychiatric symptoms is seen as an important indicator for ensuring basic safety. A mobile application was developed based on the Dutch “Multidisciplinary guideline for problem behaviour in dementia” (Zuidema et al, 2018) to stimulate awareness among prescribers in elderly care. We investigated whether the use of the application 1) lead to more appropriate psychotropic drug prescriptions for neuropsychiatric symptoms and 2) was experienced as user-friendly by participating physicians.

Method: We conducted a pilot study with interviews with two physicians for the development of the application. The feasibility and effect of the application was studied using a pre- and post-measurement for 4 months (December 2018 -April 2019, intervention period). The primary outcome of the study was the appropriateness of the psychotropic prescriptions measured by



the researcher. Secondary results were the experienced user-friendliness of the app by the participating physicians and the log data on the use of the application.

Results: For the development the physicians used the application on a smartphone or tablet, thinking out loud. The app was adapted according to physicians' input. For the pre-and post-measurements, a total of 63 physicians participated in the study and had access to the application between December 2018 and April 2019. At this moment the data from the measurements are being processed.

Discussion: The application could be a useful tool for doctors to actively evaluate their prescriptions and stimulate awareness. We expect that the application will lead to more appropriate prescriptions according to the Dutch guideline. A possible threshold mentioned is that the application is a stand-alone tool - not connected to existing prescription systems - which provides an additional action for the physicians during prescribing.

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### **P61: Psychiatric symptoms in patients with hyponatremia.**

Lucas M. Gallardo, María del Carmen García Mahía

It is widely reported that some psychoactive drugs can lead to hyponatremia (some of them through a SIADH syndrom1), and hyponatremia can also be a cause of psychiatric symptoms that frequently seen in our clinical practice2.

The main purpose of this research is to review the psychoactive drugs that could cause hyponatremia and its psychiatric symptoms, as well as their management and expected evolution.

In the current research, psychoactive drugs are reviewed in relation to hyponatremia and its psychiatric symptoms, as well as their expected management and evolution.

About a clinical case:

89 year old woman, without psychiatric history of interest, basally independent for ADL admitted in the Internal Medicine Service due to deterioration of the general state. As previous antecedents, costal arc fractures the month before after a casual fall, requiring a previous admission at hospital, when symptomatic multifactorial hyponatremia was confirmed (use of thiazides + SIADH). During actual admission, the family describes a sudden deterioration in the basal state of the patient: disorientation, inability to self-care, rejection of the intake, insomnia, with occasional episodes of nocturnal agitation.

The Internal Medicine doctors request psychiatric assessment describing fluctuating symptoms, opposition and distraction to the interview, and collusion in answers.

During our interview, temporary disorientation it's appreciated; despite this, the referred symptomatology improved spontaneously, without any kind of management.

The reasoned diagnosis, differential diagnosis, etiological diagnosis and the management of the episode that motivated the admission are exposed.

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### **P62: Rivastigmine Reverse Tolerance of Benzodiazepine in a Reversible Dementia Case**

Kun-Po CHEN

Background/Objectives

Physostigmine has long been recognized as an antidote to reverse anticholinergic delirium and all untoward central nervous system effects of benzodiazepine.(Blitt and Petty, 1975, Arens et al., 2018) Rivastigmine tartrate, indicated for dementia treatment, inhibit both acetylcholinesterase (AChE) and butyrylcholinesterase (BChE).(Jann et al., 2002) The order of inhibitory potency towards AChE activity under optimal in vitro conditions for each cholinesterase inhibitor was physostigmine > rivastigmine > donepezil.(Ogura et al., 2000)

"Reversible dementias" are conditions that may be associated with cognitive or behavioral symptoms that can be resolved once the primary etiology is treated. Studies have highlighted an increased risk of dementia in long-term benzodiazepine users. (Zhong et al., 2015) Health care providers should eliminate unnecessary medications and avoid adding benzodiazepine or antipsychotics. Minimizing medications is important in reversible dementia management. Antipsychotics should be prescribed only when behaviors pose a significant safety issue or if the patient is very distressed. (Bessey and Walaszek, 2019)

Case Report

Ms. A, age 62, has diabetes mellitus and major depressive disorder, most recently depressed, with comorbid sleep disorder. She has been taking citalopram, 20 mg/d, to control her depressive symptoms. Her score of The Cognitive Abilities Screening Instrument (CASI) was 56/100 in October 2015. After antipsychotics add on (quetiapine 50mg, sulpiride 100mg), the score of

CASI was 40/100 in November 2018. However, her condition reversed after discontinuation of antipsychotics and several periods of rivastigmine prescription. On discharge, her score of CASI was 68/100 in January 2019.

#### Discussion

To the best of our knowledge, rivastigmine tartrate capsules are indicated for treatment of: mild-to-moderate dementia of the Alzheimer's type or mild-to-moderate dementia associated with Parkinson's disease. In the case present above, rivastigmine is helpful and effective in reversible dementia. It is essential for all mental health professionals to follow the label information and treatment guideline when encountering signs or symptoms of dementia. Try our best to achieve good treatment quality with cholinesterase at hand is within our province.

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### **P63: Traditional Chinese Medicine Improves Circadian Rhythm Disturbance of an Elder with Dementia: A Case Report**

hung pin Tan, Kun-Yuan Hsiao, Wen-Chen Ouyang, Kun-Yuan Hsiao

Dementia is prevalent in the elderly. Sundown syndrome or circadian rhythm disturbance are common clinical problems in the elderly with dementia. Because there are no available guidelines of pharmacotherapy for the treatment of sundown syndrome in dementia, some patients choose other alternative treatments, such as Chinese herbal medicine. We report a case of senile dementia with sundown syndrome treated by traditional Chinese medicine (TCM) treatment. The 87-year-old female with dementia had memory impairment since 2008, and circadian rhythm disturbance became gradually obvious after 2017. Her neuropsychological exams showed CASI score was 46/100, MMSE score was 13/30, and the result of CDR was severe dementia on 03/08/2018. She had been sent to day care center in general hospital for rehabilitation and maintenance of daily living since 12/24/2018 and received TCM treatment simultaneously, i.e. the herbal granule mixture once a day for improving the awareness, and another herbal granule mixture as hypnotic and mood stabilizer before sleep. Afterwards, Chinese medicine practitioner modified her prescription for 3 weeks, the time of sleeping at night and the time of awareness in day increased continuously. Her circadian rhythm restored in 3-months follow-up. Conclusively, we demonstrated a case with dementia, sundowning and sleep-wake problems were regularization by using Chinese herbal medicine. The TCM may be a potential candidate of an alternative treatment for sundowning syndrome in dementia.

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### **P64: Constructive aligned role play to improve learning of psychogeriatric skills for students and residents**

En Ong

Background: Simulation-based education (SBE) such as roleplay has been employed successfully 1 to train skills without patient contact, which is increasingly important due to reducing patient contact opportunities with changes healthcare delivery 2 and the ethical emphasis on protecting patients 3. Skills such as assessment of delirium, cognition, depression, psychosocial history may be challenging for the beginner to acquire by starting with real patients. Largely debunked myths that learners hate it 4 and the lack of resources/time have limited the adoption of SBE 5, 6. Roleplay with peers and patient teaching associates (PTAs) especially with constructive alignment may be acceptable to learners and allow opportunity to practice and gain confidence in a skill without significant resource requirements.

Aim: Discuss the effectiveness of constructively aligned role play for improving learning of psychogeriatric skills.

Method: A brief literature review (Medline, EMBASE) on roleplay in psychogeriatrics for rationale, pros and cons and to design a roleplay teaching activity.

Evaluation of the roleplay teaching activity included questionnaires, free-text comments and focus groups (learner confidence, perceptions about learning task) to determine if and why the education intervention was effective.

Results: Evaluation data suggest a high level of learner satisfaction, good engagement in the teaching activity, and improved confidence.

Discussion: Learners approve of roleplay (especially as relevant to assessment/ constructively aligned) and wish for more.

Conclusions: Roleplay teaching will become increasingly important with limitations to patient access. Preliminary evidence suggests it can be successful for teaching skills, however, it remains to be seen if wider adoption without a champion will be successful.

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### **P65: Determinants of the institutionalized elderly people's quality of life and their relationship with good treatment.**

Patricia López-Frutos, Gema Pérez-Rojo, Cristina Noriega, Cristina Velasco, Isabel Carretero, Javier López, Leyre Galarraga

Introduction: The quality of life of elderly people who live in institutions can be affected by different factors (physical, psychological and / or social). One of them is the treatment perceived by the professionals who take care of them.

Simultaneously, the treatment provided by professionals may depend on various variables, for example, burnout or their own quality of life.

Objective: The objective of this study was to analyse, firstly, what factors determine the quality of life (QoL) of the elderly who live in institutions and, on the other hand, to discover if any of them has a greater capacity to predict it.

Method: 42 elderly and family members (tutors) of people institutionalized in nursing homes from the Community of Madrid region (Spain), with an average age of 83.79 (ST = 7.55), and 69 auxiliary nurses who were working in these nursing homes, with an average age of 38.67 (ST = 11.79), participated in this study. QoLand Good Practices perceived in the nursing home were analysed in the sample of older people. In the sample comprised by auxiliary nurses, QoL, Burnout and Good Practices both performed by them and observed in the institution were analysed.

Results: The results showed that older people's QoL could be explained by the good practices they perceived in the nursing home, auxiliary nurses' QoL and good practices carried out by the auxiliary nurses predicting the 80 % of the variance ( $F = 52.97$ ;  $p \leq .05$ ;  $R^2 = .80$ ).

Conclusion: Older people's QoL and their perception of the good practices conducted in the nursing home seem to be related to professionals' QoL and the good practices they admitted to perform. These results highlight the importance of developing new tools that help to evaluate good practices conducted in nursing homes as well as the development of intervention programs that promote them. This would allow professionals to work from the Good Practices' viewpoint, which improves their quality of life and, in turn, has a positive impact on older people's quality of life.

### **P66: Investigation of cognitive function of the community-living oldest-old using the ACE-III from the Arakawa 85+ study**

Yoko Eguchi, Hidehito Niimura, Hisashi Kida, Kouta Suzuki, Chiho Kitashima, Midori Takayama, Masaru Mimura

[Objectives] The detailed cognitive function patterns of the oldest-old living in the community is not fully elucidated. This study investigated the differences in cognitive function between healthy group and mildly impaired group as classified by the Clinical Dementia Rating (CDR) using the Addenbrooke's Cognitive Examination III (ACE-III).

[Methods] Participants were residents of Arakawa ward in Tokyo among the prospective cohort as part of the Arakawa 85+ study. The inclusion criteria were age 85 or above, and rated as 0 or 0.5 in the CDR. A total of 226 participants (CDR 0 group: 159 participants, 66 males, mean age of 88.0; CDR 0.5 group: 67 participants, 40 males, mean age of 88.0) were included in the analyses. Participants were assessed by the CDR and the ACE-III.

[Results] The mean total ACE-III score of the CDR 0 group was 83.6, which was above the cut-off score indicating not dementia in clinical setting. Contrarily, the mean score of the CDR 0.5 group was 73.4, which was below the cut-off score suggesting possible dementia. Mean correct response rates in the ACE-III in the order of attention, memory, fluency, language and visuospatial function, were 94.4%, 73.5%, 62.8%, 92.8%, and 91.4% for the CDR 0 group; and, 85.7%, 51.5%, 53.0%, 90.1%, and 85.7% for the CDR 0.5 group, respectively. According to the T-test performed for each cognitive domain, significant differences between the two CDR groups were noted in attention, memory, and fluency at 1% level ( $df = 216$ ,  $t = 6.8, 7.1, 3.9$ ,  $p < 0.001$ ).

[Conclusions] This study examined in-depth cognitive functions for a large number of the oldest-old who are still autonomous in the community. Cognitive decline was observed in attention, memory, and fluency function in the CDR 0.5 group, while their language and visuospatial function were preserved intact. Therefore, these cognitive domains may be minimally necessary for the oldest-old to live independently and maintain their daily life.

### **P67: Neuropsychological Aspects of Older Diabetics in Three Units of the National Network for Integrated Continuous Care**

Rosa Mendes, Sónia Martins, Lia Fernandes

**Background:** The increase of chronic diseases, such as Diabetes Mellitus (DM), resulting from demographic changes, imposes a great health care paradigm change, adapted to this new reality. One of these measures, contributing to the improvement of old patient care was the development of the National Network for Integrated Continuous Care (RNCCI), in Portugal, since 2006. RNCCI main objective is to provide care, focused on global recovery, in order to promote persons' autonomy in a situation of dependency.

**Aims:** In this context, this study aims to characterize hospitalized older patients with DM in RNCCI, according to their sociodemographic, clinical and psychological characteristics.

**Methods:** A cross-sectional study was conducted with hospitalized older patients in three continued convalescence care units (hospitalization up to 30 days) of RNCCI in northern Portugal. Patients aged  $\geq 65$  years old with DM diagnoses were included. Those unable to communicate were excluded. Socio-demographic and clinical characteristics were obtained through chart review and clinical interview. Socioeconomic status (SES) was measured by Graffar Index (GI). Cognition, depression and anxiety were assessed with Mini Mental State Examination (MMSE) and Hospital Anxiety and Depression Scale (HADS), respectively.

**Results:** The sample ( $n=98$ ) presented a mean age of 77.3 ( $sd=6.9$ ) years old and mostly were female (72.4%), widowed (54.1%) and with low education level (mean=2.7 years,  $sd=2.4$ ). Most of patients had a low SES (85.7% in Classes IV and V), according to GI. Also, 38.8% lived alone and 36.7% with the partner, and most of them with a family caregiver (64.3%).

Regarding clinical characteristics, the mean number of comorbidities was 6 ( $sd=1.8$ ) and on average 9 ( $sd=2.2$ ) daily drugs were taken. Major polypharmacy ( $\geq 5$  medicines) was found in 98% of the patients. Based on MMSE, 53.1% scored for cognitive impairment. According to HADS, 11.2% had depressive symptomatology and 3% anxiety symptoms.

**Discussion and conclusion:** In this study, older hospitalized in RNCCI with DM presented a low socioeconomic status, high number of comorbidities and associated polypharmacy, as well as significant cognitive impairment and clinical relevant depressive symptoms. This work intends to contribute to the knowledge about clinical and psychosocial characteristics of diabetic older patients in this specific context of RNCCI.

### **P68: Old is not Dull: Age-ism in the time of Botulinum Toxin**

Nery Diaz

Stereotyping and discrimination against individuals or groups on the basis of age is called ageism. Studies have shown that negative ageism adversely affects the health outcomes of older adults. In a 2018 study conducted in the United States, it was found that the annual cost of ageism was \$63 billion. As the percentage of the world's population of older adults continues to grow, however, perceptions of age and aging are shifting. Society is coming to terms with the discomforts and anxieties surrounding a fear of aging and more positive views on aging are emerging. When compared with the younger population, older adults demonstrate a higher level of resiliency and report increasing levels of satisfaction with life. Global public health campaigns to highlight positive ageism are needed to educate the public about the enormous contributions that older adults make to society. Such a campaign can aim to eliminating prejudicial attitudes, and discriminatory practices.

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### **P69: Perceived need for mental health care and persistence of common mental health disorders in older adults consulting in primary care**

Catherine Lamoureux-Lamarche, Djamal Berbiche, Helen-Maria Vasiliadis

**Background and objectives:** Need for mental health care is rarely assessed using the patient perspective, which has previously been measured by the perceived need for care (PNC) (Meadows et al. 2002; Prins et al. 2009). Studies on PNC and its association with the course of depression and anxiety disorders are scarce, particularly in older adults. This study aims to assess the association between PNC and the persistence of common mental disorders (MD) among older adults.

**Method:** This study included 170 older adults with a common MD recruited in primary care clinics and participating in a larger 3-wave longitudinal study (2011-2016) in Quebec. An adapted version of the PNC Questionnaire (Meadows et al. 2000) was used in wave-3 (2015-2016) to assess the presence of unmet, met or no need. The persistence/remission of MD was measured by the presence/absence of at least one common MD at baseline (wave-1) and at follow-ups, 3 (wave-2) and 4 years (wave-3) later. Common MD were defined by the presence of depression or an anxiety disorder using self-reported (DSM-5) and administrative data (ICD-9, ICD-10). Multinomial regressions were carried out to assess PNC as a function of persistence of common MD controlling for demographic and clinical factors.

**Results:** The prevalence of common MD at Wave-1 was 14% and 36% and 26% were persistent at follow-ups 3 and 4 years later. As opposed to those in remission, participants with a persistent MD at wave-2 were more likely to report a need [no need (REF); unmet need: OR 2.75, CI 1.17-6.45; met need: OR 2.28, CI 1.06-4.93]. Older adults with a met need were more likely (OR 4.59; CI: 1.98-10.64) to have a persistent disorder than being in remission at wave-3 compared to participants without a perceived need. No significant association between older adults with a met and an unmet need was observed in regard to persistence of common MD.

**Conclusion:** Our results suggest that older adults with a met and an unmet need are relatively similar with regards to persistence/remission of common MD. Future studies should focus on PNC and satisfaction with services and quality of life. Meadows G, Burgess P, Bobevski I, Fossey E, Harvey C & Liaw ST 2002. 'Perceived need for mental health care: influences of diagnosis, demography and disability', *Psychological Medicine*, vol. 32, no. 2, pp. 299-309.

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### **P70: Perceptions and attitudes about GRADIOR program in older people with mild cognitive impairment or dementia: A focus group study**

José Miguel Toribio-Guzmán, M<sup>a</sup> Cruz Sánchez-Gómez, M<sup>a</sup> Victoria Martín-Cilleros, Angie A. Díaz-Baquero, Leslie Contreras-Somoza, Sonia Verdugo-Castro, Esther Parra-Vidales, Maritza García-Toro, Manuel A. Franco-Martín

Cognitive rehabilitation is a highly individualized, non-pharmacological intervention for people with mild cognitive impairment (MCI) and dementia, which in recent years has also been developed for various IT platforms. GRADIOR is a computer-based cognitive rehabilitation and training program aim to people with cognitive impairment of different etiology, as well as for cognitive stimulation of healthy individuals (Toribio-Guzmán et al., 2018).

**Objective:** This focus group study aimed to explore how people with MCI or mild dementia perceive the GRADIOR computer cognitive rehabilitation program, as an important measure for the development of this technology focused in the needs of their users.

**Method:** Four focus groups were conducted using a semi-structured interview guide. Two focus group include thirteen people with MCI, their ranged age from 60-87 years (M=75, 31; SD=8, 04) and two groups include thirteen people with mild dementia their ranged age from 69-93 years (M=76, 31; SD=10, 46) who have experience with GRADIOR program. All participants made an active contribution to the discussion. Interviews were audiotaped and then transcribed. A content analysis of the data was undertaken.

**Results:** The findings of this study showed that people with MCI or mild dementia have a high degree of satisfaction with the GRADIOR program. Users think that is an easy-to-use program, highlighting that the touch screen facilitates their task. They think that the instructions offered by the program are adequate. They emphasize that the program makes them think, to be



busy and helps them to maintain attention and memory, although it presents some difficulties such as the shortage of time to assimilate and respond to some content, such as Span tests of numbers and letters in reverse order. The majority would recommend GRADIOR to other people in their environment. Users agree that doing rehabilitation in a center facilitates socialization.

Conclusion: The results reflect the largely positive perceptions of the participants about this technology. Qualitative studies in MCI and dementia are inevitably hampered by differences between cognitive impairment levels. However, this study shows the opinions that coincide in many aspects in these two groups, which suggests that certain aspects of the program are clear, valuing their experience as satisfactory.

TORIBIO-GUZMÁN, J. M., PARRA VIDALES, E., VIÑAS RODRÍGUEZ, M. J., BUENO AGUADO, Y., CID BARTOLOMÉ, M. T. & FRANCO-MARTÍN, M. A. 2018. *Rehabilitación Cognitiva por Ordenador en Personas Mayores: Programa Gradior*. *Aula*, 24, 61-75.

### **P71: Physical and mental multimorbidity patterns in older adults: using network analysis to explore different data sources**

Samantha Gontijo Guerra, Helen-Maria Vasiliadis, Djamal Berbiche

INTRODUCTION & OBJECTIVES: There has been a growing interest in the investigation of multimorbidity due to the population aging and the impact that concurrent chronic diseases have on individuals, caregivers and public health. This study (work in progress) intends to explore and present the patterns of multimorbidity (MM), especially the important role that common mental problems play in the multimorbidity networks, as function of the data source use.

METHODS: Sample: 1625 community-dwelling older adults ( $\geq 65$ y.o) without cognitive impairment. Participants were recruited in primary care practices of an administrative region of the Quebec Province participating in the ESA-Services study. Data collection: face-to-face at home interviews based on a structured computer-assisted questionnaire. Data sources/measures: linked survey and health-administrative data on 17 chronic conditions (arthropathy, cancer, cardiovascular disease, chronic urinary tract problems, common mental health disorders, dermatologic conditions, diabetes, eye diseases, gastrointestinal diseases, headaches, hyperlipidemia, hypertension, liver disease, musculoskeletal conditions, obesity, respiratory tract disease, thyroid problems), used either separately or in combination. Analytic strategy: network analysis will be used to study the relationship among chronic conditions. Nodes will be represented by each of the 17 chronic conditions and the edges will correspond to the links between each pair of conditions.

PRELIMINARY RESULTS: Prevalence of each chronic condition varied, as function of the data source, from 0, 3% to 68.7%. Up to 35.6% of participants presented a common mental health disorder. Prevalence of multimorbidity ranged from 27.3% to 95.9% depending on the cut-off ( $\geq 2$  and  $\geq 3$  chronic conditions) and data source used.

DISCUSSION: the high prevalence of MM and the great variability of results according to of the data sources call attention for the need to better explore how the pattern of multimorbidity may change as function of the data source used. This may affect how prevention programmes and healthcare care delivery are planned and implemented.

CURRENT STAGE OF WORK: work in progress

Catalá-López, F. et al. (2018) 'Mapping of global scientific research in comorbidity and multimorbidity: A cross-sectional analysis', *PLOS ONE*, 13(1), p. e0189091. doi: 10.1371/journal.pone.0189091.

