Mental Health and Dementia

RESEARCH AREA OVERVIEW
Dementia is becoming one of the biggest burdens of our society with the aging population. There is an urgent need to improve our clinical and research understanding of the underlying disease in dementia. Dementia research topics at UEA take therefore a multi-disciplinary approach, linking bedside to bench research approaches.

Current Research Opportunities

- Mental health in the elderly – Professor Chris Fox
- Brain changes in dementia – Professor Michael Hornberger
- Nutrition and dementia – Professor Anne-Marie Minihane
- Psychology of dementia – Professor Kenneth Laidlaw

Mental health in the elderly

Our research focuses on 3 strands: cause, care and interventions in dementia in primary, secondary, tertiary and social care. Current projects include (1) ‘Perfected’ which is developing an enhanced recovery pathway (care), (2) the use of large data sets allows us to extract causative factors in dementia (cause) and (3) develop prevention interventions trials such as use of minocycline and use of assistive technology (intervention).

We have literature reviews to develop a new comorbidity tool for use as an App or tech platform-skills opportunity- which advances students skills on literature analysis. We have qualitative projects in the PERFECTED study of care in hospital in dementia and can provide data analysis from 3 projects funded by NIHR and Alzheimer’s society looking at the harms and benefits of commonly prescribed medications and screening for dementia. These use CPRD and CFAS datasets. Our website provides more detail. www.uea.ac.uk/dementia-research-and-innovation.

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Brain changes in dementia

Clinical symptomology and underlying brain changes are closely linked in dementia. Our research investigates the interactions of these clinical symptoms and their neural correlates, with a particular focus on behaviour, memory and eating changes via state-of-the-art neuroimaging methods. In particular we are interested in identifying the shared and unique clinical and imaging features across the most common dementias: Alzheimer’s disease, vascular dementia, frontotemporal dementia and Dementia with Lewy bodies.

We have strong clinical links with neurological and old-age psychiatry clinical services in the region. Our research findings inform primary to tertiary clinical services and is particularly targeted towards better differential diagnosis and improved symptom prediction and management.

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Nutrition and dementia

Nutrition is a significant determinant of cognitive development and decline throughout the life-course. A number of dietary components, including marine n-3 fatty acids (and in particular DHA) and select plant bioactives, have emerged as having the potential to improve cognitive performance and reduce the risk and prevalence of dementia.

In the Department of Nutrition and Preventive Medicine, a main area of research focus is investigating the independent and interactive impact of these dietary components and APOE genotype on cognition, brain volumes and blood flow, and circulating markers of cognitive health. An APOE4 genotype status, which occurs in 25% of the population, is the most prevalent genetic risk factors for Alzheimer's Disease.

The majority of the work uses human randomised controlled trials (RCTs), which are complemented by cell and rodent studies and molecular biology approaches to inform the RCTs and investigate the mechanisms underlying gene ‘diet’ health associations. It is hoped our work will contribute to the identification of strategies to promote ‘healthy’ brain ageing, and in particular in at-risk APOE4 individuals.

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Psychology of dementia

Understanding dementia and its diagnosis is a research priority to develop interventions. In the Department of Psychology, a main area of research focus is investigating new tests to achieve earlier diagnosis and developing interventions that can act early on in the disease and includes comorbid conditions such as depression or diabetes. The work uses psychometric scale development, randomised controlled trials (RCTs), which are complemented by data modeling from cohort studies. We work internationally and cross schools at UEA. It is hoped our work will contribute to the identification of strategies to prevent dementia and conversion into dementia.

Dementia understood from a psychological perspective considers the cognitive, affective and behavioural aspects of living well with dementia for people with dementia and their carers. Post-diagnostic support can improve the function and wellbeing. Thus there is a need to develop research that can examines the utility of structured evidence-based psychological therapies for people with anxiety and depression in dementia. Additionally a contemporary approach to understanding and managing behaviour that challenges in dementia integrates formulation based approaches with a more traditional functional analytic approach to develop efficacious person-centred approaches to helping people who quite literally may not be able to speak for themselves and are at great risk of further disengagement and isolation.

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