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Wang, Y.-P. et al. (2019) 'Multilevel Analysis of the Patterns of Physical-Mental Multimorbidity in General Population of São Paulo Metropolitan Area, Brazil', *Scientific Reports*, 9. doi: 10.1038/s41598-019-39326-8.

### **P72: Preliminary Results Research for Moderate Cognitive impairments and Dementia in the Kyrgyz population.**

Turuspekova Saule, Demesinova Bayan, Murkamilov Ilhom, Murkamilova Zhamila, Bespalova Lyudmila, Rayimzhanov Zafarbek

The aging of the population is the most significant social problem of the 21st century and is associated with the development of cognitive impairment and dementia. The majority of the aging population in the world is concentrated in Asia. Data on the prevalence of mild cognitive impairment (MCI) and dementia are absent in Central Asia, particularly in Kyrgyzstan. Moderate cognitive impairment, according to several authors are an intermediate stage between normal aging and dementia (Brodaty H., 2013, Peterson, 2009). The prevalence of mild cognitive impairment varies from 16% to 20%, indicating a high risk of transformation of MCI into dementia. 46, 8 million people worldwide suffer from dementia. 5, 2% are people over the age of 60. The cause of cognitive disorders in old age can be a number of diseases, including neurodegenerative. According to projections, it is expected that neurodegenerative diseases will surpass cancer as the leading cause of death by 2040 (Walter

U., 2013). The Global prevalence pattern of dementia depends on several factors, from life expectancy to the health status, last but not least from the particular environment. It is very difficult to determine a particular factor for it.

Purpose: To study the prevalence of cognitive impairment and Dementia in persons the Kyrgyz population over 50 years old in Bishkek.

Materials and methods: 99 respondents aged from 50 to 90 years (Mean age 63.2) took part in the screening. The material was collected using the Champ Clinic Questionnaire Questionnaire and the MOCA test (cut point <26) on the basis of the Bishkek city polyclinic.

Results: Mild cognitive impairment was detected – 47, 5%, normal cognitive function - 30%, pronounced cognitive impairment - 14.4%, dementia -8, 1%. Expected risk factors for light cognitive impairment and mild cognitive impairment: arterial hypertension – 30%, Cardiac ischemia, angina pectoris – 13%, pathology of the thyroid gland and pancreas (Diabetes, hyperthyroidism and hypothyroidism) – 21%, level of education – 11%, Bad habits (smoking) - 25% respectively.

Conclusions: Kyrgyzstan is on the list of low-income countries and the growing trend of the aging population. We badly need further screening of the population for the detection of weak cognitive impairment and dementia

### **P73: Static Balance Impairment in frail older adults: influence on their quality of life and functionality.**

Helena Vila, Irimia Mollinedo, Spuch Carlos, José María Cancela

Introduction: Frailty is defined as a state of vulnerability that entails a higher risk of adverse results (Clegg, Young, Iliffe, Rikkert, & Rockwood, 2013). To define a person as frail, they must meet at least three of the following criteria: involuntary weight loss, muscular weakness, slow walking speed, low levels of physical activity, exhaustion and a lack of energy (Fried et al., 2001). This study had two aims, the first one, to describe the behavior of cognitive impairment respect to quality of life and functionality in frail women. The second aim was to describe the relationship between cognitive impairment and static balance in frail women.

Methodology: This is a cross sectional study. We have evaluated 54 frail women with an average age of  $86.69 \pm 6.58$  years, with moderate cognitive impairment (Minimental Test, MMSE  $16.57 \pm 8.05$ ). The degree of independence, quality of life and static balance was assessed through the Barthel Index (Mahoney, & Barthel, 1965), 12-Item Short Form survey (Alonso, Prieto & Anto, 1995), and the pressure platform E.P.S.-R1 of the LORAN-Engineering Company (Italy). All analyzes were carried out using the statistical program SPSS-IBM version 22 for MAC. A descriptive analysis was carried out using measures of central tendency (mean and standard deviation). To check the normality of the sample, the Shapiro-Wilk test was carried out. For the inferential analysis, the Pearson correlation was used.

Results: About cognitive impairment, the results presented positive and significant correlations with the Barthel Index ( $r = -0.272$ ,  $p = 0.047$ ) and with the 12-Item Short Form survey ( $r = -0.389$ ,  $p = 0.004$ ). But no correlation was found for the static balance ( $r = -0.049$ ,  $p = 0.725$ ).

Conclusions: The greater functionality and quality of life in frail women, the lower the cognitive impairment. About static balance, no relation was found with cognitive impairment in frail women.

### **P74: The role of guilt associated with self-perception as a burden on perceived control and depressive and anxious symptomatology**

María del Sequeros Pedroso-Chaparro, Carlos Vara-García, Rosa Romero-Moreno, María Márquez-González, Isabel Cabrera Lafuente, Samara Barrera-Caballero, Laura Gallego-Alberto, José Carlos Antón, Lucía Jiménez-Gonzalo, Andrés Losada Baltar

The perception of oneself as a burden to others has been associated with psychological distress (e.g., depressive and anxious symptomatology). However, the role of guilt associated with self-perception as a burden (GSPB) to others on depressive and anxious symptoms and perceived control has not been analyzed. The main objective of this work is to analyze the role of GSPB, independence and subjective perception of aging on perceived control and depressive and anxious symptoms in a sample of older adults.

Participants were 240 people older than 60 years without cognitive impairments or severe functional dependence (mean age = 73.12 years; SD = 6.06; 69.60% women). A pathway model was proposed with the variables GSPB, independence, age, subjective perception of aging, perceived control and being a woman as predictor variables, and depressive and anxious symptomatology as dependent variables.

The model presented a good fit to the data ( $X^2 = 22.60$ ;  $p = .07$ ;  $X^2/df = 1.61$ ; RMSEA = .051; CFI = .978 and TLI = .956), explaining 30% of the perceived control, 42% of depressive symptomatology and 27% of anxious symptomatology. The results of mediation analyses confirm that perceived control has a full mediating role in the relationship between GSPB and depressive and anxious symptomatology (standardized indirect effect (SIE) = .086;  $p < .01$ ; SE = .028; 95% CI = .038- .146; SIE = .086;  $p < .01$ ; SE = .026; 95% CI = .019- .125, respectively), while a partial mediation effect of perceived control has been found in association between subjective perception of ageing and depressive and anxious symptomatology (SIE = -.143;  $p < .01$ ; SE = .029; 95% CI = -.204 - -.092; SIE = -.088;  $p < .01$ ; SE = .032; 95% CI = -.166 - -.035, respectively).

The results suggest that older people with higher levels of dependence, higher levels of GSPB, worse subjective perception of aging and less control present higher levels of depressive and anxious symptomatology. Therefore, interventions aimed at reducing psychological distress in the elderly should consider these variables.

### **P75: Influence of cognitive impairment on strength levels in functional capacity of frail older adults**

Irimia Mollinedo, Helena Vila, Spuch Carlos, José María Cancela

**Introduction:** The continuous increase in the life expectancy of older adults has generated interest in research into frail-aged people and their physical and mental well-being. Frailty is defined as a state of vulnerability that entails a higher risk of adverse results (Clegg, Young, Iliffe, Rikkert, & Rockwood, 2013). To define a person as frail, they must meet at least three of the following criteria: involuntary weight loss, muscular weakness, slow walking speed, low levels of physical activity, exhaustion and a lack of energy (Fried et al., 2001). Frailty is more prevalent in the elderly and those with multiple medical conditions. Kojima et al. (2016), confirms the predictive role of frailty to develop the future disease, especially the vascular origin more than neurodegenerative. Therefore, the aim of this study is to find out if there is a relationship between cognitive impairment and the strength of the lower limbs in frail people.

**Methodology:** Were recruited for this cross sectional study 77 frail institutionalized older adults (F=54; M=23) de 84,76±7,91 years old, with moderate cognitive impairment (Minimental Test, MMSE 18,18±7,89). The strength of lower limbs was assessed through the Five times to sit stand test (FTSTST) and the Timed up and go test (TUG) with Wiva® sensor, where the parameters of time and average angular speed of stand up and sit down, and the total time of the test.

**Results:** After the statistical analysis of Pearson's correlation, a significant proportional relationship was shown between the degree of cognitive impairment and the time to stand up ( $r = -0.381$ ,  $p = 0.003$ ) as well as the total time ( $r = -0.323$ ,  $p = 0.010$ ). An inversely proportional correlation was also shown between the degree of cognitive impairment and the average angular velocity at standing ( $r = 0.502$ ,  $p = 0.001$ ) and when sitting ( $r = -0.290$ ,  $p = 0.034$ ). For the FTSTST and the sitting time no significant results have been shown.

**Conclusion:** Cognitive impairment in frail people is inversely related to the strength of lower limbs. Therefore, the greater the cognitive impairment, the lower-limbs strength is lower.

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### **P76: Validation of the Chinese version of the Pittsburgh Fatigability Scale for the Elderly**

Chemin Lin, Theresa Gmelin, Nancy Glynn, Yi-Chia Wei, Yao-Liang Chen, Chih-Mao Huang, Yu-Chiau Shyu, Chih-Ken Chen

**Introduction:** The Pittsburgh fatigability Scale (C-PFS) is a self-administered 10-item scale to measure the physical and mental fatigability in the elderly. The aim of the current study is to validate the psychometric properties of the Chinese version of PFS (C-PFS).

**Methods:** We recruited 90 community-dwelling elderly, where 27 were diagnosed of late-life depression (LLD), 23 of mild cognitive impairment (MCI), and 40 of elderly controls. Statistical analysis was done separately for physical and mental C-PFS. Factor analysis was used for reliability, Cronbach's alpha for internal consistency, Pearson's correlation for construct validity, and group comparison for scale scores for discriminative validity.

**Results:** The physical and mental C-PFS showed high reliability ( $\alpha = 0.89$  and  $0.89$ ) and concurrent validity with moderate association with vitality subscale of SF-36. Participants in LLD scored highest in both of the fatigability measurements with 81.5% labelled as fatigue. Factory analysis revealed two factors structure in both scales, with one factor concerning low-intensity or social activity and the other moderate-to high-intensity activity. In convergent validity, physical C-PFS demonstrated higher correlation with activity-orientated scales, while mental C-PFS with scales related to psychological and cognitive function.

**Conclusion:** The results suggest that C-PFS is a valid instrument to assess physical and mental fatigability in the elderly. Psychological and cognitive status should be taken into account when using this instrument.

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### **P77: A serial mediation model from optimism to social support in old age**

Rubio Laura, Dumitrache Cristina G., Buedo-Guirado Cristina

Background: Social relations constitute important correlates for successful ageing and contribute to advantageous profiles that lead to physical and mental health. Thus it is important to understand the variables that influence older people's social relations. This study aims at investigating the indirect effect of optimism on older people's life satisfaction while considering social acceptance and social network size as serial mediators in a group of people age 65 years-old and older from Spain. Method: A cross-sectional survey using non-proportional quota sampling was carried out. The sample comprised 406 community-dwelling older adults ( $M=74.88$ ,  $SD=6.75$ ). In order to collect the data, face-to-face interviews were individually conducted. Serial mediation was performed using bootstrapping analysis to estimating the direct and the indirect effects. Results: Results showed that optimism exerted both a direct ( $B=1.79$ ,  $SE=.41$ ,  $p<.000$ ) and an indirect effect ( $B=.06$ , Bootrapp  $SE=.02$ ,  $p<.000$ ) on social support. The indirect effects from optimism to social support via social acceptance and via size of the social network were both significant. Also the indirect effect of optimism on social support flowing through social acceptance to social network size in serial mediation was significant. Conclusions: Optimistic older adults show social acceptance, holding favorable views of the people they interact with and trust them, and this aspect might allow them wider social networks which in turn contributes to their higher social support. These findings underline the importance of optimism for social resources in old age and give further insight into the direct and indirect relationship between optimism, social acceptance, social network and social support.

### **P78: Age-related changes in performance and brain electrical activity comparing middle-aged and old healthy adults in an old/new word recognition memory task.**

Uxia Ferreiro-Caneiro, Fernando Díaz, Montserrat Zurrón, Santiago Galdo-Álvarez, Mónica Lindín



**Background:** Episodic memory (EM) shows a decline in healthy aging. Event-related brain potentials (ERPs) technique is an optimal tool for studying the time course of brain electrical activity related to cognitive processes. The aim of the present study was to reveal brain electrical activity indexes of age-related cognitive decline in episodic memory.

**Methods:** Brain electrical activity was recorded in two groups of 46 middle-aged adults (mean age: 58.7 years) and 44 elderly adults (mean age: 71.6 years), who did not differ in years of education (11.1 years and 10.4 years, respectively). They made an old/new word recognition memory task with three stimuli blocks, and each block was formed by a study phase and a test phase. In the study phases, participants were instructed to memorize a random sequence of 30 words (old words) and to respond (pressing two different buttons) if each word referred to a living being or not. Immediately after the end of each study phase, test phase began, in which the 30 old words were randomly interspersed with 26/27 new words, and participants were required to respond pressing a different button if the word had been previously presented (old word) or not (new word).

**Results:** Performance (hits and reaction time -RT-) and parameters of the ERP components were measured in response to the old and new words of the three test phases. The ERP components evaluated were: P100 (interval: 75-140 ms) and N170 (interval: 135-230 ms) components, measured at PO7 and PO8 electrode sites, and the N400 component (measured at Fz, F3, F4 in the 270-370 ms interval, and at Cz, C3, C4, Pz, P3 and P4 in the 290-490 ms interval).

**Conclusions:** Compared with the middle-aged group, the older group showed: (1) significantly longer RT and lower percentage of hits; (2) significantly longer N170 latency and (3) significantly smaller N400 amplitude at frontal, central and parietal locations. The results supported an age-related decline in episodic memory, with a decrease in accuracy, slower responses and a reduction of neural resources for evaluation and recognition of old and new words.

### **P79: Coping Strategy and Positive Personality May Relate with Successful Aging: The Arakawa Elderly Studies**

Masaru Mimura, Niimura Hidehito, Kida Hisashi, Shikimoto Ryo, Konishi Mika, Suzuki Kota, Tabuchi Hajime

Based on the Japan Public Health Center-based Prospective Study, we have previously reported that coping strategies during middle age are related with not only future suicide risk but also cancer incidents/mortality and cardiovascular disease incidents/mortality (Svensson et al., 2014, 2015, 2016). In this presentation I will introduce the results of Arakawa Elderly Cohort Studies (Arakawa 65+, 85+ and 95+), focusing on the coping strategies/positive personality traits of the elderly. In Arakawa 65+ Study, 1045 elderly persons aged  $\geq 65$  and  $< 85$  years living in Arakawa ward, Tokyo, completed the surveys and underwent MRI. Approach-oriented coping strategy against stressful events was significantly and positively related to the volumes of the whole hippocampus and subregions including CA1, CA2/3, CA4, and subiculum. Avoidance-oriented coping strategy was significantly and positively related to the volume of the presubiculum and parasubiculum. In Arakawa 95+ Study, 168 oldest-old persons aged  $\geq 95$  answered the questionnaire survey. The results suggested that the formation of self-efficacy, gerotranscendence, and positive personality traits may help prevent frailty and contribute to the acquisition of a high level of well-being among the oldest-old in Japan.

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### **P80: Dementia, depression, diabetes and thyroid disease in a rural elderly patient population**

Mona Benaissa, Geraldine McCarthy, Sonn Patel, Catherine Dolan, Cryan Marguerite, Gannon Aislinn

**Introduction:** As people live longer, the rates of dementia continue to increase. [1] With increased longevity comes increased comorbidity particularly in relation to vascular disease but also endocrine disorders. [2] There has been a large focus on management of vascular risk in relation to harm reduction in dementia. However, endocrine factors have not been addressed to the same extent to date and the under-recognition of their impact on brain health has previously been highlighted. [3-5]

**Objectives:** Our aim was to ascertain the prevalence of major endocrine disease in a patient cohort with a diagnosis of dementia in an active patient case load in a rural acute hospital and community setting. We also aimed to examine the rates of depression in association with endocrine disorder in this patient cohort.

**Methods:** A retrospective case note study was conducted between Jan 2018-July 2019 on active patients attending psychiatry of old age and geriatrics services in northwest Ireland. Data was collected from medical notes, nursing assessments, laboratory and neuroimaging studies. The data on demographics, diagnosis, medical history and psychiatric history was used in the analysis in this study.

**Results:** 246 patients with dementia were included in this study. Of these, 31.3% (n=77) had a comorbid endocrine disorder. Diabetes was the most common endocrine disorder in this patient cohort at 17.5% (n=43) followed by hypothyroidism at 9.4% (n=23). In relation to psychiatric comorbidity, 20.3% (n=50) of the patients with dementia had a diagnosis of depression. In the

patient population with both depression and dementia, the most common association was with diabetes at 18.0% (n=9). Additionally, 12.0% (n=6) of the patients had a diagnosis of hypothyroidism and 6.0% (n=3) had a dual diagnosis of diabetes and hypothyroidism.

Conclusions: Our results suggest that there is a relatively high prevalence of comorbid endocrine disorders and depression in patients with dementia. This study highlights the need for further research into this area and for the recognition of the impact of endocrine disorders on brain health.

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### **P81: Evaluation of Mental and Cognitive Health Screening for Older Adults with Type 2 Diabetes Mellitus Attending a Diabetes Clinic: A Full Audit Cycle**

Rachel Lam, Hannah Marsh, Memoona Younas, Catherine McHugh, Geraldine McCarthy, Catherine Dolan

Introduction: Type 2 diabetes mellitus (T2DM) is a highly prevalent disorder in older people and is associated with increased risk of depression, cognitive impairment and dementia (1) (2). These conditions may affect an individual's ability to successfully manage diabetes and worsen clinical outcomes (3). Annual diabetes review facilitates a holistic assessment of older adults with T2DM.

Aims: Evaluate current assessment practices in older adults with T2DM attending a diabetes clinic in Sligo University Hospital (SUH).

Methodology: Electronic records of patients over 65 attending a diabetes clinic in SUH over three months were audited in 2017 and re-audited in 2019. Screening practices were compared to standards obtained from International Diabetes Federation (2013) (4) and National Institute for Health and Clinical Excellence (2015) (5) guidelines. The proportion of records in compliance with audit standards was calculated.

Interventions after initial audit included education and feedback to diabetes team.

Results: At the initial audit in May 2017, electronic records of 144 attendees (mean age 74.12 years, sd 6.438) were audited. At re-audit in June 2019, 144 attendees (mean age 74.85 years, sd 6.319) records were reviewed.

In 2017, 12% (n=17) had a mood status review compared to only 5% (n= 7) in 2019. Cognitive assessment was recorded in 6% (n= 9) of attendees in 2017 compared to 3% (n= 4) in 2019.

In contrast, blood pressure was screened in 98% (n=141), nephropathy in 96% (n=138) and lipid profile in 83% (n=119) in 2017 and in 98%, 99% and 93% respectively in 2019.

Conclusion: Audit results highlight a lack of integration of mental and cognitive health screening of older adults into the annual diabetic review. Ongoing education of diabetes healthcare staff is needed. Findings contributed to the successful application for a European INTERREG funded cross-border multimodal lifestyle intervention for dementia prevention in older adults with T2DM.

In collaboration with diabetes team, suggested improvements to future care include: providing a pro forma of the depression screening tool- PHQ at each consultation, including the results of PHQ in the free text of Prowellness software, developing a protocol for intervention and doing a re-audit to improve quality of care.

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### **P83: Antipsychotic drug use in nursing homes: Co-occurrence of resident and non-resident-related factors in those with impaired cognition**

Ana Rita Ferreira, Mário R. Simões, Joana Guedes, Lia Fernandes

**Background:** Neuropsychiatric symptoms (NPS) are highly frequent in nursing homes (NH). These are burdensome for staff and residents, being frequently treated with antipsychotics (AP) despite their associated severe side-effects and regardless guidelines' recommendations. Non-resident-related factors are increasingly acknowledged as potential correlates of higher AP prescription, suggesting that AP use is not only based on clinical indications, but may also reflect environmental factors, higher staff distress and burden. We aimed to determine rates of AP use in NH residents with mild to moderate cognitive impairment, and to explore factors associated with this use.

**Methods:** A cross-sectional analysis was conducted. Residents  $\geq 65$  years and scoring for mild to moderate cognitive impairment were included. Those scoring for questionable impairment or with a major psychiatric diagnosis (including schizophrenia) were excluded. Mini-Mental State Examination-MMSE was used to ascertain the level of cognitive impairment. The Neuropsychiatric Inventory-NPI-12 was used to assess NPS, and the NPI-Caregiver Distress Scale-NPI-D to evaluate the overall NPS impact. Data on AP was collected from medical records using the ATC classification. After the dichotomous categorization of AP use (present vs. absent), a logistic regression analysis was conducted with resident factors (age, sex, NPI domains Delusions, Hallucinations, Agitation/Aggression and Irritability/Lability) and non-resident-related factors (NPI-D) as covariates.

**Results:** Participants were 109 residents, mainly women (81.7%) with an average of 84.6 (sd=7.2) years. From these, 40.4% presented mild cognitive impairment, while 59.6% scored for moderate impairment. A total of 19.3% were prescribed with any AP. In multivariate analysis, AP presence was associated with residents' age (OR=0.898; 95%CI: 0.817-0.927), delusions (OR=5.902; 95%CI: 1.370-25.432) and staff distress (OR=1.204; 95%CI: 1.020-1.421).

**Discussion and Conclusion:** AP use was predicted by the presence of delusions, but was also independently associated with lower residents' age and higher staff distress. The latter remains significant, even after adjusting for residents' characteristics and potential AP clinical indications. These results are in accordance with previous studies and point out that AP use appears to be associated with non-resident factors, particularly staff-related, which could be targeted to optimize AP use.

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#### **P84: Antipsychotic Prescribing in Dementia - A review of antipsychotic prescribing in individuals with dementia in a Psychiatry of Old Age Service in Sligo, Ireland**

**Background:** The majority of people with dementia will develop one or more behavioural or psychological symptoms of dementia as the illness progresses. Treating these non-cognitive symptoms of dementia is a challenge, particularly in diverse residential environments. Up to one third of people with dementia are prescribed an antipsychotic medication. However, the risks and limited benefits of their use are well recognised, prompting the introduction of national guidelines in Ireland to recommend prudent prescribing and close monitoring of the use of antipsychotic medications.

**Aims and Methods:** We developed an audit tool to assess the frequency and appropriateness of prescribing of antipsychotic medication in older adults with BPSD referred to Psychiatry of Old Age, Sligo/Leitrim Mental Health Service by comparing with best practice guidelines.

Clinical records for all patients actively under the care of our team in March 2019 with a diagnosis of BPSD were audited using this tool. We wished to address any identified deficits via quality improvement initiatives within our department.

**Results:** Forty-nine patients with BPSD were attending the service in this time period. 58% (n=29) of this cohort were prescribed an antipsychotic, most commonly quetiapine.

Exploration of non-pharmacological management of BPSD, documentation of discussion of risks of risks of AP medication (metabolic, cardiovascular, falls, sedation, extrapyramidal) were all achieved in less than 50% of cases.

By location of treatment- those in acute hospital care were most frequently prescribed antipsychotics (100%), followed by nursing home care (80%) with those living at home prescribed the least (50%).

**Conclusion:** Despite increased attention regarding the limited benefits of antipsychotic medication in managing challenging behaviour in BPSD, their use remains widespread. Furthermore there is insufficient evidence of review of their use following initiation. Prescribers should first consider alternative management strategies for BPSD and familiarize themselves with current guidelines regarding appropriate monitoring once prescribed.

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## **P85: CARE HOME EDUCATION AND SUPPORT TEAM - CHEST Providing input to care homes for patients with Behavioral and Psychological Symptoms of Dementia or BPSD**

Angela Ambrose

### INTRODUCTION

This poster details the outcomes following a 6 month review point of the community Care Homes project looking to provide support for people with BPSD. Referrals received for patients with BPSD residing in Care Homes equated to 30% of total referrals received by the Community Mental Health Team in the Torquay area. We looked at 239 referrals received in the 6 month period

### AIMS

To provide specialist support to people with BPSD in care homes whilst managing financial pressures, to develop assessment and treatment pathways that are clinically effective around early intervention and formulation of BPSD in the community.

To achieve a reduction in the frequency of staff visits as well as minimize pharmacological input via adoption of a more holistic approach leading to a reduction in medication use.

We also aim to educate care home employees around the non-pharmacological management of BPSD and the many issues experienced by patients with BPSD that they are unable to communicate.

We look at pain management, life history and interests to combat boredom, physical health issues and review their prescribed medication along with General Practitioners (GPs). We also work alongside Social workers in order to reduce admissions to hospital and to reduce avoidable transitions into alternative care settings.

### CONCLUSIONS

No financial investment was needed as all resources were drawn from the existing Older People's Mental Health Staffing, 6.6% of all cases required consultant input beyond the 2 hour weekly MDT attendance.

20.5% of cases were re-referred to the team. 2 patients were admitted to hospital and 5 patients were transferred to another facility.

The use of medication was reduced with medication only being prescribed for 20% of the patients.

Feedback from the care homes was favorable with regards to the teaching input and recommendations made by the team, 50% of patients with BPSD were found to not have had adequate pain relief. Most pain relief was given on an as required basis.

When pain assessments were done regularly and GPs involved in prescribing analgesia, a marked improvement was seen when patients were given pain relief regularly.

## **P86: Clozapine: A last resort for Behavioral and Psychological Symptoms of Dementia? A Casereport and review of literature**

Maren van Waalwijk, Raphaël Schülte, Roland Wetzels

Behavioral and Psychological Symptoms (BPSD) are common in dementia and contribute significantly to caregiver burden and institutionalisation of the patient. Unfortunately pharmacological and non-pharmacological interventions are sometimes ineffective. In this casereport we present a patient with seriously disturbed behavior in which current guideline interventions failed. Clozapine was started as a 'last resort' with excellent results. Cessation of Clozapine repeatedly led to reemerging symptoms and restoration of the proper dose to the previous improved state.

Our case is in accordance with the literature on clozapine treatment in NPS: case series show improvement in the majority of patients, who often suffer from therapy refractory symptoms.

We conclude that clozapine may be considered for patients with therapy refractory disruptive or otherwise serious BPSD.

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### **P87: Development of a Thai Tool for Assessing Behavioral and Psychological Symptoms of Dementia (BPSD-T)**

Harisd Phannarus, Pitiporn Siritipakorn, Sudarat Pianchob, Weerasak Muangpaisan

**Objectives:** Early recognition and management of BPSD are critical; however, it is commonly under-recognized. Caregivers from different society reported different perception of most burdensome symptoms. Existing BPSD screening tools are translated from western tools and need time and skill of assessors which make systematically screening for BPSD in routine clinical practice rarely performed. We aimed to develop a new tool suitable for Thai context used by non-physician healthcare personnel and need shorter time to administer.

**Methods:** A new 18-item BPSD score for dementia (BPSD-T) was developed based on the clinical surveys from Thai caregivers and the adaptation was performed after a pilot study in 20 subjects. Content validity, construct validity, inter-rater/test-retest reliability were analyzed. We recruited caregivers by block design method. Demographic data, the Neuropsychiatric Inventory (NPI), BPSD-T, Thai Mental State Examination (TMSE), Clinical Dementia Rating scale (CDR) and Barthel Index were collected. BPSD-T score were compared to the Neuropsychiatric Inventory (NPI) which is a standard assessment of BPSD.

**Results:** 168 people with dementia (mean age 80.7±6.7 years, TMSE 17.4±6.5) and their main caregivers were recruited. The principal diagnosis were Alzheimer's disease (AD) 62.5%, AD with stroke 18.5%, and VaD 13.7%. Global CDR was 0.5-1 in 73.8%, and 2-3 in 26.2%. BPSD-T had acceptable construct validity (CVI between 0.6-1) and high inter-rater and test-retest reliability. Total score and caregiver distress score correlated well with NPI ( $r = 0.7$ ,  $p < 0.001$  and  $r = 0.74$ ,  $p < 0.001$ , respectively). BPSD-T took a shorter time (230.9±65.5 s) than NPI (506±196.9 s) ( $p < 0.001$ ) to complete.

**Conclusion:** BPSD-T is a quick, reliable and valid test to evaluate BPSD from all dementia subtypes and severity with a good correlation to NPI. It might be used in routine clinical practice for early recognition and intervention of the BPSD to improve quality of care and reduce caregiver burden.

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**P88: Mirth after tempest. A case report on late onset mania-like symptoms in a patient with frontotemporal dementia.**

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**BACKGROUND:**

Frontotemporal Dementia (FTD), also called Pick's Disease, is a type of dementia which is often characterized by behavioral and personality changes, language difficulties and executive control and motor symptoms with relative preservation of other cognitive areas. There are different subtypes including a behavioral variant, a nonfluent/agrammatic variant primary progressive aphasia and a semantic variant.

**DESCRIPTION OF OBJECTIVES:**

Our aim is to report a case of frontotemporal dementia with behavioral disturbances that include mania-like symptoms and discuss the differential diagnosis in which psychiatric symptomatology may overlap.

**METHODS AND MATERIALS:**

A literature and electronic review has been done on mania-like symptomatology of late onset, frontotemporal dementia and its differential diagnosis based on a case report of a 78 year-old male with alcohol use disorder and cardiovascular risk factors who was admitted to the hospital due to a manifold picture with important behavioral disturbances that started a week before. A concomitant acute kidney failure was found in the laboratory tests. Chest radiographs, a chest radiograph, a cerebral CT scan and cognitive and neuropsychological tests were also performed. After the kidney failure resolution the maniac symptomatology persisted for several weeks. Differential diagnosis was made between frontotemporal and vascular dementia, brain injury, acute confusional state and other psychiatric diseases including late onset bipolar disorder and late onset schizophrenia-like psychosis.

**RESULTS AND CONCLUSIONS:**

The patient was diagnosed of Major Neurocognitive Disorder due to Multiple Etiologies, preeminantly Frontotemporal lobar degeneration but also vascular disease and alcohol use with behavioral disturbances (psychotic symptoms and excessive jocularity). He was treated with risperidone solution 0.5 ml (1-1-1 plus 1/2), quetiapine 100mg (0-0-1/2) when insomnia and

citicoline 1000mg (1-0-0) until the behavioral symptoms were mild. At discharge the patient returned to the residential home where he was adequately supervised.

The initial clinical presentation of FTD mimics other psychiatric symptoms, which challenges a correct differential diagnosis and thus leads to highly risk of misdiagnosis and delay in an adequate management of these patients. An interdisciplinary clinical evaluation may be useful for the differential diagnosis.

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### **P89: Sleep problems and mild behavioral impairment among the middle to old age people**

Cheng-Sheng Chen

**Backgrounds:** Mild behavioral impairment (MBI) has been considered as a pre-dementia state. Aspects of MBI include decreased motivation, affective dysregulation, impulse dyscontrol, social inappropriateness, and abnormal perception or thought content. Sleep problems are various and common in the elderly. Part of sleep problems, such as REM sleep behavioral disorders (RBD), is prodromal or early symptoms in the development of neurodegenerative disorder. The association between these MBI and sleep problems has not been investigated.

**Methods:** Middle-to-late aged subjects from the community were invited. Neuropsychiatric Inventory Questionnaire (NPI-Q), REM sleep behavior disorder screening questionnaire (RBDSQ), and MBI checklist (MBI-C) were used to assess sleep problems, RBD and MBI.

**Results:** In total, 182 subjects with mean age of 66.2 (7.3) years and 40.1% male were enrolled. 29.4% of them had sleep problems, whereas 13.2% were RBD positive. Correlations by adjusting for age and sex between sleep problems, RBD and MBI-C were total score of MBI (sleep:  $r=0.22$ ,  $p=0.005$ ; RBD:  $r=0.27$ ,  $p<0.001$ ), MBI-decreased motivation (sleep:  $r=0.07$ ,  $p=0.38$ ; RBD:  $r=0.14$ ,  $p=0.082$ ), MBI-affective dysregulation (sleep:  $r=0.18$ ,  $p=0.023$ ; RBD:  $r=0.24$ ,  $p=0.002$ ), MBI-impulse dyscontrol (sleep:  $r=0.25$ ,  $p<0.001$ ; RBD:  $r=0.28$ ,  $p<0.001$ ), MBI-social inappropriateness (sleep:  $r=0.20$ ,  $p=0.008$ ; RBD:  $r=0.12$ ,  $p=0.13$ ), and MBI-abnormal perception or thought content (sleep:  $r=0.17$ ,  $p=0.026$ ; RBD:  $r=0.12$ ,  $p=0.13$ ).

**Conclusions**

Findings from this study suggest that MBI is associated with sleep problems, including RBD. Correlation of RBD with specific domains of MBI, affective dysregulation and impulse dyscontrol, suggests RBD and MBI may share common pre-dementia pathology.

### **P90: The use of soundscapes to reduce Behavioral and Psychological Symptoms of Dementia in People with Dementia: a co-creation study within an ethnographic design in five nursing homes in Flanders, Belgium**

Patricia De Vriendt, Tara Vander Mynsbrugge, Francesco Aletta, Dick Botteldooren, Paul Devos, Dominique Van de Velde

**Introduction**

Soundscapes – defined as an environment of sound (or sonic environment) with emphasis on the way it is perceived and understood by the individual, or by a society - influences positively behavior and Quality of Life (QoL) of humans, as has been suggested by numerous studies. This might also be the case for people with dementia (PwD) and it can be expected that soundscapes probably are useful when dealing with Behavioral and Psychological Symptoms of Dementia (BPSD).

**Objectives**

The aim of this study was to (1) develop soundscapes and (2) explore the impact on PwD and their BPSD and QoL.

**Method**

Based on a series of three co-creation sessions with a heterogeneous group of stakeholders (residents without dementia, family, bedside healthcare professionals and managers) ( $n=37$ ) in five nursing homes (NH), a concept of soundscape design was developed and a variety of sounds was collected. Finally the soundscapes were tested in an iterative process of three phases with – in total - 15 residents with dementia. The testing phase itself was based on an ethnographic design employing

24/7 participatory observations (PO) in the five NHs. Data-analysis was characterized by an iterative process and a constant comparison. Peer-debriefing with professional caregivers ensured the credibility.

#### Results

The influence of soundscapes on the BPSD and QoL of PwD was subject to two dimensions: the choice of the sounds and the timeframe they were displayed. Globally it was observed that sounds of nature were positively impacting behavior of the PwD, while human and technical sounds did not. The sound of a bell was an exception since this worked orientated. Concerning the timeframe, it was observed that the more the soundscape followed a 'normal day', the more positively it impacted the PwD.

#### Conclusions

The results showed that there was a clear effect of the soundscape being (1) safety enhancing, (2) activating or the opposite (3) relaxing provided that the soundscapes were individualized and adapted to the preferences of the PwD. However, these findings mostly relied on subjective evaluation during the PO, therefore further research is needed on larger scale with more objective measures to evidence the usefulness of soundscapes in PwD.

### **P91: Unmet needs behaviour of residents with dementia: analysis of unmet needs by multidisciplinary expert team**

Ulla Eloniemi-Sulkava, Terhi Pesonen, Raimo Sulkava, Juhani Koskinen, Niina Savikko, Bob Woods

Persons living with dementia often exhibit inappropriate behaviours that are addressed as behavioural and psychological symptoms of dementia (BPSD) or challenging behaviours. These behaviours increase residents' suffering and decline their quality of life. The Unmet Needs Model provides person-centred and holistic treatment approach.

Objective: To analyse potential unmet needs of those residents (1) who exhibited inappropriate behaviours and (2) with whom nursing staff needed solution-focused coaching from multidisciplinary expert team. Residents belonged to the intervention group of randomized controlled trial (RTC) that aimed to support staff to meet residents' holistic needs and improve their quality of life.

Data: There were total of 115 residents with dementia in the intervention group, 80% (n=92) exhibiting BPSD based on NPI-NH scale. Nursing staff needed extra support with 58 residents (63%). Multidisciplinary expert team in collaboration with residents, family members and nursing staff analysed potential unmet needs of 58 residents. Analyses were based on comprehensive information from each resident: diagnosis of disease causing dementia, medical status and medication, follow-up measurements of the study, cognitive capacity and life history, as well as on process analyses during the episode of an inappropriate behaviour.

Results: Of 58 residents, 57 % were female, 84 % had at least moderate stage of dementia and had mean of 6, 03 unmet needs (range 1-15). Percentages of unmet needs' categories were (1) physical well-being (85 %), (2) psychosocial support in nursing interactions (55 %), (3) support with cognitive difficulties (45 %), (4) psychosocial support in relation to life history (30 %) and (5) to personality (30 %), (6) needs relating to social contact and meaningful activities (33%), and (7) support to cope with environment (20 %).

Conclusion: There are various treatment and care opportunities when Unmet Needs Model is disseminated.

### **P92: A comparison of executive function between elderly people in institutionalisation and day-care or home-care systems.**

Marlene Rosa, Daniana Dores, Miguel Pires, Maria João Canaverde, Natália Martins, Joaquim Guardado, Teresa Rodrigues, Janine Henriques, Ana Carvalho

Introduction: Expenditures associated with long-term care are very expressive in Europe and tends to increase because of the population ageing (1). There are different perspectives about the main factors that contribute to long term institutionalisation in elderly (2) (3). Specifically, the cognitive decline associated to frontal lobes (which means, the executive function (EF)), is a point of interest in research about long term care needs. Therefore, studies exploring the most affected dimensions of the EF in institutionalized elderly (4) are recommended.

Aim: To compare the performance in executive functions of elderly people in institutionalised versus day-care or home-care systems.

Methods: An exploratory descriptive study was conducted in four senior residences of Portugal Centre region. Elderly people were included if: (i) they had at least 60 years old and (ii) were not bedridden elderly. The Frontal Assessment Battery (FAB) was implemented, which consists of six subset test items: conceptualisation (EF1 - abstract reasoning), item flexibility (EF2 - verbal fluency), motor programming (EF3 - organisation, maintenance and execution of successive actions), sensitivity to interference (EF4 - conflicting instructions), inhibitory control (EF5 - inhibit inappropriate responses), and environmental autonomy (EF6 - prehension behaviour) (5). T-tests for independent samples were performed to characterise differences in the EF between elderly in day-care and in home-care systems ( $p < 0.05$ ).

Results: Hundred and four elderly (mean age  $78.58 \pm 10.30$  years; 37 males; 34 married) participated in this study. Forty-three elderly were in day-care/home-care systems and sixty-one were inpatients. Non-statistically significant differences were found



( $p > 0.05$ ), but higher EF performance was detected for elderly in day-care/home-care system, highlighting the following outcomes: EF2 – 0.77 vs 0.57; EF3 – 2.05 vs 1.82; EF4 – 1.60 vs 1.46.

As a conclusion, further studies should be developed to understand the role of (i) verbal fluency, (ii) motor programming and (iii) conflicting instructions in elderly institutionalisation.

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#### **P93: Anxiety but not depression contributes to blood pressure levels in caregivers of a parent with dementia**

Carlos Vara-García, Rosa Romero-Moreno, Samara Barrera-Caballero, María del Sequeros Pedroso-Chaparro, Isabel Cabrera, Laura Gallego-Alberto, María Márquez-González, Andrés Losada

**Objective:** Caregiving for a relative with dementia has been associated with negative consequences for physical and mental health, which are highly interconnected. For example, higher levels of depression have been linked with higher cardiovascular risk, including higher levels of blood pressure. Studies analyzing this association have been conducted commonly with spousal caregivers, but not so often with offspring caregivers. In addition, studies analyzing the association between anxiety and cardiovascular risk are scarce in caregiver samples. The objective of this study is to analyze whether kinship may play a role in the association between emotional distress and blood pressure.

**Methods:** Participants were 276 caregivers caring for a spouse or a parent with dementia. Face-to-face interviews were carried out measuring sociodemographic variables and anxious and depressive symptomatology. In addition, three measures of blood pressure were taken during the interview, allowing the calculation of a Mean Arterial Pressure (MAP) score. Caregivers were split into two groups: spousal caregivers ( $n = 117$ , 42.55%), and child caregivers ( $n = 159$ ; 57.82%). Then, regression analyses were conducted for MAP in each group after controlling age, gender, body mass index, use of antihypertensive medication, distress associated to behavioral and psychological symptoms of dementia as covariates, and anxiety and depression as main predictors.

**Results:** A significant and positive effect was found for anxiety over MAP for child caregivers ( $\beta = .203$ ,  $p < .05$ ). No significant effect was found in this group for depression. The final model explained a 35.56% of the variance. Neither anxiety nor depression was significant predictors for MAP in the spousal caregiver group.

**Conclusion:** This study suggests the importance of considering anxious symptomatology in the prediction of cardiovascular risk in daughter caregivers. Considering that child caregiver is one common profile of caregivers, the results of this study highlight the need for a better understanding of the sources of anxious symptoms in the caregiving process, something that could also contribute to the development of efficacious interventions for reducing caregivers' levels of anxiety.

#### **P94: Burden and psychological distress of family caregivers of people with dementia recently admitted in long-term institutional care: Preliminary results of a longitudinal study in Portugal**

Sonia Ferrao, Adriana Henriques

**Introduction:** Nursing home placement doesn't end caregiving by family caregivers to their relative with dementia, as they may remain involved in regular visits, ongoing provision of direct care, and interaction with staff. Although some caregivers experience less burden and depressive symptoms after nursing home placement, others continue to experience distress through the transition period.

**Objectives:** explore some preliminary results regarding psychological distress and burden experienced by family caregivers of people with dementia recently admitted in long-term institutional care.

**Methods:** This study is part of a larger ongoing mixed-method longitudinal observational study that includes replication of WP3 of RightTimePlaceCare Project in Portuguese context. Participants are family caregivers of people with dementia recently admitted to long-term care (within one to three months after admission). Data were collected during face-to-face interviews at baseline and follow up three months later. Outcomes measures for informal caregivers included health-related quality of life (EQ-5D-3L); caregiver burden (ZBI); psychological well-being (GHQ-12); positive and negative consequences of caregiving (CRA); experiences on quality of care (9 items from CLINT).



Results: Caregivers (n=55) were mostly women (80, 0%), aged between 31 and 89 years (mean 58, 8), the majority were children of the person with dementia (70, 9%) followed by spouses (14, 6%). 45 participants completed follow up. About one-third of participants visited the person with dementia daily at baseline and follow up, and more than half reported spending time as informal caregiver in the nursing home where their relative lived. Despite individual variations, overall, caregiver burden and psychological distress decreased between baseline and follow up assessment. Nevertheless, more than one-third of participants reported consumption of at least one type of anxiolytic, antidepressant, or hypnotic and sedative medication at baseline and follow up, and about half of participants reported feeling moderate or extremely anxious or depressed at baseline and follow up assessment.

Conclusions: Despite the overall decrease of psychological distress and caregiver burden, family caregivers may benefit from proactive tailored support interventions during the admission process to ease the transition from home to long-term care.

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### **P95: Comorbid depressive and anxious symptomatology in dementia family caregivers. Relationship with gender and disruptive behaviors**

Andrés Losada-Baltar, Ana Pérez-Miguel, Samara Barrera-Caballero, María del Sequeros Pedroso-Chaparro, Carlos Vara-García, Laura Gallego-Alberto, Rosa Romero-Moreno, José Fernandes-Pires, Javier Olazarán, María Márquez-González

The comorbid presentation of anxious and depressive symptoms has been associated with worse health outcomes in several population groups. However, research on comorbid anxious and depressive symptomatology in dementia family caregivers is almost lacking.

Participants were 884 dementia family caregivers (74.5% female) with a mean age of 61.1 years (SD = 13.4). Face-to-face interviews were carried out measuring frequency and stress derived from disruptive behaviors of person with dementia (RMBPC) and depressive (CESD) and anxious (POMS) symptomatology in the caregiver. Cut-off scores for the CESD and the POMS scales were used to classify participants in the following groups: No distress (n = 231; 26.1%), anxious (n = 153; 17.3%), depressive (n = 64; 7.2%), and comorbid (436; 49.3%).

There were gender differences between groups. Female caregivers were classified more than men in the comorbid group, while male caregivers were classified more than female caregivers in the no distress group ( $\chi^2 = 60.52$ ;  $p < .001$ ). No gender differences were observed for the anxious and depressive groups. Female caregivers reported a higher frequency ( $t = 4.48$ ;  $p < .001$ ) and reaction ( $t = 5.40$ ;  $p < .001$ ) to disruptive behaviors than male caregivers. In female caregivers the comorbid group reported significantly higher scores in frequency and reaction compared to all the other groups, and the anxious group reported significantly more frequency and reaction compared to the no distress group ( $F = 12.50$ ;  $p < .001$ , and  $F = 17.13$ ;  $p < .001$ , respectively). In male caregivers, the comorbid group reported more frequency of disruptive behaviors than the no distress group ( $F = 3.76$ ;  $p < .05$ ) and more reaction than all the other groups ( $F = 6.91$ ;  $p < .001$ ).

The findings from this study suggest that a significant percentage of caregivers suffer simultaneously significant levels of depressive and anxious symptomatology. Comorbidity is associated with a higher report of frequency and reaction to disruptive behaviors for female and male caregivers. Female caregivers seem to be in a more vulnerable situation in terms of exposure to stressors and burden that seems to be associated with a higher risk of reporting anxious and comorbid symptoms.

### **P97: Effects of caregiver gender and use of home-care service on circulating biomarkers of an increased cardiovascular risk: baseline results of the Caregiving Spanish Longitudinal Study (CUIDA-LONG)**

Rosa Romero-Moreno, Carlos Vara-García, Javier Olazarán, Roland von Kanel, Brent Mausbach, Samara Barrera-Caballero, María del Sequeros Pedroso-Chaparro, Eloisa Navarro, Jesús Lopez Arrieta, Andrés Losada

Caring for a relative with dementia is a chronic stressful situation that has negative consequences on caregivers' cardiovascular health. The proinflammatory cytokine interleukin (IL)-6 and C-reactive protein (CRP) are established biomarkers of cardiovascular disease (CVD) risk. This study aimed to examine the effects of gender and utilization of home-care service on blood concentrations of IL-6 and CRP.

Participants were 91 family dementia caregivers (mean age [SD] 59.7 [12.5] years, 67 % female, 51.6 % using home care service). Blood samples were analyzed for IL-6 and CRP. Four groups were created using the baseline preliminary data of the CUIDA-LONG study, according to caregiver gender and use (HCS+) or not (HCS-) of home care service: female HCS+ (33

%), female HCS- (34.1 %), male HCS+ (; 18.7 %) and male HCS- ( 14.3 %). Differences between groups in IL-6, CRP, and established risk factors for CVD (demographic characteristics, health behaviors and caregiving-related stressors) were tested using ANOVA.

Female HCS- had higher levels of circulating CRP than the other three groups ( $F = 4.17, p < .01$ ). No significant differences in CRP emerged between the other three groups. Female HCS- had higher levels of IL-6 than female and male HCS+ ( $F = 3.85, p < .05$ ). There were no differences in IL-6 levels between female and male HCS-. There were no significant differences between groups for caregiving-related stressors (frequency and reaction of behavioral problems and duration of caregiving,). Female HCS- reported more daily hours caring than female HCS+ ( $F = 6.94, p < .01$ ), did more physical exercise than male HCS- ( $F = 4.04, p < .01$ ) and presented more frequency of leisure activities than male HCS+ ( $F = 3.308, p < .05$ ). Female HCS+ had lower BMI than the other three groups ( $F = 7.75, p < .01$ )

The results of this study demonstrate that female HCS- have elevated levels of circulating IL-6 and CRP, so this could constitute a caregiving risk profile for CVD. These findings suggest that considering caregiver's gender in combination with the use of home-care service may help to predict and explain caregiving effects on cardiovascular risk.

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### **P98: Enhancing Health Knowledge and Health Practice of family caregivers in care of care recipients with Cognitive Impairment in Hong Kong**

Gemma K C Law

Studies revealed that physical activity and nutritional diets have improved the cognitive performance and mobility in people with dementia (Bherer et al, 2013; Falck et al., 2017; Hoffman et al., 2016; Lee & Park, 2016)

The health project was aimed to enhance health knowledge and health practice of family caregivers in care of their care recipients in cognitive impairment.

Objectives

1. To compare the means differences of BMI and level of physical activity between pre-and post-intervention;
2. To identify the changes on health knowledge and health practice of family caregivers
3. To evaluate the effectiveness of the intervention to the target groups

Design: A pre-and post-intervention with face to face interview for data collection

Target Population: The subjects were recruited via open recruitment. 100 families were recruited. The intervention pack was comprised of health education, nutritional advice, daily log, guided exercises and daily walking.

Measurement scales: The measurement scales included mini-nutritional assessment (Chinese version), International Physical Activity Questionnaire (IPAQ) (Chinese version) and Abbreviated Mental Test (Chinese version) for assessing the elderly with cognitive impairment. Data on BMI, ADL and IADL and Caregiving burden was collected too. Focus group interviews were conducted for collecting comments towards the health project from family caregivers.

Results: The findings showed improvement on BMI, level of physical activity and gait & balance of the elderly subjects after the intervention. Change of health practices are identified such as health knowledge, change of care practice, health maintenance, choices of food and physical activity.

Conclusion: Family caregivers admitted that they were often pre-occupied with memory loss, deficits in self-care; and challenging behavior when caring for their members with cognitive impairment at home. They did not realize the importance to maintain the health state and physical activity of their care recipients. The project is thus able to induce the changes on their health knowledge and health practice of family caregivers.

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### **P99: Hearing Dementia Carers' Voice**

Oriol Turró-Garriga, Maria del Mar Fernández-Adarve, Pilar Monreal-Bosch

**OBJECTIVE:** The aim of this study was to give the voice to carers of persons with dementia (PWD) in order to identify the main needs that they feel about health and social care systems attention.

**METHODS:** Qualitative study based on focus group methodology. All groups followed the same structure. Three different investigators analysed and coded the transcription text, triangulated the results and identified main categories.

**RESULTS:** Twenty-five family carers participated (mainly spouse and adult-child). Differences in severity of dementia, cohabitation, or kind of living area (urban or rural) were sought in the recruitment, also equitation in gender representation. Carers expressed two different categories of unmet needs: a) Related with health and social care system b) related with personal ability to cope with caring situation.

Carers did not perceive the Administration as dementia friendly and many participants defined it as rigid and non-person-centred. However, they focused their attention in memory clinic service and the relationship with social care service. The main participant's contribution in that point was the perception of a lack of a referent. A person who accompanies them throughout the process. They understood that their situation was chronic and medicine cannot resolve it actually now. For that reason they express great gratitude when some member staff, individually, has developed this function as referent contact independently of their specialty (primary care member, psychologist, social worker or nurse).

Secondly, carers expressed the volunteer of be empowered. They do the greatest part of caring and they do not want to change that but, they need some cognitive and emotional tools to cope with it. Understanding dementia and its variability (usually daily), managing behaviour disturbances, knowing some key tips of nursing assistance, etc. were the most repeatedly comments through the groups.

**CONCLUSIONS:** Although dementia is usually seen as a medical process, carers defined it as social challenge that implies many actors. Attending carers as part of dementia health caring by administration and including their point of view could improve their quality of life while reduce collateral costs.

### **P100: Humor as a coping strategy to care people living with dementia**

Maria del Mar Fernández-Adarve, Oriol Turró-Garriga, Pilar Monreal-Bosch

**OBJECTIVE:** The aim of this study was to describe and analyze spontaneous contributions of family caregivers of persons living with dementia related to the use of humor in their daily interactions. These expressions were extracted from the main study aimed at identifying health and social assistance needs.

**METHODS:** Qualitative study based on focus group methodology. All groups followed the same structure. Three different investigators analysed and coded the transcription text, triangulated the results and identified main categories.

**RESULTS:** Twenty-five family carers participated (mainly spouse and adult-child). Differences in severity of dementia, cohabitation, or kind of living area (urban or rural) were sought in the recruitment, also equitation in gender representation. The narrative discourse of several participants showed spontaneous expressions about the importance of humor as a coping resource, a form of communication with the person they care for, a method to resolve the resistance of the person with dementia during the bath or simply for fun.

One participant shared an anecdote in which it was not him but his mother, whom he cares for, who made use of irony spontaneously.

Just sharing the story of these experiences during the development of focus groups served to provoke joy, laughter and hilarity among the participants, as we think that happens every day between caregivers and their affected relatives. It is important to note that although it has not been the objective of this qualitative study, these moments of relaxation alleviated the emotional tension experienced during the development of this focus groups given the high prevalence of negative emotions expressed by participants.

**CONCLUSIONS:** Perhaps the time has come for people living with dementia and their caregivers to become aware of the importance of humor as a way to face dementia, and secondarily, the fact of actively stimulate humor as a form of communication results in an improvement of the quality of life of both the person with dementia, and that of their caregivers.

### **P102: Pattern of care and impact on family caregivers of people with dementia from a nursing care model perspective.**

Raquel Rodríguez-González, Alba-Elena Martínez-Santos, David Facal, Javier Hermida-Porto, Carlos Rodríguez-Abad, Manuel Gandoy-Crego

**Objectives:** To identify the interrelation between the pattern of care provided by family caregivers of people with dementia and the impact on their health, as well as associations of both with sociodemographics.

**Design:** Cross-sectional descriptive multi-institutional study.

Participants: 211 family caregivers of individuals with dementia in Galicia, NW of Spain. Mean age was 59 years (95% CI 57.256-60.785), range 22-88 years, 73.5% women, 76.3% married, who are part of 5 associations of families of patients with dementia.

Measurements: Sociodemographic data of the carer and the patient and the validated questionnaire ICUB97 (Fuentelsaz-Gallego et al., 2001) to describe the care provided to dependents (48 items/dispensed care) and the impact on caregiver health (46 items/health problems) according to the Nursing Care Model of Virginia Henderson, based on 14 basic human needs.

Results: Care was provided in 23.79 +/- 8.32 items (of a total of 48). The impact on caregiver health was scored 13.26 +/- 7.34 items (of a total of 46), and a significant correlation was found between care and health ( $p = 0.000$ ). The profile of the caregiver with more care-related health problems was a woman ( $p=0.046$ ) caring for a man ( $p=0.004$ ). There were no statistically significant associations, although trends are observed, for living in rural areas ( $p=0.076$ ) and have been caring for 5-10 years ( $p=0.080$ ). The most frequent care was found in the activities that satisfy needs of nutrition (86.7% -item 5-), hygiene (84.4% -item 24-) and movement (83.4% -item 13-), while the needs of the most affected caregivers corresponded to recreation (73.5% -item 43- and 64% -item 44-) and rest and sleep (58.8% -item 17-).

Conclusions: The pattern of care provided by family caregivers of patients with dementia is associated with consequences on their health according to the nursing model of Virginia Henderson. Factorial approaches with bigger sample sizes will help to confirm these results. Nurses-led evidence-based interventions should be promoted, focusing on the most vulnerable family caregivers. It is necessary to investigate the development of strategies that improve the biopsychosocial health of these caregivers.

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### **P103: Predictors of Caregiver burden in caregivers of demented patients: A National Dementia Registry Study in Taiwan**

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Objective: In Taiwan, the distress and burden of taking care of dementia patient has become a crucial problem for both the clinicians and caregivers. We aimed to find out the relationship between each potential predictors and caregiver burden.

Methods: A total of 1,219 dementia patient-caregiver dyads from 8 general hospital in Taiwan were recruited in this study. Caregivers were administered the Zarit Burden Interview (ZBI) to measure the caregiver burden. ZBI scores equal or greater than 30 was defined as high caregiver group, otherwise, ZBI scores lesser than 30 was defined as the low caregiver burden group. The severity of dementia was assessed by the Clinical Dementia Rating Scale (CDR). Geriatric Depression Scale was used to measure the depression level of the patients. Functional Assessment Questionnaire was used to measure patients' activities of daily living (ADL). Neuropsychiatric Inventory-Questionnaire (NPI-Q) was used to estimate the behavioral and psychological problems of the dementia (BPSD). The Chi-squared test was used to access the impact of each stressors between two groups. The regression model was used to investigate the odds ratios (OR) with 95% CIs of caregiver burden after adjusting for other variables.

Results: Patients who had young onset dementia ( $P=0.0208$ ), had history of psychiatric disease ( $P=0.0314$ ), had higher severity of dementia level ( $P \leq 0.0001$ ), having depression ( $P \leq 0.0001$ ), poor ADL function ( $P \leq 0.0001$ ) and more BPSD ( $P \leq 0.0001$ ) were positively correlated with higher caregiver burden. After adjusting patients' (age, sex, education level, history of smoking and alcohol consumption) and caregivers' (relationship with patient, living together and economic status) demographic data, the level of severity in dementia (Mild dementia: OR: 1.81; Moderate dementia: OR: 2.50; Severe dementia: OR: 1.93), patients having depression (OR: 3.12), poor ADL function (OR: 2.90) and BPSD severity (OR: 5.70) were prone to have connection with higher ZBI. In mild severity dementia (CDR=0.5) subgroup, the early onset dementia (OR: 2.63), patients having depression (OR: 4.57), BPSD severity (OR: 10.1) and caregiver depression (OR: 5.42) had significant impact on caregiver burden.

Conclusion: Severity of dementia, depressed mood, ADL function and severity of BPSD were related to caregiver's burden. Targeted the specific stressors may provide a respite for the caregiver of dementia patients. Further longitudinal studies are needed to reflect the real causality between the stressors and caregiver burden.

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**P104: Psychometric properties of the Spanish version of the Caregiving Compassion Scale (CCS)**

Laura Gallego-Alberto, Rosa Romero-Moreno, María Márquez-González, Richard Schulz, María Del Sequeiros Pedroso-Chaparro, Samara Barrera-Caballero, Isabel Cabrera, Carlos Vara-García, Andrés Losada

Introduction: Dementia caregiving is linked to significant levels of caregiver's distress. In the caregiving literature, compassion has been defined as the feeling that arises in witnessing the care-recipient suffering that motivates a subsequent desire to help. The limited number of studies analyzing the role of compassion in the caregiving stress process suggest that compassion is linked with higher levels of emotional distress. This study is aimed to analyze the psychometric properties of the Spanish version of the Caregiving Compassion Scale (CCS) and its effects on the caregiving stress process.

Method: Through individual interviews, 194 dementia family caregivers were assessed for depression, anxiety, guilt, quality of the relationship with the care recipient, frequency and appraisal of behavioral and psychological symptoms of dementia and caregivers' desire of institutionalization. To assess the caregiver's compassion, the Spanish version of the Caregiving Compassion Scale proposed by Schulz et al. (2017) was used. Exploratory factor analysis (EFA) and bivariate correlations were conducted.

Results: The EFA analysis showed a two-factor solution. The first factor was labelled Distress from witnessing the care-recipient suffering and explained a 44.32 % of the variance. The second factor, labelled Motivation/disposition for helping and explained a 15.03% of the variance. The internal consistency (Cronbach's alpha) for each subscale was 0.74 and 0.75 respectively, and 0.79 for the total scale. Factor 1 was significant and positively associated with depression, anxiety, guilt, frequency and appraisal of the care-recipients' depressive behaviors, and appraisal of the care-recipients' memory problems. Factor 2 was positively associated with better quality of the relationship with their relative and the frequency of care-recipients' depressive behaviors, and negatively associated with the caregivers' desire of institutionalization.

Conclusions: The results suggest that the CCS is a valid and reliable scale for measuring compassion in Spanish caregivers. A bidimensional structure of the CCS was obtained. The results suggest that while factor 1 may play a role in the explanation of caregivers' emotional distress, factor 2 seems to be associated with positive interpersonal dimensions of the care process. Schulz, R., Savla, J., Czaja, S. J., & Monin, J. (2017). The role of compassion, suffering, and intrusive thoughts in dementia caregiver depression. *Aging & mental health*, 21(9), 997-1004.

**P105: Quality of life and subjective burden of primary dementia caregivers in Bangkok, Thailand**

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Purpose: To study and compare factors correlated with quality of life and subjective burden of primary dementia caregivers at the Psychiatric Outpatient Unit of Siriraj Hospital in Bangkok, Thailand

Methods: One hundred and fifty-five dementia caregivers were enrolled in this study from September 2015 to May 2016. A set of general information questionnaires, Pictorial Thai Quality of Life (PTQL) and Thai version of Zarit Burden Interview (ZBI) were used to collect general information, quality of life and subjective burden respectively. Factors correlated with quality of life and subjective burden were analyzed by Chi-square test. Multiple regression analysis was used to define predictive factors of the caregivers' quality of life.

Results: Forty percent of the participants assessed themselves as having burden. Positive predictive factors of the caregivers' quality of life were high education, income, satisfaction towards psychiatric care and having jobs. Negative predictive factors of dementia caregivers' quality of life were being female, having financial problems, sickness, long caregiving hours per day, burden from taking care of other dependents, and subjective burden ( $p < 0.05$ ).

Conclusion: The primary dementia caregivers' quality of life was correlated with their subjective burden, socioeconomic status, and caregiving experiences. It is crucial to focus on promoting confidence in caregiving, perceived social support and positive satisfaction towards mental health care for dementia caregivers.

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### **P106: Relationship between sleep problems, cognitive fusion, and distress in dementia family caregivers.**

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**Introduction:** Sleep disturbances are associated with negative emotional outcomes in family dementia caregivers. Cognitive fusion, the tendency of behavior to be excessively regulated and influenced by one's thoughts, may contribute to this association. The aim of this study is to analyze the relationship between sleep disturbances, cognitive fusion and psychological distress in a Spanish sample of caregivers.

**Method:** Face to face interviews were carried out with 239 dementia family caregivers. In addition to sociodemographic variables, insomnia (Insomnia Severity Index, ISI), frequency and reaction to behavioral and psychological symptoms of dementia, cognitive fusion, and depressive and anxious symptomatology were assessed. Correlational analyses were conducted in between insomnia and the rest of the variables assessed. In addition, ANOVA analyses were carried out to analyze differences between caregivers' insomnia risk profiles, following cut-off scores for the ISI scale: absence of insomnia (n = 150; 62.8%), subclinical insomnia (n = 68; 28.5%) and clinical insomnia (moderate-severe) (n = 21; 8.8%).

**Results:** Insomnia was positively and significantly related to reaction to behavioral and psychological symptoms of dementia (p < .05), depression (p < .001), anxiety (p < .001) and cognitive fusion (p < .001). Significant differences were found between insomnia profiles for frequency and reaction to behavioral and psychological symptoms of dementia, cognitive fusion, depressive and anxious symptomatology. Specifically, the subclinical insomnia profile showed higher levels of frequency and reaction to behavioral and psychological symptoms of dementia than the group of absence of insomnia (F=3.92, p<.05; F=3.06, p<.05; respectively); and the absence of insomnia profile showed lower levels of cognitive fusion (F= 5,03, p<. 05) anxious and depressive symptomatology (F=10,96, p<.001; F=9,35, p<.001; respectively) than the other two profiles: subclinical and moderate-severe insomnia. No significant differences were found for age, gender, daily hours caring and time since been a caregiver.

Discussion: The results suggest the relationship between sleep problems, caregivers' cognitive fusion and distress. Therefore, assessing potential predictive variables of sleep disturbances, such as cognitive fusion, may be of clinical importance to design appropriate psychological interventions.

### **P107: Nigerian Women are more Susceptible to the Impact of Diabetes and Dementia Crosstalk: State-of-art, Future perspectives and Directions**

Efosa Kenneth Oghagbon, Faeren Dogoh, Monday Ogiator, José Prieto-Pino, Lydia Gimenez-Llort

Five major fields of medicine: cardiovascular disease, pharmacology, oncology, liver diseases and osteoporosis are banners for Gender Medicine. These fields demonstrate the relevance of considering the differences between men and women in terms of prevention, clinical signs, therapeutic approach, prognosis, psychological and social impact. Now, it is also the turn that Gender Medicine meets psychogeriatrics. For this purpose, this Symposia will introduce the conceptual frames of Gender Medicine, it will put them in context of the old age, with special focus on psychogeriatric. Thereafter, we'll gather together to present our current research, addressing three topics of growing relevance due to the aging of population, where woman and/or male are key actors in psychogeriatric scenarios. Loneliness and False stigmas in frequent attenders of primary health care centres, the increased susceptibility of Nigerian women to the impact of diabetes-and-dementia crosstalk and, finally, neglect, abuse and violence exerted on the elderly, a problem of social magnitude.

Among the preventable complications of diseases that require urgent effective health literacy programs in sub-Saharan Africa, crosstalk between diabetes and dementia stands out for women's health. Type 2 diabetes mellitus (DM2) in midlife is a recognised risk factor for dementia. This crosstalk is more significant in persons of African ancestry. Globally, the prevalence of DM will increase dramatically in the next few years with 75% of cases living in low-to-middle-income countries. Some major risk factors for DM2 accelerates the development of dementia in Africa-Americans, thus leading to higher prevalence of dementia compared to Caucasians. It is known that 58% of the global 46.8 million dementia subjects lives in economically developing countries. This proportion may reach 63% and 68% in 12 and 32 years' time, respectively. Females are 1.5 times likely to develop dementia, but sub-Saharan Africa women have a disproportionately two-to-eight fold increased dementia risk. In the eye of this storm is Nigeria which is home to the highest number of diabetics in Africa. Diabetes prevalence in the country is rising parallel to increased incidence of obesity, hypertension and rising population age. The socioeconomic impact of increasing prevalence of DM2 and dementia will be unsustainable for Nigeria healthcare system, given the experiences in developed economies. This study analyses the current situation of women's health in Nigeria, and explore future policy directions. The complex interplay of factors involved in the DM2-dementia crosstalk in Nigerian women include those due to biological processes (metabolic syndrome, vascular damage, inflammation, oxidative stress, insulin resistance and anaemia), nutritional habits and sedentary lifestyles. Other factors that predisposes Nigerian diabetic women to dementia are, restricted resources, lack of visibility and poor health management. They add up to increase the burden of disease in the Nigerian woman, irrespective of age. We advise urgent implementation of health policies and actions that will increase ratio of mental health professionals / number of patients, especially in rural areas and the establishment of proactive primary healthcare centres. Importantly, interventions targeting adolescents and adult women, and others specific to mother-child interactions, are strongly needed in Nigeria and the sub-region for mitigating dementia in women.

### **P108: Atlantic Fellows for Equity in Brain Health: Addressing the Inequities of Dementia**

Victor Valcour, Brian Lawlor, Stacey Yamamoto, Bruce Miller, Ian Robertson

Established in 2015, the Global Brain Health Institute (GBHI) aims to reduce the impact of dementia around the world by training and supporting a new generation of leaders. In 2016, GBHI began training its first international and inter-professional cohort of Atlantic Fellows for Equity in Brain Health, hosted at two Founding Sites, Trinity College Dublin and University of California, San Francisco. Core hypotheses underlying our theory of change include:

- An integrated, inter-professional approach to brain protections strategies will allow novel, scalable and effective means to impact the burden of dementia.
- Approaches must address the needs of low and middle income regions, as most new cases of dementia will emerge from these regions.
- Creative social change will surface when these leaders are supported in a career-duration network.
- Approaches must address inequities, given that the greatest non-genetic risk factors for dementia are driven by the same social determinants that drive other physical illness and are deeply rooted in disparities.

We now report the first three years of program operation. Early indicators of success linked to these hypotheses include the diversity of profession and breadth of region of current and alumni Atlantic Fellows. To date, 85 individuals have been or are currently training at one of two Founding Sites representing 25 different countries. Most have been from the Mediterranean, South and Central American regions as well as the US and Ireland. The diversity of profession includes clinicians (neurologists, geriatricians, internists), policy makers, economists, a lawyer, social scientists, journalists, and those in the arts (musicians, thespians, and an art director). Early indicators of impact are evidenced by Atlantic Fellow testimony, grants received and number of publications linked to our work.



"GBHI has changed my future. I [now] have broader knowledge and broader interests— My life will be different now... in the approach that I have in my field or the way I understand my research and the people I connect with." - current Atlantic Fellow

**P109: Determinants of Intention Among Primary Care Physicians in Puerto Rico to Make an Early Diagnosis of Alzheimer's disease: An application of the Theory of Planned Behavior**

Mirna L. Arroyo Miranda, Jessica Irizarry Ramos, Ernesto Rosario Hernandez, Valcarcel Lillian

Background: Although Alzheimer's disease (AD) is the fourth leading cause of death in Puerto Rico, it can take a patient up to 2 years to receive a physician diagnosis; this delay may be related to physicians' beliefs about AD. This is the first study in Puerto Rico about attitudes and practices of Primary Care Physicians (PCPs) towards AD and, to our knowledge, the first to address the problem using the Theory of Planned Behavior (TPB).

Objectives: Study addressed barriers and limitations of PCPs to make an early diagnosis of AD, using the TPB framework. The study aimed to determine: (a) intention of PCPs to perform an early diagnosis of AD; (b) association between theoretical constructs and intention of PCPs; and (c) if salient beliefs under each construct hinder or promote PCPs' intention.

Methods: A questionnaire was specifically designed for this cross-sectional study, to measure each construct. Final sample size was 103 participants. Validity and reliability measures were assessed and structural equation analysis conducted using PLS-SEM (SmartPLS, 3.0).

Results: Attitudes, Subjective Norm and Perceived Behavioral Control (PBC) constructs reached validity and reliability standards. Direct structural model reached predictive relevance of .268. Combined, the three constructs in our direct model explained 35.7% of the variance, reflecting a strong intention of PCPs to perform an early diagnosis of AD ( $R^2 = .357$ ,  $p < .001$ ). PBC was the strongest predictor of intention, suggesting that training and years of experience are key to having a positive outlook for early diagnosis ( $\beta = .378$ ,  $p < .001$ ).

Conclusion: TPB is a good model to examine intention to make an early diagnosis of AD. Our findings could be of use to design interventions to improve PCPs diagnosis practices and dispel myths about AD. Training by modeling is key to changing PCPs' Perceived Behavioral Control. Study data could also be useful to patient associations for advocacy purposes.

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**P110: Assessment of Perceived Needs in a Geriatric Population of Puerto Rico After Hurricane Maria, Evaluated by HESPER Scale.**

Ginette Gonzalez-Ramirez, Cristina Nieves-Muñoz, Glorimar Rodriguez-Gutierrez, Ian da Silva, Ricardo Abreu, Eric Miranda, Horacio Serrano, Lawrence Oppenheimer, Christian Schenk, Ivonne Jimenez-Velazquez

Disaster-related stressors have a significant influence on mental and functional capacity of the geriatric population. Hence, to measure the possible problems faced by individuals 65 years and older after Hurricane Maria, the Humanitarian Emergency Settings Perceived Needs (HESPER) Scale was used for the first time in Puerto Rico (PR). Therefore, the study aims to better understand this population's perceived needs and stressors. The data collected could provide data when establishing guidelines for future disasters by establishing potential risk factors and their impact to stress, health, and general well-being of the most vulnerable. A cross-sectional study was conducted to participants  $\geq 65$  years with a sample size of  $N=1000$ , residing in Bayamón, PR. Perceived needs were measured using the HESPER Scale. Participants were selected from the catchment area of the ongoing longitudinal ADI 10/66 study cohort, a population-based research into dementia. The studied population demonstrated common perceived needs through all age subgroups (65-102 y/o), with health and distress predominating as recurring necessities. Approximately half (44.9%) of participants reported living with a serious health issue while, about a third (30.6%) perceived themselves experiencing a seriously distressed state. Although health and distress persisted as the two most frequent perceived needs in every age group, disparities emerged between the third most frequent need, being income, transportation and family separation in an ascending age group order. Data showed there are specific perceived needs to consider immediately/preferentially following a natural disaster. It also grants evidence for the implementation of new public policy to consider caregiving as a priority for the elderly, as this demographic represents 19.8% of Puerto Rico's population.

As health disparities and distress were identified as the most frequently perceived needs, it is suggested, that efforts be made in order to improve interventions following a future natural disaster.

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### **P111: Developing Culturally Sensitive Recruitment Materials about Alzheimer's Disease Related Biomarkers**

Elizabeth Hathaway, Sophia Wang, Ralph Richards, Mollie Richards, Yvonne Lu, Daniel Bateman, Mary Guerriero Austrom

**INTRODUCTION:** Although African-Americans are at higher risk for Alzheimer's disease and related disorders (ADRD) than other racial and ethnic groups, they are frequently underrepresented in ADRD research studies.

To address this challenge, the National Institute on Aging-funded Indiana Alzheimer Disease Center Outreach and Recruitment Core (IADC OR Core) developed a Community Advisory Board (CAB). The CAB consists of 11 members (including 2 co-chairs) of community leaders representative of the African-American communities in the Indianapolis metropolitan area, or working closely with these communities.

Earlier work showed that collaboration among the CAB, the IADC, and the Greater Indiana Chapter of the Alzheimer's Association yielded higher enrollment rates of African-Americans in IADC clinical studies. The current initiative sought further collaboration with the CAB to develop culturally-sensitive recruitment materials about ADRD-related biomarker collection.

**METHODS:** Materials to provide education about ADRD-related biomarker collection were developed through an iterative process. The IADC OR Core collaborated with the CAB and the Patient Engagement Core of Indiana Clinical and Translational Sciences Institute to refine the content, layout, readability, and visual elements of these materials.

**RESULTS:** Three major themes were identified in the educational materials: (a) raise awareness that underrepresented minorities are at much higher risk of ADRD and other comorbidities; (b) emphasize the need for underrepresented minority participation in ADRD biomarker research in order to develop personalized ADRD-related treatments; (c) highlight a collaborative approach between community participants and our researchers.

Three main recommendations for recruitment materials were identified: (a) use language easily understood by communities with a wide range of health literacy; (b) use visual aids to explain complex ideas; (c) reassure potential participants that confidentiality of collected biomarker information will be maintained.

Results from the feedback were incorporated into the IADC recruitment materials.

**CONCLUSION:** The CAB represents a valuable collaborator for both minority recruitment and the development of culturally-sensitive recruitment materials about ADRD-related biomarkers.

Our next steps include: conduct focus groups with underrepresented minorities in community settings, specifically those with a high prevalence of African-Americans; further refine our materials; develop culturally-sensitive and appropriate ways to share the materials; and make our materials available to all.

### **P112: Differential effects of the interaction between the education and APOE $\epsilon$ 4 allele on amyloid-beta retention and memory performances in cognitively normal older adults and Alzheimer's disease patients**

Dong Woo Kang, Chang Uk Lee, Hyun Kook Lim

**Background:** Despite the effect of education and APOE  $\epsilon$ 4 allele on amyloid-beta (A $\beta$ ) retention and memory, previous studies have not dealt with an interaction between two factors on A $\beta$  deposition and memory function in the course of Alzheimer's disease (AD).

**Objective:** To evaluate education by APOE  $\epsilon$ 4 allele interactions for A $\beta$  retention and neuropsychological test scores in cognitively normal older adults without A $\beta$  deposition [CN (A $\beta$ -), n=45] and Alzheimer's disease patients with A $\beta$  retention [AD (A $\beta$ ), n=25].

**Methods:** Multiple regression analyses (adjusted for age, gender) were conducted to examine the effects of education, APOE  $\epsilon$ 4 allele, and the interaction between the two factors on global, regional A $\beta$  load quantified using [18F]flutemetamol standardized uptake value ratio with the pons as reference region and on neuropsychological test scores in each group.



Results: The interaction between education and APOE  $\epsilon$ 4 allele had an effect on amyloid load in parietal lobes and striatum in each CN (A $\beta$ -) and AD (A $\beta$ +). There was an interaction effect of education and APOE  $\epsilon$ 4 allele on delayed recall only in CN (A $\beta$ -).

Conclusions: The present results highlight the differential effects of education and APOE  $\epsilon$ 4 allele interactions on AD pathology and memory function, allowing a deeper understanding of the role that protective and risk factors play in the AD pathogenesis.

### **P113: Effects of Alzheimer's Disease (AD) into daily life activities: To test by an ecological battery test (RBMT)**

Nilda Henruquez

Background: Alzheimer's disease (AD) is an important and rapidly expanding public health problem in all developed countries and the memory is always affected at an early stage of the AD.

Objectives: The disorder or decline of the memory may have a profound impact in daily life activities. Therefore, this study aims to evaluate, by ecological tests, the decline of these processes experienced by AD patients.

Methods: My research to exam this disease by submitting 20 AD patients, at an early stage of the illness, to an ecological test, along with a longitudinal study of the control group with matching subjects.

In order to test the memory disorders in daily living, there was used the battery to investigate the everyday memory ability by Wilson (1989): Rivermead Behavioral Memory Test (RBMT).

For the statistical treatment we used SPSS software 16 version, there were calculated correlation, test X<sup>2</sup>, ANOVAs.

Results: Findings reveal three types of patients groups showing a great heterogeneity and variability among them. The statistical analysis allowed to the RBMT show the patients with an important decline in relation to the pattern. The prospective memory, the face recognition, the recall story and delayed recall are more affected. The topographic memory is better preserved in AD.

Conclusion: The tests reveal the difficulties to revive knowledge of the cognitive function level on the AD patients. The RBMT suggest deficits in working and prospective memories: temporal organization, attention and executive function. These disorders show difficulty in retaining information and in using it spontaneously in daily activities on the AD patients.

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### **P114: Efficacy of cognitive stimulation programs in patients with Alzheimer's Disease**

Elisa Arca Acevedo, Nuria Carrera Alfonso, Agueda Rojo Pantoja

#### **INTRODUCTION**

50 million people around the world who live with dementia, about two thirds suffer, Alzheimer's disease.

Because of the great impact of the disease and the symptoms it entails, there is a need to establish a treatment to alleviate the symptoms and decrease the patient's dependence.

Helping to improve or maintain cognitive functions is important in mild and moderate phases, allowing the person greater independence and autonomy for more time.

Research has shown that psychosocial interventions can be effective in improving the quality of life of people with dementia and caregivers.

#### OBJECTIVES

- Analyze the scientific evidence on the effectiveness of cognitive stimulation in patients with AD.
- Evaluate the effectiveness of cognitive stimulation based on new technologies.
- Analyzing the impact of cognitive stimulation on psychological symptoms and quality of life

#### METHODOLOGY

Systematic review of scientific articles from October 2018 to March 2019 in the Cochrane Library, Pubmed, Lilacs, Trip Database and Dialnet.

Inclusion criteria:

Alzheimer's disease > 65 years

Mild or moderate phases of the disease

A treatment with drugs indicated for dementia

Studies published in the last 5 years

Sample size > 20 patients.

No comorbidity with a serious mental disorder

The level of quality of the scientific evidence of the included studies was assessed using the SIGN classification.

#### RESULTS:

- 1 meta-analysis of randomized clinical trials with Level of Evidence (LE) 1+
- 3 systematic reviews with LE 1+, 2 ++ and 1-
- 1 randomized clinical trial with LE 1-
- 1 case-control study with LE 2+.

#### CONCLUSIONS

The available evidence regarding cognitive stimulation remains limited, and the quality of the evidence should improve. Well-designed studies are required to obtain more definitive evidence.

They should be considered a therapeutic option for addressing not only the deterioration of cognitive and functional abilities, but also, the behavioral and psychological symptoms in patients with mild or moderate AD.

Computer-based cognitive training may represent an approach to further improvement in the early phase of the disease

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#### **P115: Evaluation of automated region of interest analysis tool in brain MRI individual space for Alzheimer's disease**

Masahiro Shigeta, Utsumi Tomohiro, Kodaka Fumitoshi

Introduction: Alzheimer's disease (AD) is progressive neurodegenerative disease. For the purpose of diagnostic aid for AD, brain MRI software tools for automated regions of interest (ROIs) analysis are available. Although these tools implement automatic z-transformed evaluation for hippocampus in MNI standardized space, registration errors derived from overfitting can occur. T-PROTO (nipponectsystems. co. ltd) is a software which implements multi-atlas segmentation (joint label fusion) with a correction (Seg Adapter) by automatically extraction of most similar ten atlases from those from thirty patients with mild to moderate Alzheimer's disease. In the present study, we evaluated volume calculation and variation in the hippocampus with reference to FreeSurfer.

Methods: This study was performed as a retrospective database study, and was approved by Ethical Committee of The Jikei University School of Medicine. Six T1-weighted MR images of patients with Alzheimer's disease who visited the Jikei

University Hospital from April 2017 to October 2018 were randomly chosen from database. We compared volumes, change of variation (COV) of the hippocampus and amygdala. We also compared the ratio of the volume of the hippocampus to the total of the hippocampus and amygdala using FreeSurfer and T-PROTO. Total analysis time of each tool was also evaluated.

Results: The average volume of the hippocampus measured by T-PROTO and FreeSurfer was  $2067.5 \pm 643.2$  and  $3185.3 \pm 686.9$ , respectively (mean [mm<sup>3</sup>]  $\pm$  SD,  $t=2.91$ ,  $p=0.02$ ). The values of the COV of the hippocampus measured by T-PROTO and FreeSurfer were 31 and 22, respectively (COV [%]). The average volume of the amygdala measured by T-PROTO and FreeSurfer were  $653.9 \pm 64.6$  and  $1205.2 \pm 218.1$ , respectively ( $t=5.94$ ,  $p<0.01$ ). The values of the COV of the hippocampus measured by T-PROTO and FreeSurfer were 9.9 and 18, respectively (COV [%]). Total analysis time of each software was ~9 hours for FreeSurfer, ~1 hour for T-PROTO, respectively.

Conclusion: T-PROTO can have the similar performance with FreeSurfer in terms of variation and dividing hippocampus and amygdala complex. And T-PROTO can be a better option to evaluate hippocampal volume in clinical setting because of a total time of analysis.

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### **P116: How non-profit organization contribute to change: developing new 2.0 Taiwan dementia plan in response to the WHO global action plan**

Te-Jen Lai, Li-Yu Tang

To improve the quality of lives of people with dementia, their carers, and families, the Taiwan government issued the national dementia plan in August 2013. Taiwan became the thirteenth country who has a national dementia policy in the world.

Furthermore, the Taiwan government announced the 2014-2016 action plan on dementia in September 2014. In response to population ageing and dementia epidemic, the Taiwan government adopted the World Health Organization global action plan on dementia, the opinions of people living with dementia and their families into the draft of the second edition of the Taiwan Dementia Plan by the end of 2017.

The second edition of the Taiwan Dementia Plan covers the period 2018-2025. The policy identifies seven strategies, with action plans, targets, indicators set for each.

Taiwan Alzheimer's Disease Association (TADA) was founded in 2002. It is a national non-profit organization. In 2005, TADA became a full member of the Alzheimer's Disease International (ADI). We embarked on a new strategic effort to influence national dementia policy. In the aspect of partnerships with government, Ministry of Health and Welfare (MOHW) commissioned TADA to develop the second edition of the Taiwan Dementia Policy, the establishment of a national-level information system, the system for training general and specialized staff in the health workforce and so on. In the aspect of joint efforts of the civil society, TADA held four sessions of consensus meetings and civic forums in different area of Taiwan, held a workshop on the dementia policy, conducted the online survey, to collect the suggestions and expectation for the Taiwan dementia policy.

In the future, Taiwan MOHW will hold the supervision and evaluation meetings on dementia plan regularly. TADA will do our best to advocate for people living with dementia and their carers, and work with the Taiwan government, the civil society and ADI.

### **P117: Perceived Needs of Elderly Puerto Ricans at Risk of Dementia after Hurricane María**

Glorimar Rodriguez-Gutierrez, Ginette Gonzalez-Ramirez, Ian Da Silva, Eric Miranda, Eric Torres, Lawrence Oppenheimer, Horacio Serrano, Lydia Robles, Ivonne Z. Jiménez-Velázquez

Puerto Rico was struck by category 4 hurricane María in September 2017. This event drastically altered daily life for a prolonged period. Daily stressors are linked to dementia development and deterioration of mental health in the elderly. Perceived needs are needs that are felt or expressed by people themselves and are problem areas with which they would like help. Using the Humanitarian Emergency Settings Perceived Needs (HESPER) Scale, this study aims to evaluate perceived needs and the development or progression of dementia in elderly patients ( $\geq 65$  y/o) after a natural disaster.

The perceived needs of participants were measured using the HESPER scale in community elders  $\geq 65$  years ( $n=1,000$ ) in Bayamón, Puerto Rico. Study population was selected from an ongoing longitudinal study designed to assess dementia prevalence, incidence and risk factors, known as ADI 10/66. In the first phase, 233/2,000 participants with diagnosed dementia {11.7%} were identified in the catchment area. Door-knocking was recommended and HESPER Scale was performed on all available participants after the hurricane

The most frequently expressed needs were health problems (43.9%) followed by distress (30.6%). In addition, data showed that individuals perceiving a serious health problem were approximately 4 times (OR: 3.77) as likely to experience distress. Previous studies have shown that unresolved natural disaster-related stressors produced exacerbations in serious mental illness, post-traumatic stress disorders and suicidality in other countries. Subsequently, data collected from Puerto Rico showed health problems and psychological distress as the most frequently perceived needs following an event. Since health problems and distress have an association with increased risk for dementia and cognitive decline, it is important to adequately

approach these needs. Our data sustained that following a natural disaster, support to the elderly is immediately needed to safeguard their health from further cognitive deterioration, as they rely upon the community support system and their infrastructure that could be destroyed by the natural event. We suggest that interventions from emergency response agencies and services from each municipality should be led to prevent cognitive deterioration in elderly at risk, after a natural disaster. R C Kessler, S Galea, M J Gruber, N A Sampson, R J Ursano & S Wessely (2008). Trends in mental illness and suicidality after Hurricane Katrina. *Molecular Psychiatry* volume 13, pages 374–384.

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### **P118: The Effect of Enzyme-Treated Asparagus Extract on Expression of Heat Shock Protein 70 on Early Stage of Alzheimer's Disease**

Natalia Mikhailichenko

Introduction: Dementia is a global problem but efficiency of any modern drug is not proved. Meanwhile, drugs on the basis of Heat Shock Proteins (HSP) start the regeneration process - new neurons are created and brain function is restored. It helps patients at early stages who do not have the irreversible brain changes yet. Enzyme-Treated Asparagus Extract (ETAS) is a source of unique hydroxymethyl furfural derivatives that produces HSP expression.

The aim of study is to investigate the effects of ETAS on early stage of Alzheimer's disease by double-blind placebo-controlled study which includes evaluation HSP70 protein concentration in blood.

Methods: 30 patients (28 women and 2 men) of 51-79 years old with mild cognitive disorders were assessed. The patients were divided in 2 groups (n=15), taking placebo (dextrin) (group #1) and ETAS (group #2) for 6 months. Neurological status was assessed, neuropsychological testing (NPI, MMSE, FAB, Clock test), HSP70 (ELISA) blood test, brain MRI and EEG were performed before and after treatment.

Results: The results demonstrated substantial improvement in group#2 patients: significant increase of the number of HSP70 in blood (to 54,2% in group #2, and 13% in group #1) and neuropsychological test results (MMSE and FAB average score increased 4,5 and 2,1 in group #2; 0,3 and 0,3 in group #1) . Cognitive facilities and sleep were improved. All patients of group # 2 significantly decreased anxiety to 72%, while depression decreased only by 40%. In group #1, the result was 15 -18%, respectively.

EEG showed alpha rhythm index increasing in responders from group #2, which was not observed in group #1 responders.

Conclusions: Asparagus Extract truly produces HSP70 expression therefore significantly reduces intensity of cognitive and behavioral disorders. It is recommended at early stages of Alzheimer's disease as a medication improving higher cortical functions, emotional sphere, personal psychological constitution and neurophysiological measures in the whole.

### **P119: The prevalence, correlates, detection and control of Diabetes among Older People in low and middle income countries. A 10/66 Dementia Research Group Population - Based Survey.**

Aquiles Salas, Daisy Acosta, Cleusa Ferri, Mariela Guerra, Yuequin Huang, K.S. Jacob, Ivonne Jimenez, Juan Llibre, Ana Sosa, Martin Prince

Little is known of the epidemiology of diabetes among older people in low and middle income countries. In the USA National Health and Nutrition Examination Survey (US NHANES) 1999 - 2002[1], the prevalence of total (diagnosed and undiagnosed) diabetes increases sharply with age, from 2.4% in those aged 20 - 39 years to 21.6% among aged 65 years and over.

Prevalence of total diabetes had increased from 5.1%(1988-1994) to 6.5% (1999-2002), largest increases occurring in the oldest groups [1]. There are few epidemiological studies of diabetes among older people in low and middle income countries (LMIC). Nationally representative survey in China [2] and Mexico [3, 4] provides age-stratified estimates.

We aimed to study and compare prevalence, social patterning, correlates, detection, treatment and control of diabetes among older people in Latin America, India, China and Nigeria.

A cross-sectional surveys in 13 catchment area sites in nine countries. Diagnosed diabetes was assessed in all sites through self-reported diagnosis. Undiagnosed diabetes was assessed in seven Latin American sites through fasting blood samples (glucose > 7 mmol/L).

Total diabetes prevalence in catchment sites in Cuba (prevalence 24.2%, SMR 116), Puerto Rico (43%, 197), and rural Mexico (23, 7%, 111) already exceeds that in the USA, while that in Venezuela 20, (% , 100) is similar. Diagnosed diabetes varied very widely, between low prevalence in sites in rural China (0.9%) rural India (6.6%) and Nigeria (6.0%) and 32.1% in



Puerto Rico, explained mainly by access to health services. Treatment coverage varied substantially between sites. Diabetes control (40 to 61% of those diagnosed) was modest in the Latin American sites where this was studied. Diabetes was independently associated with less education, but more assets. Hypertension, central obesity and hypertriglyceridemia, but not hypercholesterolemia were consistently associated with total diabetes.

Conclusions: Diabetes prevalence is already high in most sites. Identifying undiagnosed cases is essential to quantify population burden, particularly setting where diagnosis is uncommon. Metabolic risk factors and associated lifestyles may play an important part in aetiology, but this requires confirmation with longitudinal data. Given the high prevalence in older, more population research is required to quantify the impact of diabetes, and monitor the effect of prevention.

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### **P120: The role of emotional profiles in dementia family caregivers**

Celia Llorens Vidal

Introduction: Caring for a relative with dementia has been linked to negative outcomes on caregivers' physical and psychological health. However, not all caregivers present emotional distress and even some show positive emotions. Nevertheless, positive emotions have been scarcely explored in this population. The aim of the present study was to analyze the role of different emotional profiles on behavioral and psychological symptoms of the dementias (BPSD), guilt feelings, social support, and leisure activities.

Method: Participants were 257 dementia family caregivers. Face to face interviews were done assessing negative and positive emotions, BPSD, guilt feelings, social support and leisure activities. Negative emotions were measured with the Epidemiological Studies-Depression Scale (CES-D) and positive emotions with a scale designed ad-hoc to measure the main positive emotions related to caregiving (PEC). Participants were classified into four groups depending on their scores on CES-D and PEC: negative profile (high scores in CES-D and low in PEC), positive profile (high scores in PEC and low in CES-D), dull profile (low scores in CES-D and PEC), and ambivalent profile (high scores in CES-D and PEC).

Results: There were significant differences between profiles in the variables. The main results indicated that the negative profile showed lower levels of social support and leisure activities and higher levels of guilt and stress frequency related to the BPSD. Furthermore, the ambivalent profile showed higher levels of guilt and stress frequency related to the BPSD. However, the positive profile showed higher levels of social support and leisure activities and lower levels of guilt and stress frequency related to the BPSD.

Conclusion: The results of this study suggest that social support and conduct leisure activities may be related to the experience of mainly positive emotions. Furthermore, reporting negative and positive emotions has adverse consequences, like reporting only negative emotions. This study also provides support for the relevance of explore negative and also positive emotions in dementia family caregivers.

### **P121: Translational studies on the effect of old age in the behavioral and cognitive impairments associated to normal aging and those in Alzheimer's disease**

Daniela Marín-Pardo, Mar Hernandez-Guillamon, Lydia Gimenez-Llort

Alzheimer's disease (AD) is a complex neurodegenerative disease of generalized progressive deterioration of cognitive abilities. It results in the progressive loss of judgment and executive functions, together with the appearance of behavioral and psychological symptoms of dementia (BPSD). These neuropsychiatric symptoms are as clinically relevant as cognitive symptoms, since they strongly correlate with the degree of functional and cognitive impairment in the patients. New evidence reveals a high degree of heterogeneity in the clinical and temporal patterns of AD, which supports the existence of several subgroups of patients. Among others, the age of the elderly patients is a factor of interest when studying this heterogeneity. At the translational level, different animal models of AD exist mimicking the hallmarks of this disease. The APP<sup>swE</sup> murine model harbors the amyloid precursor protein (APP) Swedish mutation found in Familiar Alzheimer's Disease, and it is one of the best neuropathological characterized models. In the present work, we were interested to study the effects of old age on the behavioral alterations in the APP<sup>swE</sup> mice ethogram that emulate the BPSD and the cognitive impairments. For this purpose, 12- (middle age), 18- (old age) and 24-month-old (very old age) male transgenic mice were assessed and compared with age-matched non-transgenic mice used as controls. Animals were confronted to environments (new home cages, open field, T-

maze) with different anxiogenic conditions induced by novelty, open spaces, illumination or a labyrinth shape. Neophobia, anxiety, disinhibition, reduced locomotion and exploratory behaviors, increased emotionality as well as working memory impairments were exhibited through the battery of tests by the APPswe animals. However, the factor age was determinant for the sensitivity to measure these cognitive and non-cognitive alterations. Among the three old aged groups studied, 12-month-old APPswe mice allowed a better quantification of BPSD-like behavioral alterations and cognitive deficits as compared to those found in their age-matched group of mice with normal aging. In conclusion, the factor age may not only contribute to the heterogeneity of Alzheimer's disease but also be a relevant factor to take into account in the behavioral studies evaluating BPSD-like and cognitive profiles using this APPswe animal model.

### **P122: Years of life lost after Alzheimer's disease diagnosis: a question of age and disease severity**

Josep Garre-Olmo, Anna Ponjoan, José Maria Inoriza, Jordi Blanch, Inma Sánchez-Pérez, Rafel Cubí, Rosa de Eugenio, Esther Gelada-Batlle, Oriol Turró-Garriga, Joan Vilalta-Franch

**Introduction:** Compared with persons without Alzheimer's disease (AD), AD patients have decreased survival rates at a given age than those peers without AD. We aimed to estimate the years of life lost (YLL) after a diagnosis of AD taking into account age and disease severity at the moment of diagnosis.

**Methods:** We designed a retrospective age-sex and comorbidity matched cohort study with a 1:3 matching ratio to pair AD individuals aged 65 years and over with subjects without AD using a linkage between a dementia-specific registry database and two primary care electronic medical records databases. Persons with AD were 2,951 patients aged 65 years and over diagnosed with AD between January 2007 and December 2015 and registered by the Registry of Dementia of Girona. Subjects without AD were age-sex and comorbidity matched individuals without AD attended by general practitioners in primary care settings in the province of Girona (Catalonia, Spain). To compute the median life expectancy we used the subject's age as time scale. The YLL was computed as the difference in life expectancy between participants with and without AD, and were stratified according age and disease severity groups.

**Results:** The mean age at dementia diagnosis was 81.0 (SD=5.7) years, and 69.4% were female. Dementia severity was mild in 67.7%, moderate in 24.6%, and severe in 7.7%. The matched comparison group included 8,853 individuals without AD. The median life expectancy for individuals with AD was 81.3 years (95% CI=71.9-82.4), and for individuals without AD was 86.5 years (95% CI=85.8-87.1). The number of YLL for patients diagnosed before 80 years old was 3.9, 8.6 and 11.5 for mild, moderate and severe AD respectively. For patients diagnosed after 80 years old, the number of YLL was 1.2, 3.8 and 4.1 for mild, moderate and severe AD respectively.

**Conclusion:** For individuals with a diagnostic of AD after 64 there is an overall reduction of expected life with an estimate of 5.2 YLL. However, the younger age at diagnosis and the greater disease severity can increase the number YLL up to 11.5. These estimations are useful for patients, caregivers, clinicians and healthcare providers.

### **P123: Neuronal insulin signaling protects against A $\beta$ and $\alpha$ -synuclein-induced neurotoxicity and behavioral deficits in dementia with Lewy bodies**

Te-Jen Lai, Hsin-Hua Li, Ching-Chi Chang, Pai-Yi Chiu, Chih-Li Line-Jen Lai

**Objectives:** Previous studies have showed that intracellular  $\alpha$ -synuclein aggregations can be caused by protein-coding mutations in some familial  $\alpha$ -synucleinopathy. However, no pathogenic mutation in  $\alpha$ -synuclein is found in dementia with Lewy bodies (DLB) patients so far, suggesting genetic mutations may not play a major role in DLB pathogenesis. In contrast, our recent data revealed that the amyloid  $\beta$  (A $\beta$ ) may contribute to aggregate formation and exacerbate neurotoxicity of  $\alpha$ -synuclein. However, the underlying mechanism of action has remained unclear.

**Methods:** To investigate molecular pathways involved in A $\beta$ -mediated  $\alpha$ -Synuclein pathology, we established both in vitro and in vivo models to explore the putative molecular mechanisms between A $\beta$  and  $\alpha$ -synuclein.

**Results:** Our results indicated that A $\beta$  promotes  $\alpha$ -synuclein aggregation and then enhances neurotoxicity in a synergistic effect. However, this neurotoxicity was inhibited by administration of glucagon-like peptide-1 (GLP-1) analogue liraglutide, which has been shown to alleviate A $\beta$ -associated neuronal insulin resistance. In addition, liraglutide also increased the elimination of aggregated  $\alpha$ -synuclein by upregulating autophagy process, suggesting insulin signaling may be involved in  $\alpha$ -synuclein aggregation and neurotoxicity in DLB pathogenesis.

**Conclusion:** Based on these findings, we concluded that A $\beta$ -induced neuronal insulin resistance could be the causative factor of  $\alpha$ -synuclein toxicity. We hope these new insights will provide a better understanding in DLB preventive or therapeutic strategies in future.

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**P124: Brain lesion detection in adults with different amnesic mild cognitive impairment subtypes using structural magnetic resonance imaging (sMRI) technique.**

Luis Gil Calzada, Miguel Ángel Rivas-Fernández, Mónica Lindín, Montserrat Zurrón, Fernando Díaz, Santiago Galdo-Álvarez

Background: Amnesic Mild Cognitive Impairment (aMCI) is a clinical syndrome that carries a high risk of the patient developing Alzheimer disease (AD). The term is used to describe subjects with an objective memory disorder, but with preserved activities of daily living and absence of dementia. There is a great clinical interest in determining the cerebral structural alterations that the different aMCI subtypes may present. For this purpose, in this study we evaluated with a structural magnetic resonance technique the brain lesions in two aMCI groups: single-domain aMCI (sdaMCI; only impairment in memory) and multi-domain aMCI (mdaMCI; impairment in memory and others cognitive domains).

Methods: The sample was formed by 59 participants in control group (age mean: 67.24, SD  $\pm$ 8.98 years old), 29 in mdaMCI group (age mean: 71.48; SD  $\pm$ 8.15) and 23 in sdaMCI group (age mean: 66.65; SD  $\pm$ 8.58). The detection of cognitive impairment was performed with a battery of neuropsychological tests that evaluate different cognitive domains. MRI T2-weighted-Fluid-Attenuated Inversion Recovery (FLAIR) images were acquired with a 3T MRI scanner and then analyzed with the Lesion Segmentation Tool, a brain lesion detection software that automatically detects the total volume (measured in milliliters) and the number of brain lesions.

Results: There were significant differences between the groups in volume of lesions detected with an ANCOVA ( $F = 3.92$ ,  $p < 0.03$ ), in which the influences of years of education were controlled. The tests of comparison between means showed a larger volume of lesions in the mdaMCI group than in the control group ( $p = 0.018$ ), while the sdaMCI group did not show significant differences neither with the control group nor with the mdaMCI group. Regarding the number of lesions, no significant differences were found among groups.

Conclusion: Only the volume of brain lesions showed intergroup differences; concretely, this index was significantly larger in mdaMCI group than the control group, which may be related with the impairment in several cognitive domains in the former.

**P125: Diagnostic utility of Functional Activities Questionnaire (FAQ) and Behavioral Dyscontrol Scale (BDS) in patients evaluated for cognitive impairment at a memory disorders center**

Izabella Shuvayev, Kristin Slyne, David O'Sullivan

Background: Clinicians are frequently faced with challenges deciding between Mild and Major Neurocognitive Disorder (NCD), as the differentiation often relies on the degree of functional independence. We examined the predictive value of two validated scales: the Functional Activities Questionnaire (FAQ) and Behavioral Dyscontrol Scale (BDS), assessing capacity to function independently in patients enrolled in a memory disorders clinic.

Methods: This is a single-center retrospective study. Records of 33 patients were included with a completed FAQ, BDS, and neuropsychological testing (NPT) with diagnosis. Both FAQ and BDS were compared against the outcomes of neuropsychological testing and the center's consensus diagnosis. Diagnoses were grouped into 1) Cognitively intact; 2) Mild NCD; 3) Major NCD. FAQ and BDS were also subdivided into these categories with assigned scores. Because the FAQ manual does not differentiate between normal function and mild cognitive impairment, the scores were assigned based on clinical rationale and extant literature. After standardizing the values, median and interquartile ranges were calculated. A Wilcoxon sign-rank test was used to compare matched scores between the two instruments, and weighted kappa (kw) was used to measure agreement. All results yielding  $p < 0.05$  were deemed statistically significant.

Results: Using three categories of diagnoses and excluding other psychiatric/Unspecified NCD diagnoses (5 exclusions from NPT and 3 from the consensus/physician diagnoses), there was significant agreement between the FAQ and the NPT and consensus diagnoses, and the BDS and the NPT and consensus diagnoses. However, the FAQ showed slightly stronger agreement ( $kw = 0.392$ ;  $p = 0.002$ ) relative to BDS ( $kw = 0.264$ ,  $p = 0.010$ ).

Conclusions: Results of this preliminary study suggest that in this sample, FAQ was a better predictor of cognitive disorder diagnosis than the BDS. Given known limitations of self-report data, this result is unexpected. The reasons for these findings are unclear, but may be related to the following BDS limitations: inter-rater reliability, low ceiling, and/or severity of cognitive impairment in areas not measured by BDS (i.e., memory). Future research should attempt to replicate these findings as well as examine the above factors and whether certain BDS items are more predictive of diagnosis than others.

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### **P126: Distinctive relationship between functional connectivity of default mode network and cognitive functions in early and late mild cognitive impairment patients**

Chang Uk Lee

**Background:** Amnesic mild cognitive impairment (MCI) is classified into early and late MCI based on the degree of deterioration in memory performances evaluated by detailed neuropsychological tests.

**Objective:** To explore the difference in functional connectivity of default mode network (DMN) among healthy controls (HC) (n=37), early (n=30), and late MCI patients (n=35) and to evaluate a group by cognitive functions interaction for the functional connectivity of the DMN.

**Methods:** Subjects underwent resting-state functional MRI scanning and a battery of neuropsychological tests.

**Results:** A significant difference among the three groups was found in the functional connectivity between posterior cingulate cortex (PCC, seed region) and bilateral crus cerebellum, right medial frontal gyrus, superior temporal gyrus (Monte Carlo simulation corrected  $p < 0.01$ , cluster  $p < 0.05$ ). Furthermore, there was a significant group (HC vs. early MCI vs. late MCI) by verbal and memory performances interaction for the functional connectivity between PCC and right crus cerebellum 1, medial frontal gyrus, superior temporal gyrus ( $p < 0.001$ ). Additionally, a significant group (HC vs. early MCI) by verbal and memory performance interaction was found for the functional connectivity between PCC and right putamen ( $p < 0.001$ ).

**Conclusions:** Early and late MCI patients showed significant difference in functional connectivity of DMN brain regions, known to be vulnerable and compensatory to Alzheimer's disease pathogenesis. Moreover, functional connectivity of these brain regions displayed differential associations with verbal and memory performances, depending on the trajectory of MCI.

### **P127: Subjective memory ability correlates with functional connectivity between the hippocampus and posterior default mode network in cognitively normal older adults**

Linda Mah, Darren Liang, Frankie Chan, Aliya Ali, Mirjam Mulder-Heijstra, Susan Vandermorris, Nicolaas Paul LG Verhoeff, Nathan Herrmann, J. Jean Chen

**Purpose:** Subjective memory complaints are linked with development of Alzheimer's disease (AD) [1] but the neural mechanisms underlying this association are unclear. Multimodal neuroimaging studies suggest that large-scale network disruptions occur before amyloid plaques appear in the brain, beginning with alterations in the posterior default mode network (pDMN), including decoupling of the hippocampus (HC) from pDMN nodes [2]. Here we investigated the association between subjective report of memory ability and functional connectivity of the HC and pDMN. We hypothesized that self-report of greater memory ability would be positively correlated with HC-pDMN connectivity.

**Methods:** Participants were 45 older adults [15 males, mean age=72(6.3)] with normal cognition based on neuropsychological assessment and no neurological or psychiatric conditions. Subjective memory was evaluated using the Memory Functioning Questionnaire (MFQ). Resting state functional magnetic resonance imaging was acquired using gradient-echo EPI BOLD at 3T and processed using CONN toolbox [3]. Seed-based analysis used an 8 mm region of the posterior cingulate cortex (PCC,  $x=-6$ ,  $y=-52$ ,  $z=40$ ) [4], a key node within the pDMN, to measure functional connectivity with left and right HC.

**Results:** Total MFQ and MFQ frequency of forgetting (MFQ-FF) subscale scores were significantly correlated with left HC-PCC functional connectivity (MFQ total:  $r=0.36$ ,  $p=0.016$ ; MFQ-FF:  $r=0.48$ ,  $p=0.001$ ). MFQ-FF, but not total MFQ, scores were significantly correlated with right HC-PCC functional connectivity (MFQ total:  $r=0.25$ , ns; MFQ-FF:  $r=0.37$ ,  $p=0.013$ ).

**Conclusions:** These findings suggest that subjective memory complaints reflect HC-pDMN decoupling, consistent with large-scale network disruptions early in AD.

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### **P128: Tooth Loss and Cognitive Decline in Geriatric clinic attendees in Nigeria**

Mofoluwake Majekodunmi, Olusegun Baiyewu

**BACKGROUND:** Research reports link cognitive impairment, and dementia with tooth loss in older adults and one of the theories behind that is possible chronic infection ascending from the oral cavity to the brain. Better insight into the nature and extent of the association between tooth loss and cognitive function is of great importance in Sub-Saharan Africa where potentials for infections are high.

**AIM:** To determine the association between cognitive impairment, depressive symptoms and tooth loss among attendees of an outpatient clinic of a geriatric center in Ibadan, Nigeria

**METHODOLOGY:** Three hundred attendees were recruited from the geriatric clinic of the University College, Hospital, Ibadan, Nigeria. Cognitive status of patients was substantiated using items from CERAD; Mini Mental State Examination (MMSE), Word List Learning (WLL), Word List Learning Delayed Recall (DR) and Animal Fluency (AF). Functioning in participants was assessed using Instrumental Activities of Daily Living (IADL). Depression was assessed using Geriatric Depression Scale-30 (GDS). The number of teeth was counted in each quadrant of the mouth. A sociodemographic questionnaire was also administered.

Diagnosis of mild cognitive impairment was by Petersen's criteria while diagnosis of dementia was made using ICD 10 criteria.

**RESULT:** Prevalence of mild cognitive impairment was 8.0% while that of dementia was 4.0%. The prevalence of depression was 19.3%, with 17.0% having mild depression and 2.30% severe depression. Forty-one percent of the patients had no tooth loss, 94% had at least 10 teeth remaining. The mean (SD) tooth loss was 2.53(4.87). Mean (SD) for mild cognitive impairment was 2.69(4.55) compared to normal cognition 2.40(4.66),  $p = 0.72$ . For dementia, mean (SD) tooth loss was 4.42(6.99) compared with 2.40(4.66) for normal cognition,  $p = 0.13$ ... Comparing any vs no tooth loss, there was significant relationship with older age, ( $p = 0.001$ ), history of hypertension ( $p = 0.04$ ), and IADL ( $p = 0.007$ ). However, there was no significant association with MMSE, WLL, DR, AF and GDS-

**CONCLUSION:** Tooth loss leads to cognitive decline in this cohort; though not significantly related to dementia. Possible reasons may be the low rates of tooth loss in this cohort, as it has been reported in other studies that it is significant in those with less than 10 teeth remaining.

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### **P129: Caring for women with Young Onset Dementia during menopause: a gap in research**

Maritza García-Toro, María Cruz Sánchez-Gómez, Angie Alejandra Díaz Baquero, Manuel Franco

**INTRODUCTION:** Young Onset Dementia represents about 9% of cases of dementia around the world (WHO & Alzheimer's Disease International, 2013). Because it is a rare form of dementia, people with this condition and their families must deal with a lower social conscience about their disease, greater stigmatization and less chance of having adequate early diagnosis and treatment. In a previous study with 50 family caregivers of people with Early-onset Familial Alzheimer's Disease, the care of women with dementia during their transition to menopause was detected as an important stressor, and is a taboo subject that is not usually mentioned in consultations with specialists. That is why we conduct a systematic review in order to guide caregivers about the management of behavioral and emotional changes of a woman with dementia during menopause.

**METHOD:** A systematic review was carried out in 6 scientific databases with the descriptors "menopause", "menstruation", "Alzheimer", "dementia" and "caregiving". A total of 1731 articles were identified, and 17 were finally included in synthesis, as well as different guides for the caregiver and websites about Young Onset Dementia. **RESULTS:** The studies report the increased risk of Alzheimer's Disease in women going through menopause, the diagnostic difficulties of Early-Onset Alzheimer's Disease when confused with menopausal changes, and the risks and benefits of hormone replacement therapy.

None of the resources reviewed focused on the care needs of women with dementia during their transition to menopause.

**CONCLUSION:** The care of a woman with Young Onset Dementia has particularities that must be addressed, caregivers may have concerns about changes in behavior or mood that are added to those that are specific to the disease, as well as the convenience of using a hormone replacement therapy in combination with dementia medications; likewise, the management of hygiene and menstrual discomfort. It is a priority to expand research in this field.

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### **P130: A different type of primary progressive aphasia; a case report of dysprosody and word deafness**

Mika Konishi, Hajime Tabuchi, Kyoko Mashima, Masaru Mimura

Primary progressive aphasia (PPA) could be classified into three types; progressive non-fluent aphasia, semantic dementia and logopenic progressive aphasia (Gorno—Tempini et al., 2011). These types manifest aphasia and are resulted in the dysfunctions of language dominant hemisphere, normally the left hemisphere. Here, we report a patient with progressive speech impairment characterized by dysprosody, hearing impairment and with the atrophy in the right temporal lobe. A 71-year-old right-handed female complained of a hearing difficulty two years ago. Her husband noticed that her speech was

gradually becoming bumbleheaded. Her speech could be perceived by listeners as foreign because of slowness and a telegraphic manner. She used to enjoy listening to music, but she could not recognize songs nor sing songs any more. She had insight into her speech impairment, and she had no inconvenience in daily life except verbal communication. There were no cerebellar symptoms, pyramidal signs, pathologic reflexes, or abnormalities in phonation-related organs. As a result of otorhinolaryngological examination, although pure tone audiometry is normal, speech audiometry is impaired. The standard language test of aphasia showed no abnormalities in verbal comprehension, reading or writing. However, she omitted one or two phrases in sentence repetition, and phonemic paraphasia was observed in repetition and in a free talk. The most prominent feature of her speech was abnormality of prosody. The score of MMSE was 27/30, and her intelligence was normal. She showed no memory decline and neither apraxia nor frontal lobe symptoms were observed. MRI of the brain revealed a remarkable atrophy of the right anterior temporal lobe. Cerebral blood flow IMP-SPECT showed decreased blood flow of the right temporal lobe and DaT-scan showed a reduced uptake in the right striatum. We considered that the lesion responsible for dysprosody and word deafness was consolidated to the right temporal lobe. There have been some reports of patients with progressive speech impairments associated with word deafness or environmental auditory sound agnosia so far. Although the pathological process occurring in the area of atrophy and hypoperfusion remained unclear, there would be cases with speech disorders associated with word deafness as a subtype of PPA.

Gorno—Tempini, M. L., Hillis, A. E., Weintraub, S., et al. (2011). Classification of primary progressive aphasia and its variants. *Neurology*, 76 : 1006—1014.

### **P131: A scoping review of studies on the dementia and mortalities due to motor vehicle accidents: methodological characteristics on currently available studies and recommendations for future research.**

Ying-Jyun Shih, Yung-Jen Yang, Hui-Wen Chien, Ling-Ling Yeh

**Background:** As the baby boomers turn into aged boomers, accidents of elderly drivers became not uncommon and the issues of elderly drivers have become urgent while drivers with dementias attract most attention. Despite many countries have launched administrative regulations, the actual mortality in this population was far from certainty. In this poster, we will present the methodological characteristics of the studies aiming at dementia and motor vehicle accident mortalities based on a systematic review, and make recommendations for future research.

**Method:** A research team were formed and searched MEDLINE-OVID, PsychInfo, and Scopus, aiming specifically at observational and interventional studies with better quality. The main population was persons with dementias while outcomes were mortalities and serious injury with subsequent death within 48 hours. The screening of the included studies, data extraction, critical appraisal and software followed the recommendations of Cochrane Collaborations, with the Newcastle-Ottawa Scale and Cochrane Risk of Bias Tool for assessing the quality of the different type of studies. All processes were performed by two independent researchers and discrepancies were solved by voting with another researcher.

**Results:** 653 studies were initially identified and 78 studies were then included for full-text inspection after initial screening. Unfortunately, only 3 studies were judged probably relevant, and was then enrolled into critical appraisal. The research team decided not to perform quantitative meta-analysis because of high heterogeneities of the outcomes in individual studies. We then adopted the qualitative approach to synthesise our findings, and three main themes were identified through mixed-method approaches. All studies aiming at the topic were secondary studies of registry databases which were prone to information bias. The quality of studies was inadequate due to short duration of the studies and small sample size. Finally, there were risks for performance bias because of inconsistent of diagnostic criteria of dementias and cognitive function assessment tools. Other detailed results will be presented on the poster on site.

**Conclusion:** We concluded that there is room for improvement in the research of dementia and vehicle mortalities. Due to the shortcomings of current studies, international consensus and research platform may be helpful to fill this gap.

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### **P132: Associations between cognitive complaints, self-efficacy and cognitive reserve in community-dwelling middle-aged and older adults.**

Raquel Rodríguez-González, David Facal, Cristina Lojo-Seoane, Alba-Elena Martínez-Santos, Manuel Gandoy-Crego

**Objectives:** To explore associations between cognitive complaints (CC), self-efficiency (SE) and cognitive reserve (CR) in middle-aged and old adults living in the community.

**Design:** Cross-sectional observational and correlational study.

**Participants:** 307 community-dwelling middle-aged adults between 55 and 69 years old (174 women, 56.5%) without cognitive impairment.

Measurements: SE was assessed with the Self-efficacy and Health scale (SEH) (Gandoy-Crego, et al., 2016); cognitive status with the MoCA test (Nasreddine et al., 2005); cognitive reserve with the Cognitive Reserve Index questionnaire (CRIq) (Nucci et al., 2012), providing scores for CRI-Education, CRI-WorkingActivity, CRI-LeisureTime; and, finally, memory and cognitive failures in daily life were measured with the Spanish version of the Memory Failures of Everyday (MFE) test (Montejo et al., 2012).

Results: Significant negative correlations were found between CC and CR-Leisure Time. Accordingly, group comparisons between medium and high reserve showed higher CC but also higher SE in the medium reserve group. A linear regression model with CC as dependent variable and cognitive status, age, CR and SE as predictors showed that CR and SE are the significant predictors of CC.

Conclusions: Self-efficacy (SE), as the belief in the ability to do a specific behaviour, has shown to be a remarkable cognitive factor affecting health. Higher CR could lead middle-aged and old adults to develop more complex beliefs about their health and, consequently, lower sense of SE. Previous studies have shown that SE play a potential role in CC as a health-related metacognitive proxy of cognitive aging; the current results suggest a potential joint role of CR and SE as CC predictors.

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### **P133: Big data in cohorts to understand the interaction of biological and psychosocial factors to prevent dementia**

Clive Ballard, Louise Allan, Anne Corbett, Byron Creese, Helen Brooker, Chris Fox, Saber Sami, Lee Shepstone, Mizanur Khondoker, Kathryn Richardson

There have been groundbreaking advances in epidemiology in recent years making a significant contribution to understanding dementia. Utilising new analytical techniques in machine learning and blending with models from neuroscience and social sciences will aid deciphering of variability in origins, mechanisms and clinical expression of dementia. To illustrate this we utilise the PROTECT cohort (25000 people aged 50 and over) focusing on 3 key risk factors for the development of progressive cognitive decline and dementia: depression, mild behavioural impairment and psychosis. We will examine the impact on progressive cognitive decline, the potential protective effects of cognitive training and the predictive value of polygenic risk scores for Alzheimer's disease, depression and schizophrenia in identifying individuals at risk of progressive cognitive decline.

### **P134: Dementia in a case of bipolar disorder**

Kuei-Yu Liang, Chun-Chi Ho, Pai-Yi Chiu

Objective: Little is known about the longitudinal trajectory of cognitive deficits during the course of bipolar disorder. Studies have demonstrated that patients with bipolar disorder have greater risk for developing dementia. However, the diagnosis of dementia is often difficult to confirm in older adults with a history of bipolar disorder. We describe a patient with bipolar disorder that presented cognitive impairment, in whom neurocognitive disorder was considered.

Method: Case report.

Result: A 59-year-old married man has a 26-year history of type 1 bipolar disorder. Before the age of 50 years, he was functioning well between manic episodes. After manic episode in 2015, he had been stabilized on a combination of lithium, valproate, and zotepine.

In the following 15 months, the patient was found to be forgetful. He lost his money and personal belongings at home. He showed difficulty in reading and writing. He became less sociable and got lost occasionally. He also spent more time finishing simple chores. In addition, intermittent hand tremor and impaired posture were noticed.

The patient was admitted in 2017 regarding cognitive impairment, labile mood, delusions and abnormal movement.

Neuropsychological assessment demonstrated impairment in memory, orientation, attention, language, and executive functions. Laboratory tests showed no definite abnormality. Brain MRI revealed global cortical atrophy with mild atrophy of the hippocampus. A SPECT scan disclosed hypoperfusion in bilateral parietal-temporal areas and normal dopamine transporter activity in bilateral striatum.

The evidence favored possible Alzheimer's disease and neuroleptic induced Parkinsonism. Therefore, donepezil was prescribed from low dose and antipsychotic was shifted to quetiapine. In the following 2 years, the patient's cognitive function didn't decline under donepezil 10 mg/day (MMSE score ranged between 20 and 24 points). There was no relapse of mood episode and the movement disorder also improved to minimal hand tremor.



Conclusion: Differentiating between mood disorder with cognitive symptoms and neurocognitive disorder is a challenge. Likewise, the appropriate treatment of cognitive symptoms in bipolar patients has not been investigated comprehensively. In the patient presented, cholinesterase inhibitor was beneficial for cognitive difficulties and BPSD. Further research is needed to explore strategies for differential diagnosis and treatment of such patients.

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### **P135: Dementia in primary care and doctor-patient-carer interactions: A qualitative study protocol**

Conceição Balsinha, Steve Iliffe, Sónia Dias, Maria I. Santos, Maria J. Marques, Vítor Ramos, Teresa Maia, Gabriel Ivbijaro, Manuel Gonçalves-Pereira

Background: Primary care services deserve an important role in dementia (including task-sharing with specialized services in diagnosis disclosure, management of neuropsychiatric symptoms and family needs). GPs could be more active in developing communication and psycho-social intervention skills, liaison with neurology and psychiatry (Balsinha et al, 2019). Some of us previously analyzed Portuguese primary care consultations and conducted focus groups of health/social care professionals. Preliminary results indicate that dementia is rarely addressed (health professionals provide little information; dementia is regarded by carers as a problem for specialists, not generalists (Balsinha, unpublished). A particular challenge is the involvement of a third person (informal carer) in patient-doctor encounters. To our knowledge, there is no evidence about interactions from live-recorded consultations (where triad dynamics should be better understood, as related to clinical outcomes) (Fortinsky, 2001). We aim to: 1) describe medical encounters in Portuguese primary care, focusing on triad interactions in dementia; 2) qualitatively analyze these interactions' barriers or facilitators; 3) run a discussion group of clinical experts, stakeholders, and users/carers to inform best-practice recommendations.

Design/methods: Task 1 (preparation): we will choose family practices according to socioeconomic status of the local population, and use purposive sampling (10-12 consultations). Ethical and legal approval will be needed. Task 2 (fieldwork, first data analysis): perspective and methods of discourse analyses will be used, with NVIVO® software. Task 3 (focus groups, expert seminar, second data analysis): task 2 results will be validated (professionals, carers, users whenever feasible). Thematic analysis will combine inductive and deductive coding strategies. Focus groups' results will undergo second-step validation in an expert seminar.

Discussion: The complexities of physician-patient-carer encounters in primary care are overlooked in research, albeit related to important outcomes (e.g. falls). This hinders the quality of dementia healthcare overall. We expect to expand the evidence-base on the role of Portuguese primary care in dementia (in this research framework, Portugal is a case-study, the study having potential to generate ideas to be tested elsewhere). Qualitative methods are first-choice here, given their potential to generate hypotheses and to directly analyze complex relational interactions. Results may inform quantitative large-scale research projects to yield generalizable evidence.

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### **P136: Familial Amyloid Polyneuropathy - in addition to the organic disease**

Diana Cruz e Sousa, Sara Ramos, João Campos Mendes

Introduction / Objectives: FAP is also known as Paramyloidosis or common sense as "Foot Disease". It was described for the first time in Portugal (1952), and from there it began to be recognized in other countries.

It is a rare, autosomal dominant disease. It occurs by deposition of amyloid in tissues with multisystemic and progressive involvement. It is associated with the development of dementia.

The first symptoms appear at 22-38 years and have a reduced average Life expectancy (4 - 14 years).

This disease has a great impact on the emotional and relational life of the patients, making them more vulnerable emotionally, and psychological decompensations may occur due to the characteristics associated with the evolution of the disease and the elements of uncertainty present in their lives. This vignette intends to highlight the psychological implications of Familial Amyloid Polyneuropathy (FAP), namely the emergence of progressive dementia.

Methodology: Presentation of clinical vignette and non-systematic review in Pubmed.

Case Report: F, 57 years old, with FAP (liver transplantation in 1994). No psychiatric history prior to 2016, when he began to suffer from a loss of autonomy with relative stability until January 2018, when he had the first contact with Psychiatry with hospital admission, after 2 previous visits to the Emergency Department per change table (with disorganization, psychomotor restlessness, confusion, soliloquies, delusional and hallucinatory activity, distractibility, confabulations, as well as behavioral disinhibition). Performed Mini-Mental State Exam (MMSE) 13. High with diagnosis of Psychotic for consultation of Psychiatry of connection.

New hospital admission in December 2018 by context similar to the previous one. High with hypothesis of diagnosis of Dementia Syndrome and medicated with Anti-demential. She remained stable until January 2019 when she is admitted again, this time in the department of psychogeriatrics. He performed a new neurocognitive evaluation whose results were compatible with moderate-stage dementia (MMSE 11). High for consultation of Psychiatry with the most probable diagnostic hypothesis of Dementia Syndrome secondary to the deposition of leptomeningeal amyloid with secondary behavioral changes.

Discussion / Conclusion: PAF is a rare disease and is associated with early death, however, liver transplantation allows longer survival to these patients, which does not always mean quality of life.

The emergence of patients with dementia associated with FAP is thus a reality to consider.

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### **P137: Interaction between psychosocial and biological factors: insight from the stress model**

Rabih Chattat, Giovanni Ottoboni

Both the onset and the progression of dementia are influenced by different, interactive factors (genetic, epigenetics, biological, psychological, social and environmental). However, their influence manifest itself along the entire life span, even far before the disease onset.

The way the factors interact offers useful insights to explain the individual variability in the onset and in the trajectories of disease.

A literature synthesis regarding the role of stress and trauma as a risk factors across the life span and its impact on brain. The potentiality of psychological and social intervention in moderating stress impact and reducing biological consequences on the brain will be discussed.

The research has already outlined the importance of taking into account early life events and trauma as risk factors for the onset of dementia. Stress and trauma have direct influence upon the plasticity of the brain by modulating both synapsis connectedness and neurogenesis in different brain area, and indirectly, by modulating the development and the progression of other, often related diseases (e.g., depression, inflammation and cardiovascular disease).

On the other hand, the disease onset can be considered as a trauma itself: so that the coping strategies the person with dementia can deploy modulate the course of disease, its progression, the impact of the disease itself and related distress in turn.

Further, complementary, evidence shows that interventions targeted to support stress management and to promote social health- through social support and social inclusion- are capable to modulate the biological impact by acting on physiological as well psychological consequences.

In the light of these reports, the role of stress offer a functional framework from where to develop models for research and intervention capable to reconcile the complex etiological aspects featuring dementia, by adopting broaden, multifactorial, approaches.

### **P140: Korsakoff syndrome, vascular dementia and chronic subdural hematoma: a case report.**

Jorge Augusto Alves Silveira, Camila Truzzi Penteadó, Vitor Bresghello Cavenaghi, Débora Pastore Bassit, Jefferson Folquitto

Dementia is a syndrome characterized by the progressive development of multiple cognitive deficits that culminate in impairment of functionality. Its etiology may be primary, neurodegenerative, or even potentially reversible (such as alcoholic and extrinsic encephalopathies). Frequently we find mixed etiologies, where early diagnosis and appropriate treatment would lead to a decrease in the prevalence of possibly reversible cases.

The purpose of this report is to present a dementia patient with potentially reversible etiologies that, if previously addressed, could present a different outcome.

A.V, 79 years old, male, black, retired civil engineer, longtime alcoholic, hypertensive in irregular treatment, sedentary, living alone and with low family support. For 2 years, he has presented cognitive impairment of amnesic and important attention, uninhibited behavior, confabulations, irritable mood, sometimes aggressive, self-care impairment, perambulation, insomnia and periods of time-space disorientation. Glasgow scale 15, no focal neurological signs or meningeal signs, no tremors. Mini Mental State Examination (MMSE) 13 / 30. Initial screening examinations showed extensive left fronto-parietal chronic subdural hematoma (HSDC) and microangiopathy lesions (FAZEKAS 2). No significant laboratory changes. It was subjected to trepanation for the HSDC. Evolution without intercurrents. In the postoperative period, the neuropsychiatric symptoms were treated with olanzapine and donepezil, in addition to the replacement of thiamine and enalapril 30mg / d, with improvement of agitation, hostility and sleep pattern. Postoperative MMSE 21/30.

Although a reversible cause may be the diagnosis of dementia, the fact is that the disease that is producing dementia is still being diagnosed lately. Aggressive health policies warning about alcohol and drug abuse and cranial trauma as modifiable risk factors for dementia can improve patient awareness and family support, as well as health strategies for this vulnerable population.

#### **P141: Old Age Persons with Dementia in Two Portuguese Psychiatry Inpatient Units**

Rui Pedro Albuquerque, Joana Isaac, Ana Rita Moura, Manuel Gonçalves-Pereira, Luís Sardinha, Ana Matos Pires

**Background and objective:** Dementia usually increases length of stay (LOS) of patients hospitalized for medical reasons. In Portugal, there is increasing pressure to admit patients with behavioural and psychological symptoms of dementia (BPSD) in acute psychiatry units, but also concerns that this may unduly extend LOS. Overall, old-age persons with dementia (PwD) needs remain unmet, and little is known about how healthcare services could be improved. We aim to study the admissions of PwD (as compared to other geriatric patients) in different Portuguese psychiatry units.

**Methods:** We studied all patients 65+ years admitted to two general hospital acute care psychiatry units for 18 months, from January 2018 to June 2019 (Unit A: central hospital, in Lisbon, 25 beds; B: inner country city hospital, 12 beds). Collected data included: diagnosis, age, gender, reason for hospitalization, LOS.

**Results:** In unit A, there were 44 admissions during the study period (median LOS=29 days for PwD vs. 24 days for other old-age patients;  $p=0.300$ ). In unit B, there were 41 admissions (median LOS=8.5 days for PwD vs. 16 days for other old-age patients;  $p=0.128$ ). For PwD, BPSD were the main cause of admission in both units.

**Discussion:** Despite the current 'dementia epidemics', psychiatric admissions of PwD remain restricted. In this study, a dementia diagnosis was not associated with higher LOS in either unit. This sort of finding could somehow contribute to lessen concerns about the access of PwD to hospital admissions. On the other hand, LOS was surprisingly low in unit B (a plausible contributor being the greater social/family support in this country setting for a considerable proportion of patients).

Nevertheless, our results are not generalizable, not even at regional level, and interpretations call for prudence. Anyway, the mission and logistics of psychiatry units should be rethought concerning dementia, and the need for providing respite care in non-acute facilities should be equated.

#### **P142: Quality of life in nursing home residents with dementia and very frequent agitation, vocalizations or physical aggression.**

Annemiek Bielderma, Annelies Veldwijk-Rouwenhorst, Britt Pelgrims, Martin Smalbrugge, Sytse Zuidema, Raymond Koopmans, Debby Gerritsen

**Introduction -** Agitation is one of the neuropsychiatric symptoms that has the highest prevalence in nursing home residents with dementia. Vocalizations and physical aggression are expressions of agitation, and are related to distress in both the resident and the caregivers. The aim of this study is to analyze the association between the frequency of agitation, vocalizations and physical aggression and quality of life in nursing home residents with dementia.

**Methods -** In this cross-sectional explorative study, combined data from three studies were used, resulting in a dataset of 715 nursing home residents with dementia. The frequency of agitation, vocalizations, and physical aggression were defined using the Cohen-Mansfield Agitation Inventory. The Qualidem was used to assess quality of life in all residents. Data of residents with very frequent agitation, vocalizations or physical aggression were compared with data of residents with less frequent agitation, vocalizations or physical aggression. Linear mixed model analyses were used to analyze the association between the frequency of agitation and quality of life.

**Results -** In general, very frequent agitation was associated with a lower Qualidem total score (difference -10.3,  $p<0.001$ ) and with lower scores on five out of six Qualidem subscales ('care relationship', 'positive affect', 'negative affect', 'restless tense

behavior' and 'social isolation'). Very frequent vocalizations were associated with lower scores on four subscales ('positive affect', 'restless tense behavior', 'social relations' and 'social isolation') and with a lower Qualidem total score (difference -2.7,  $p=0.011$ ). Very frequent physical aggression was associated with lower scores on two subscales ('care relationship' and 'positive affect') and with a lower Qualidem total score (difference -7.0,  $p<0.001$ ).

Conclusion - These exploratory results indicate that very frequent agitation, very frequent vocalizations, and very frequent physical aggression were all associated with a lower overall quality of life. However, separately, these neuropsychiatric symptoms were associated with different quality of life domains. Given these findings, distinguishing between the different expressions of agitation is relevant in daily care practice.

#### **P143: Social factors in cognitive decline and dementia; an integrated study of biomedical and social data**

Myrra Vernooij-Dassen, Rene Melis, Marieke Perry, Isabelle Van Dervelpen, Arfan Ikram, Meike Vernooij

Dementia is a multifactorial condition with a discrepancy between neuropathology and clinical characteristics. Integration of dementia research silos might shed more light on this complex condition. Better understanding of this complex condition may require integration of dementia research silos. Research might therefore benefit from connecting biological, social and cognitive theories into a holistic disease developmental model. The concept of social health might help to refine this model. We hypothesize that social health impacts brain and cognitive reserve. Social health reflects competencies to participate in social life and the influence of social interactions on the dynamic balance between capacities and limitations. The overall aim of our recently started study is to identify the relation of social health with cognitive functioning and the underlying neural substrate in the development of cognitive impairment in humans and in mice. Neural substrate measurements in humans include structural brain changes detected by magnetic resonance imaging (MRI) in 4000 persons (mean age 59 years) in a population-based cohort study. In mice models a wide variety of cognitive tests will be used. Tests include social participation and social avoidance. An integrated theoretical model, results of pioneering integrated dementia research and the development of social health indicators will be presented.

#### **P144: The brain morphology and the reaction to the cerebrospinal fluid tap test in idiopathic normal pressure hydrocephalus without objective gait disturbance.**

Takashi Suehiro, Hideki Kanemoto, Kenji Yoshiyama, Maki Suzuki, Takuya Matsumoto, Kyouzuke Kakeda, Sumiyo Umeda, Kazunari Ishii, Etsuro Mori, Manabu Ikeda

Background: Idiopathic normal pressure hydrocephalus (iNPH) is one of the few treatable neurological diseases and well-known to be characterized by triad symptoms of gait disturbance, cognitive impairment and urinary dysfunction. Previous studies reported only around 60% of iNPH patients had all of the triad symptoms and most of the patients had gait disturbance. Because most of previous studies included iNPH patients with gait disturbance, the clinical and brain morphological features of iNPH patients, who had cognitive impairment and no objective gait disturbance, have not been clarified.

Methods: We recruited 16 possible iNPH patients with cognitive impairment (a cognitive score of iNPH grading scale  $\geq 2$ ) and without objective gait disturbance (a gait score of iNPH grading scale  $< 2$ ) (iNPH-G-C+ group), 10 possible iNPH patients with gait disturbance and without cognitive impairment (iNPH-G+C- group), and 16 suspected iNPH patients with no objective triad symptoms (iNPH-NOS group). We quantitatively assessed the volumes of the regions in brain MR images which were known to be highly related to iNPH, such as ventricle systems (VS), Sylvian fissures (SF), sulci at high convexity and the midline (SHM), as well as hippocampus. In addition, the ratios of the response to cerebrospinal fluid tap test were compared between iNPH-G-C+ and iNPH-G+C- group.

Results: The relative volumes of VS, SF, and SHM, each calculated by normalization to the intracranial volumes, were equivalent among three groups. In contrast, the relative hippocampal volumes between iNPH-G-C+ were significantly smaller than those of iNPH-G+C- (mean [SD] = 0.0096 [0.00013] vs 0.0100 [0.00016],  $p=0.044$ ), and there was the trend of differences between iNPH-G-C+ and iNPH-NOS (mean [SD] = 0.0096 [0.00010] vs 0.0099 [0.00008],  $p=0.091$ ), with one-way ANOVA and post-hoc Tukey-Kramer HSD tests. Chi-square test revealed no significant differences in the ratio of the tap-test response between iNPH-G-C+ and iNPH-G+C- (9/14 (64%) vs 7/10 (70%),  $p=0.770$ ).

Conclusions: The hippocampal volumes in iNPH-G-C+ group were smaller than the other groups, whereas, the tap-test response in iNPH-G-C+ group may be equivalent to the response in iNPH-G+C-. The cognitive impairment in iNPH associates with hippocampal atrophy

#### **P145: The Portuguese participation in the EU-JPND Actifcare study**

Manuel Gonçalves-Pereira, Maria J. Marques, Conceição Balsinha, Bob Woods, Frans Verhey

Introduction: For people with dementia and their relatives across Europe, there are difficulties and inequalities regarding timely access to community formal care (e.g. day centers, home care). The EU-JPND Actifcare project analysed access to and utilization of formal services, as related to unmet needs for care and quality of life in eight European countries. Actifcare is an acronym for 'Access to Timely Formal Care in dementia'. We describe the Portuguese participation -FCT-JPND-HC-



0001/2012- focusing on baseline results of the cohort study (to be discussed together with qualitative findings and preliminary results of the longitudinal analyses).

Methods: The protocol is available elsewhere (Kerpershoek et al, 2016). Literature reviews, qualitative explorations and a one-year follow-up cohort study were conducted ([www.actifcare.eu](http://www.actifcare.eu)). In Portugal, we ran 5 focus groups of people with dementia, their carers and staff, 25 in-depth interviews (including 4 policy-makers), and 95 phone interviews. The Portuguese sub-sample of the cohort study consisted of 66 dyads of community-dwelling people with mild to moderate dementia and no significant use of formal services, and their informal carers. Measures included the Camberwell Assessment of Need for the Elderly and the Resources Utilization in Dementia (Gonçalves-Pereira et al, 2019).

Results: At baseline, people with dementia had unmet needs (mean 1.1; SD 1.7), mainly regarding company (23%), psychological distress (20%), and daily activities (14%). Family caregivers spent 150 minutes/day (median) providing support, and 44% had psychological distress unmet needs. Problems with access to or use of formal services, when present, were frequently due to attitudes or lack of knowledge of any or both members of the dyad. Twelve dyads were lost to follow-up.

Discussion: Regarding the cohort study, recruitment was challenging as mild dementia is not early diagnosed. Levels and type of unmet needs found in some participants would call for formal support, were it not for problems regarding access or use. Overall there are difficulties regarding timely access and effective use of formal care, along with relevant unmet needs, and an impact on quality of life. The project results are being published, having informed best-practice recommendations regarding access to and use of community formal services in dementia.

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#### **P146: Neglect, Abuse and Violence in the Late Life**

Antonia Ferrer, Pablo Navalón- Rodríguez, Lydia Giménez-Llort

Five major fields of medicine: cardiovascular disease, pharmacology, oncology, liver diseases and osteoporosis are banners for Gender Medicine. These fields demonstrate the relevance of considering the differences between men and women in terms of prevention, clinical signs, therapeutic approach, prognosis, psychological and social impact. Now, it is also the turn that Gender Medicine meets psychogeriatrics. For this purpose, this Symposia will introduce the conceptual frames of Gender Medicine, it will put them in context of the old age, with special focus on psychogeriatric. Thereafter, we'll gather together to present our current research, addressing three topics of growing relevance due to the aging of population, where woman and/or male are key actors in psychogeriatric scenarios. Loneliness and False stigmas in frequent attenders of primary health care centres, the increased susceptibility of Nigerian women to the impact of diabetes-and-dementia crosstalk and, finally, neglect, abuse and violence exerted on the elderly, a problem of social magnitude.

Neglect, abuse and violence are a matter of social magnitude unfortunately also laying in geriatric scenarios. According to WHO, one in ten elderly people have suffered violence in the last month. Classically, this problem concerned caring for dependents. However, growing evidence aware about the abuse of a partner in old age. The prevalence of this type of violence, mostly exerted towards the women, is very variable, ranging from 6-18% to 25%. The age-dependent characteristics of these women exert a decisive influence on their vulnerability: greater emotional, physical, economic dependence on the aggressor, but also greater pressure of cultural and socio-family aspects. In addition, older women present barriers when requesting help, contributing to the fact that there are fewer judicial interventions than in younger couples. Within these obstacles, we find internal barriers; as the desire to protect the family, the value of secrecy in this sector of the population, feelings of resignation after years of abuse or feelings of vulnerability against the couple. External barriers are also determinant; as little family support for reporting, religious pressure, the value of marriage, distrust of the judicial system or minimal social resources for their problem. Here, we analyze this problem with case reports illustrating usual scenarios/situations. We also present the status-quo of this problem two decades after the European project INTERGEN, a multidisciplinary team gathered together in Barcelona to address the abuse to the elderly. The project developed instruments and tools to facilitate health professionals, social services and society, to prevent, detect and intervene the victims: transnational consensus on the concept of elder abuse; definition of indicators and establishment of risk factors; elaboration of informative material destined to the population of the elderly and to the population in general; development of a professional guide, including strategies and resources of a psychosocial and health nature for professionals involved in the field of the elder population. The growing aging of the population forces us all to continue working to achieve a common language that allows us to prevent, detect and intervene to reduce this type of violence to the elderly.

**P147: The Moon Effect: Individual and Social Impact of Aging in Men and Women on the Third Millennium**

Lydia Giménez-Llort

Five major fields of medicine: cardiovascular disease, pharmacology, oncology, liver diseases and osteoporosis are banners for Gender Medicine. These fields demonstrate the relevance of considering the differences between men and women in terms of prevention, clinical signs, therapeutic approach, prognosis, psychological and social impact. Now, it is also the turn that Gender Medicine meets psychogeriatrics. For this purpose, this Symposia will introduce the conceptual frames of Gender Medicine, it will put them in context of the old age, with special focus on psychogeriatric. Thereafter, we'll gather together to present our current research, addressing three topics of growing relevance due to the aging of population, where woman and/or male are key actors in psychogeriatric scenarios. Loneliness and False stigmas in frequent attenders of primary health care centres, the increased susceptibility of Nigerian women to the impact of diabetes-and-dementia crosstalk and, finally, neglect, abuse and violence exerted on the elderly, a problem of social magnitude.

The medicine of the third millennium breaks the classical schemes of the unique 'one size fits all' model. Thus, most of our patterns are often referred to males (but not always) considering that what has been described for one sex/gender can be translated into the other sex/gender with minor changes. Common bias or blindness are due either to assume that both sex/genders are equal where there's clear evidence of differences, and oppositely, to assume that differences exist in spite of the patterns being quite similar. The Moon effect warns about all of this, that 'we only know the half of it'. Similarly, the so-called Bikini effect describes the archaic bias of framing that restricts our understanding of gender differences in the diseases where there is clearly a hormonal, reproductive or genetic conditioning. Five major fields of medicine: cardiovascular disease, pharmacology, oncology, liver diseases and osteoporosis are banners for gender medicine. These fields demonstrate the importance of considering the differences between men and women in terms of prevention, clinical signs, therapeutic approach, prognosis, psychological and social impact. Now, it is also the turn that gender medicine meets psychogeriatrics.

**P151: The reminiscence workshop in The Orillas del Duero meeting center. A experience in Spain.**

Esther Parra Vidales, Juan Luis Munoz Sanchez, Manuel Angel Franco Martin

**Introduction:** The knowledge on support for community-dwelling people with dementia and their caregivers is crucial to improve support, and to help people adjust to living with the consequences of dementia, this building resilience for the future. The Orillas del Duero meeting center started autumn 2017 in Zamora. Since that year there have been several workshops, who most popular was the reminiscence workshop in the History and Ethnographic Museum of Zamora. Here sessions of cognitive stimulation were conducted on the different stages of life through the senses: sight hearing, smell, taste and touch. The aim of this study is to assess the satisfaction of people with dementia and their caregivers in the reminiscence workshop.

**Methods:** This goal requires the employment of a quantitative methodological strategy. The gathering of information has been carried out through an adapted questionnaire. This groups has been developed under the Orillas del Duero Meeting Center. 54 participants completed the form to define how they felt during the workshop.

**Results:** 20% of the participants were male, while 77% were female. 30% of the participants were between 70 and 74 years old. When asked if they found it fun, 88.9% said that a lot and 77.8% made them feel cheerful and calm. In 74.1% it helped him feel more autonomous and 77.8% indicated that it helped them to improve their social life by meeting people. Finally, people with dementia and their caregivers valued in 88.9% that the workshop was very beneficial for their health, helping them to remember who they were and giving them an identity in society.

**Discussion:** This research represents a step further towards to improve caregiving in people with dementia and their caregivers and the quality of life of these population. This workshop has proven to be an effective strategy to increase social interaction between people with dementia and their caregivers.

**Keywords:** Psychosocial, meeting center, reminiscence, dementia, caregiver

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# Pre-Congress Programs

## PC01: Primary Care Mental Health in Older People

### *Workshop Overview*

In the context of the rapid growth in numbers of the older adult population, the mental health of older adults has become a huge challenge for all concerned, especially with the high prevalence of mental health issues in this group. The ageing world population needs to be central in all policies and programmes in order to enable health systems to be more equitable, inclusive and fair. Services need to be designed to respond to the mental health needs of older adults; educational programmes need to be offered for professionals to improve their specific skills to treat and care for this important group.

At any age mental health is under-treated, even in many developed countries. With age, the problem is magnified, often because primary care settings lack confidence in addressing mental health in an aging and often frail population.

- Mental health care for older people: the scale of the problem (Carlos A. de Mendonça Lima)
- Dignity in the care of older people with mental disorders (Gabriel Ivbijaro)
- Building a collaboration with the Primary Care team: the experience in Galicia (Sociedad Española de Medicina Familiar y Comunitaria – SemFYC)
- Management of comorbidity and multimorbidity at Primary Care (Gabriel Ivbijaro)
- Management of dementia at Primary Care (Carlos A. de Mendonça Lima)
- Management of delirium at Primary Care (Horacio Firmino)
- Management of bodily distress syndrome (BDS), bodily stress syndrome (BSS) and health anxiety in older adults (Gabriel Ivbijaro)
- Management of bereavement of older people at Primary Care (Mercedes Fernández-Cabana, Raimundo Mateos)

## PC02: 6<sup>th</sup> International Conference on Capacity

### *Workshop Overview*

The 6th International Capacity Conference held in conjunction with Capacity Australia, is the culmination of over a decade of continued commitment from IPA to establishing and developing excellence in the field of capacity and human rights. Continuing the popular tradition of previous IPA capacity programmes, we will draw together speakers from multiple regions to update us on capacity and human rights issues that confront us on a daily basis as both clinicians and medicolegal experts. We will explore complex decision-making issues related to relationships (including marriage and divorce), will-making and financial capacity, and capacity at the end of life, including capacity related to voluntary assisted dying, as well as suicide and undue influence. Novel situations that confront us include decision making around the use of technology in health care, as well as the concept of professional capacity. We will also introduce a new interactive mode of presentation to facilitate audience participation: "Ask the capacity expert panel."

- Overview of new and exciting developments in capacity in voluntary assisted dying, divorce and marriage, and finances/company directorship (Carmelle Peisah)
- Capacity, artificial intelligence and home technology (Jay Luxenberg)
- An update on testamentary capacity (Jane Casey)
- A unique educational programme teaching testamentary capacity to psychiatric residents (Sanford Finkel)
- An update on capacity and sexuality (Oluwatoyin Sorinmade)
- Professional capacity: health and cognitive screening for ageing doctors (Betsy Williams)
- Capacity issues at the end of life in Romania (Nicoleta Tataru)
- Capacity issues in Spain (Julio Antonio Guija)
- Suicide, undue influence and elder abuse (Anne Wand)
- Ask the expert and the audience



## PC03: Improving Caregiver Interventions: New Clinical Approaches and Research Strategies

### *Workshop Overview*

Interventions for caregivers of persons with dementia (PwD) have, over the past 40 years, become a major focus in research and implementation in the community. Despite considerable progress in both basic and intervention research on caregivers, treatment effects remain relatively small. Most studies use variations of stress management and skill building strategies, which have generally been associated with positive outcomes, but the field has not addressed fundamental limitations in these approaches nor considered alternative paradigms that might yield more positive outcomes. This workshop will briefly review the current state of the field, identify strengths and limitations, and suggest new directions in design of interventions and intervention research. Issues to be discussed include: identifying appropriate outcome measures, use of adaptive strategies for assigning treatment modules, evaluating implementation of treatment modules and their proximal effects on caregivers' behaviour and affect, and the critical role of respite and how to evaluate it. The workshop will also discuss approaches that incorporate both caregiver and PwD.

### Steven Zarit, Raimundo Mateos

- State of the Field: Why We Need to Move Beyond the Current Paradigm for Caregiver Interventions and Research
- The Problem of Outcomes: Why the Outcomes We Use Are not Appropriate
- A Modular Approach to Interventions: Design, Implementation, and Selection of Appropriate Outcomes
- Respite as a Critical Support for Caregivers
- Design Approaches for Respite: "The Daily Stress and Health of Caregivers Study" as an Example
- Dyadic Interventions: Caregivers and Persons with Dementia Viewing the Future Together
- Implications for Caregiving Situations not Involving Dementia
- Discussion of Possible Applications

## PC04: Updates/ Controversies in Alzheimer's Disease: Risk Factors, Protective Factors and Treatments

### *Workshop Overview*

This Pre-Congress Workshop will focus on emerging consensus vs controversial data relative to risk factors and protective factors in Alzheimer's Disease. (AD)

The promising use of various neuro-modulatory approaches will be examined.

Controversy relative to the use of various herbals, vitamins, and supplements in prevention/treatment of AD will be elucidated as well as regulatory approaches vis a vis medical foods for the treatment of AD.

Lastly, the emerging role of the brain's glymphatic system and the use of blood products to treat advanced AD will be highlighted.

- Risk Factors and Protective Factors (George Grossberg)
- Neuro-Modulatory approaches in Alzheimer's Disease (David Beck)
- Role for vitamins and supplements in Alzheimer's Disease; what the evidence shows (Jay Luxenberg)
- Breaking Research in Alzheimer's Disease (Rita Khoury)

## **PC05: Measurement of Challenging behavior (CB); views from different perspectives**

### ***Workshop Overview***

The behaviour of people with dementia has been a focus of both research and dementia care for decades, particularly behaviour that is considered 'challenging'. This challenging behaviour has appeared difficult to demarcate and define, resulting in many approaches and views about what it is, how it is called (challenging behaviour, neuropsychiatric symptoms, behavioural and psychological symptoms), which consequently has resulted in many different measurement instruments. For exploring how researchers can improve their contribution to the knowledge about challenging behaviour and to its treatment, we will share viewpoints towards measurement of challenging behaviour from different professional disciplines. Subsequently, we will discuss possibilities for consensus on how to improve measurement of challenging behaviour and what properties (e.g., severity, frequency, distress for patient and/or environment) to include, which we aim to publish as an editorial.

- Debby Gerritsen will introduce the subject and discuss a psychologist's view
- Rebecca Palm will discuss a nurse's view
- Carmelle Peisah will discuss a psychiatrist's view
- Patricia de Vriendt will discuss a social worker's/ occupational therapist's view

## PC06: International initiatives to address inappropriate psychotropic use in long term aged care – learning from each other

### Workshop Overview

Mental health conditions are very common in long-term aged care, with incidence increasing. Over half of residents have dementia. The majority will experience behavioural and psychological symptoms, including agitation, psychosis and sleep disturbance. Although professional guidelines endorse detailed assessment of these symptoms and non-pharmacological strategies as the first treatment approach, many residents are treated with psychotropic medication despite modest effectiveness alongside substantial risk of adverse effects such as falls and stroke. Many residents without dementia also suffer from anxiety and sleep disturbance. Again, non-pharmacological strategies are recommended as initial treatment yet psychotropics are often prescribed.

This workshop will outline and contrast intervention approaches of several countries, the Netherlands, Australia, the U.K and the U.S. to reduce inappropriate psychotropic use in long term care. The benefits and barriers associated with each intervention approach will be identified and discussed, with the ultimate aim of integrating key learnings from international researchers to address this important issue.

- The RID (Reduction of Inappropriate Psychotropic Drug Use study). A randomized cluster controlled stepped wedge study of the implementation of facility tailored complex interventions to reduce inappropriate drugs (Claudia Groot Kormelinck and Charlotte van Teunenbroek)
- The psychotropic drug monitor web application. A simplified version of the APID to measure appropriateness of psychotropic drugs (Sarah Janus/ Naomi Rasing)
- The PROPER study (Raymond Koopmans)
- Discontinuing inappropriate medication in nursing residents/ DIM-NHR study (TBD)
- The national expansion of the RedUSE program. A quality improvement strategy approach to reduce psychotropic reliance in 150 aged care homes around the country (Juanita Westbury)
- Clinical outcome sub-study of the RedUSE program (Daniel Hoyle)
- The HALT trial (TBD)
- The Empowered Initiative (Carmelle Peisah)
- The WHELD/FITS initiative (TBD)



## PC07: PAIN in Older Adults with Cognitive Impairment especially Dementia

### *Workshop Overview*

The number of older adults will increase considerably in the next decades. Since age is the main risk factor for dementia and pain, the number of patients with both dementia and pain will also grow. It seems already now evident that pain is grossly under-diagnosed and under-treated in dementia. When dementia and pain concur, their impact on the European society multiplies and asks for transnational solutions. The workshop is presented by a panel of speakers representing EU COST-Action TD1005 "Pain assessment in cognitive impairment, especially dementia". It is a training activity for health professional and researchers in the field of psychogeriatrics aimed to improve their knowledge on guidelines and current use of tools available, and their capacity in the assessment and management of pain in elderly people with cognitive impairment, especially in the dementias.

- Current practices, use of tools, guidelines and policies for pain in cognitive impairment, especially dementia (Patricia Schofield)
- Clinical challenges in pain assessment and management in older and cognitively impaired adults (Wilco Achterberg)
- Nociceptive evoked responses as a tool to explore pain pathways in cognitive impairment (Marina de Tomaso)
- The evolutive pathway between pain and olfactory perception (Sara Invitto)
- Translational research modelling pain in aging, cognitive impairment and dementia (Lydia Giménez-Llort and Chaim g. Pick)
- A palliative care approach to pain management for people with dementia towards the end of life (Elisabeth Sampson)

## PC08: Young Onset Dementia

### **Workshop Overview**

People with their first symptoms of dementia before the age of 65 years are often referred to as people with Young Onset Dementia (YOD). It is estimated that 6-9% of people with dementia are diagnosed with YOD. People living with YOD have specific needs and characteristics for which tailored care is needed. In this workshop presenters from different countries (Netherlands, Germany, Norway, United Kingdom, Brazil) will share research on a broad range of issues regarding definition and nomenclature of YOD, palliative care, coping with transitions in life, lived experience of receiving a diagnosis and accuracy of diagnosis, and differences in the clinical profile between carers of people with young and late onset Alzheimer's disease.

- Give Young Onset Dementia a face: A Delphi-study on definition and nomenclature of YOD (Dennis van de Veen)
- Special features of palliative care in people with advanced young onset dementia: results from the German EPYLOGE-study (Janine Diehl-Schmid)
- Coping with transitions in life along the progression of dementia: A four-year longitudinal narrative study of lived experiences of single younger people with dementia (Aud Johannessen)
- Improving diagnosis and post-diagnostic support for younger people living with dementia (Janet Carter)
- Differences in the clinical profile between carers of people with young and late onset Alzheimer's disease (Marcia Cristina Nascimento Dourado)